Close Form | Next | ..nt Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify)

* 3. Date Received: 08/14/2009

4. Applicant Identifier:

5a. Federal Entity Identifier:

* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: University of New Hampshire

* b. Employer/Taxpayer Identification Number (EIN/TIN): 026000937

* c. Organizational DUNS: 111089470

d. Address:

* Street1: 8 College Road
Street2: Morse Hall
* City: Durham
County: Strafford
* State: NH: New Hampshire
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 03824

e. Organizational Unit:

Department Name: Complex Systems Research Ctr

Division Name: Inst for Study of EOS

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:
* First Name: Karen
Middle Name:
* Last Name: Jensen
Suffix:

Title: Sr. Grant and Contract Administrator

Organizational Affiliation: University of New Hampshire Office of Sponsored Research

* Telephone Number: 603-862-2172
Fax Number: 603-862-3564

* Email: karen.jensen@unh.edu

Close Form | Previous | Next | Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

9. Type of Applicant 1: Select Applicant Type:

H: Public/State Controlled Institution of Higher Education

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Department of Commerce

11. Catalog of Federal Domestic Assistance Number:

CFDA Title:

*** 12. Funding Opportunity Number:**

0660-ZA29

* Title:

Recovery Act - State Broadband Data and Development Grant Program

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Statewide

*** 15. Descriptive Title of Applicant's Project:**

State Broadband Data and Development Grant Program

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Close Form | Previous | Next | Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

16. Congressional Districts Of:

* a. Applicant: NH-001 * b. Program/Project: NH-001

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 09/15/2009 * b. End Date: 09/14/2014

18. Estimated Funding ($):

* a. Federal	2,680,617.00
* b. Applicant	585,388.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	3,266,005.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)**

☐ Yes ☒ No Explanation

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name: Karen

Middle Name:

* Last Name: Jensen

Suffix:

* Title: Sr. Grant and Contract Administrator

* Telephone Number: (603) 862-2172 Fax Number: (603) 862-3564

* Email: karen.jensen@unh.edu

* Signature of Authorized Representative: Karen Jensen * Date Signed: 08/14/2009

Authorized for Local Reproduction

Standard Form 424 (Revised 10/2005)
Prescribed by OMB Circular A-102

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

State Broadband Data and Development Grant Program - State of New Hampshire
Abstract

The State of New Hampshire proposes a coordinated, multi-agency project to inventory and map current and planned statewide broadband coverage available to the state's businesses, its educators, and its citizens. The project will be conducted by the GRANIT (Geographically Referenced Analysis and Information Transfer) System, which is hosted at the Complex Systems Research Center, University of New Hampshire and serves as the NH statewide GIS clearinghouse, in collaboration with New Hampshire's nine Regional Planning Commissions. Consultation and partnerships with state agencies as well as regional and local stakeholders will be an important and ongoing component of the 5-year effort.

The mapping will rely on data collected from the 26+ public and commercial entities providing broadband services in New Hampshire. An intensive 4-month effort will collect data on service availability by type and technology from each active provider. The initial effort will be sustained via regular communications from the providers throughout the project duration. The project team recognizes that obtaining service provider data may present challenges in terms of data availability, quality, content, and ability of the providers to share data, and have incorporated appropriate contingency plans into the project design. Provider data will be mapped by utilizing street centerline data with their associated address ranges. We will access data from the state's E-911 program for the towns with coverage, pending signature of a Memorandum of Understanding (MOU). For the balance of the state, or for the entire state if necessary, we will utilize U.S. Census Bureau TIGER files to provide the required data.

The service data in concert with the address range information and other available geospatial data sets will be used to develop state-level broadband availability maps, identifying areas in the state that are well-served by current technologies as well as those that are unserved or underserved. These data will provide an important baseline assessment for New Hampshire, will facilitate effective dialog in the state regarding use and demand for broadband services, and will assist the state as it seeks to prioritize infrastructure projects and to build a sustainable broadband framework for the future.

All data collected through the mapping project, and not restricted by a non-disclosure agreement, will be provided to the National Telecommunications and Information Administration and the Federal Communications Commission to assist in the development and maintenance of the national broadband map.

In addition to the mapping and related collaboration, we propose a planning component. that will involve the development of broadband stakeholder groups within each region of the State. These groups will conduct activities that include the identification of barriers to broadband services, promoting collaboration with service providers to facilitate deployment and use, collecting and analyzing information on the use and demand for broadband services, and facilitating information sharing between the public and private sectors regarding use of and demand for broadband services.

State Broadband Data and Development Grant Program
State of New Hampshire
Project Narrative

Executive Summary

The State of New Hampshire proposes a coordinated, multi-agency project to inventory and map current and planned statewide broadband coverage available to the state's businesses, its educators, and its citizens. The project will be conducted by the GRANIT (Geographically Referenced Analysis and Information Transfer) System, which is hosted at the Complex Systems Research Center (CSRC), University of New Hampshire (UNH) and serves as the NH statewide GIS clearinghouse, in collaboration with New Hampshire's nine Regional Planning Commissions (RPCs). Consultation and partnerships with state agencies, including the Department of Resources and Economic Development (DRED), the Public Utilities Commission (PUC), and the Office of Energy and Planning (OEP), as well as regional and local stakeholders, will be an important and ongoing component of the 5-year effort.

The mapping will rely on primary data collected from the 26+ public and commercial entities providing broadband services in New Hampshire. An intensive four-month effort will be initiated to collect comprehensive data on service availability by type and technology from each active provider. The initial effort will be sustained via regular communications and data updates from the providers throughout the project duration. The project team recognizes that obtaining service provider data may present challenges in terms of data availability, quality, content, and willingness or ability of the providers to share data, and have incorporated appropriate contingency plans into the project design.

Because there is no complete public or commercial master address file for the state, the provider data will be mapped by utilizing existing street centerline data with their associated address ranges. We will access data from the NH Department of Safety/Bureau of Emergency Communications/E-911 program for the ~130 towns (out of 259) with coverage, pending signature of a Memorandum of Understanding (MOU). For the balance of the state, or for the entire state if the MOU cannot be executed, we will utilize U.S. Census Bureau TIGER files to provide the required data.

The service data in concert with the address range information, various Census Bureau derivatives, and other geospatial data sets available from the GRANIT and RPC archives, will be used to develop state-level broadband availability maps, identifying areas in the state that are well-served by current technologies as well as those that are unserved or underserved. These data on broadband availability will provide an important baseline assessment for New Hampshire, will facilitate effective dialog in the state regarding use and demand for broadband services, and will assist the state as it seeks to prioritize infrastructure projects and to build a sustainable broadband framework for the future.

All data collected through the mapping project, and not restricted by a non-disclosure agreement (NDA), will be provided to the National Telecommunications and Information

Administration (NTIA) and the Federal Communications Commission (FCC) to assist in the development and maintenance of the national broadband map.

In addition to the mapping and related collaboration, we propose a planning component that will involve the development of broadband stakeholder groups within each region of the State. These groups will conduct activities that include the identification of barriers to broadband services, promoting collaboration with service providers to facilitate deployment and use, collecting and analyzing information on the use and demand for broadband services, and facilitating information sharing between the public and private sectors regarding use of and demand for broadband services.

Current Status

In 2008, the NH Department of Resources and Economic Development (DRED) and the Telecommunications Advisory Board (TAB) published the "State of New Hampshire Broadband Action Plan" (http://www.nheconomy.com/uploads/Final-Report-082808.pdf). The document incorporates input from over 350 broadband stakeholders in the state, including businesses, service providers, citizens, educators, healthcare professionals, and others. On the basis of input collected from these stakeholders via forums, surveys, and interviews, the plan offers 25 recommendations intended to move New Hampshire's broadband environment forward.

The Plan identified 12 broadband service providers (including telecom, cable, fixed wireless, cellular, and satellite providers) who replied to a questionnaire regarding future deployment plans and obstacles. The project team has expanded this listing based on findings from several ongoing regional initiatives as well as web research http:///www.wispdirectory.com), yielding the starting roster of 34 broadband service providers presented in Table 1 below. We expect to identify additional providers through consultation with our partners as well as known providers as the project gets underway.

Table 1. Initial listing of service providers in New Hampshire.

Alterracom Networks (WISP)	NCIA (North Country Internet Access) (WISP)
AT&T Wireless	NHVT Wireless Networking Solutions (WISP)
Bayring Communications	Northern Community Investment Corp.
Cingular Wireless	PaeTec
Comcast	Pine Tree Cable
Dixville Telephone Company	Radius North Communications (WISP)
Dunbarton Telephone	segTEL, Inc.
Emerson Network Power	Spectra Access, Inc. (WISP)
FairPoint Communications	Spring
Finowen (WISP)	T-Mobile
First Bridge Internet (WISP)	TDS Telecom – Contoocook
G4	Time Warner Cable
Granite Connection	US Cellular
Granite State Telephone	Verizon Wireless
Mason Internet Coop (WISP)	Web Ryders/SoverNet
MVA.net (WISP)	WiValley, LLC (WISP)

Included in the 2008 report are several maps illustrating data sets that are generally available and will be used as a starting point for our broadband service mapping activities. These include Figures 1 (cable providers) and Figure 2 (cell tower locations) below.

Because detailed information about broadband availability does not exist for New Hampshire, we are unable to submit any preliminary data on unserved or underserved populations in the state.

Figure 1. Cable providers in New Hampshire as of 2008.

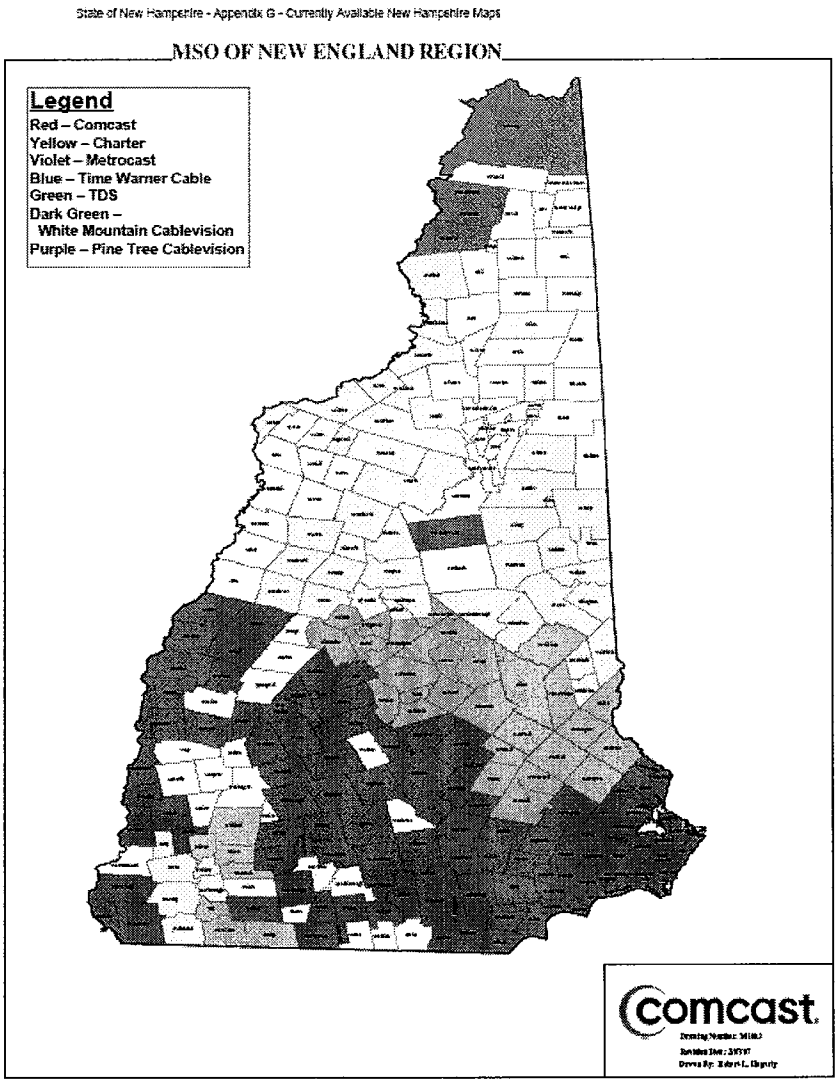
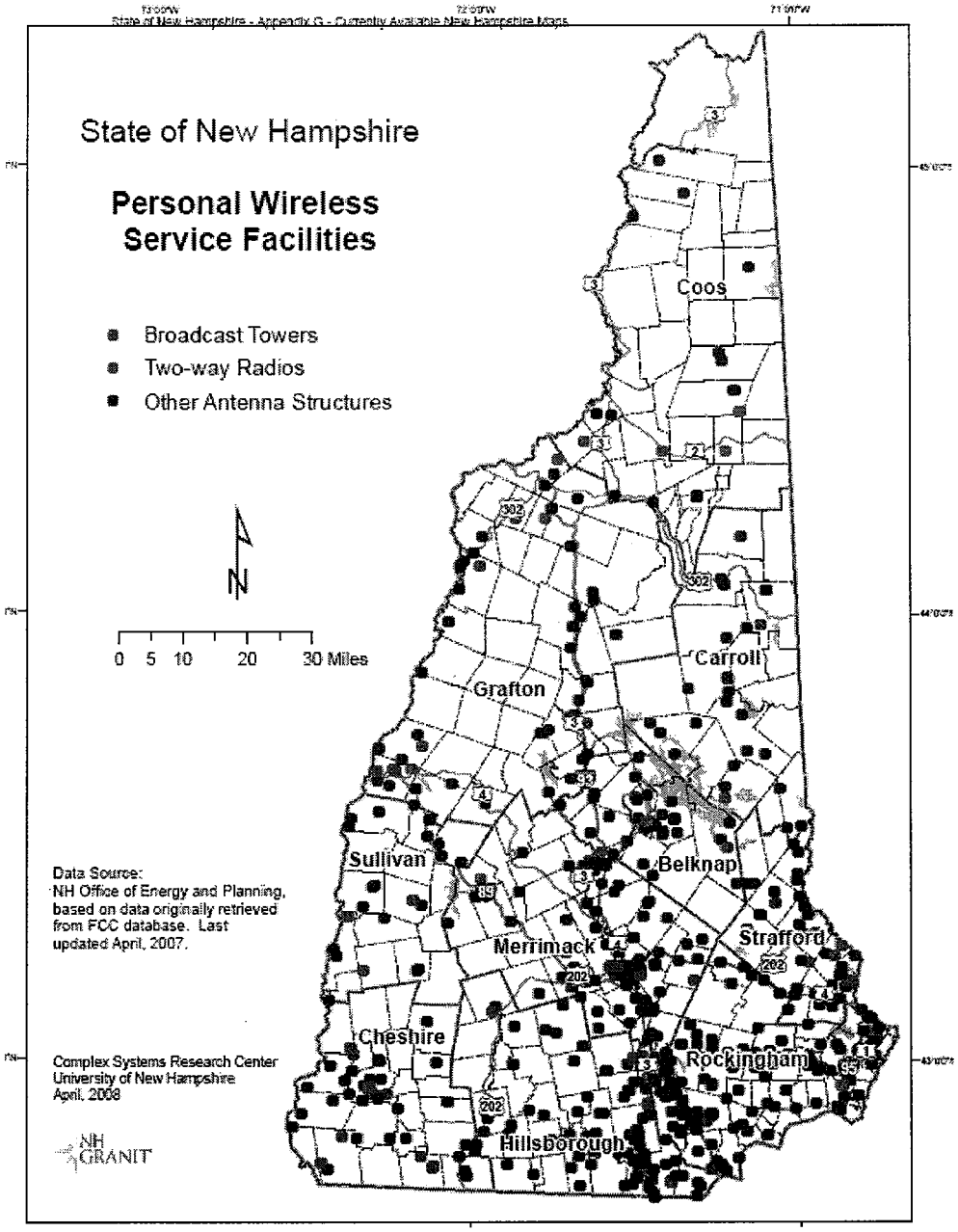


Figure 2. Cell tower locations in NH as of 2008.



1. Data

The State of New Hampshire proposes a coordinated, multi-agency project to inventory and map current and planned statewide broadband coverage available to the state's businesses, its educators, and its citizens. The project will be conducted by the GRANIT (Geographically Referenced Analysis and Information Transfer) System, which is hosted at the Complex Systems Research Center (CSRC), University of New Hampshire (UNH) and serves as the NH statewide GIS clearinghouse (see Appendix A for the Letter of State Designation). GRANIT staff will collaborate with GIS and planning staff in New Hampshire's nine Regional Planning Commissions (RPCs) to complete the mapping project. Consultation and partnerships with state agencies, including the Department of Resources and Economic Development (DRED), the Public Utilities Commission (PUC), and the Office of Energy and Planning (OEP), as well as regional and local stakeholders, will be an important and ongoing component of the 5-year effort.

The primary mapping team, comprising the GIS staff at GRANIT as well as the RPCs, will convene immediately upon project start-up to establish standards and protocols governing data collection aspects of the project. This will ensure that our distributed method of local data collection yields data and products that are consistent across the state. Additional standards will evolve beyond the start-up phase, as data from broadband service providers – with varying content, quality, and formatting – are presented to us.

Our proposed methodologies for collecting the specific data elements listed in the Notice of Funding Availability (NOFA) and its technical appendix clarification are described in the following sections.

1.a Data Gathering

As indicated in the NOFA, mapping broadband service to the address level is the goal of the Department of Commerce in the development of a national broadband map. However, unlike many of our neighboring states, New Hampshire does not currently have statewide master address data. Since the methodology outlined by NTIA's technical appendix clarification indicates that mapping based on address range data may be used in the absence of master address data, we will conduct all data development and analysis at that level of granularity.

Data gathering will start with the acquisition of street centerlines with address range data. Currently the state E-911 program, managed by the NH Department of Safety/Bureau of Emergency Communications, has approximately 130 of the 259 towns in the state mapped (http://www.nh.gov/safety/divisions/emergservices/nh911/911mapping.html). While the coverage is incomplete, the quality of the data set has been consistently shown to surpass that of its commercial or other public counterparts. Therefore, pending signature of a Memorandum of Understanding (MOU), we plan to utilize the available

data set to support the revised NOFA specifications. For the balance of the state, or for the entire state if the MOU cannot be executed, we will utilize U.S. Census Bureau Topologically Integrated Geographic Encoding and Referencing (TIGER) files to provide the required coverage.

Many of the other core GIS data sets required to meet the program mapping requirements are available from the GRANIT statewide GIS clearinghouse (http://www.granit.unh.edu) and/or the project partners. Table 2 below summarizes these data holdings.

Table 2. Data sets available from GRANIT and project partners.

Data Layer	Source
Political boundaries – town/county/state	GRANIT/USGS
Census blocks	GRANIT/US Census Bureau
Census rural areas	GRANIT/US Census Bureau
Demographic data (population, households, etc.)	GRANIT/US Census Bureau
Parcel/tax map data	RPCs/municipalities
Land cover/land use	GRANIT and USGS/National Land Cover
Topography (10-meter DEMs)	GRANIT/USGS
Key community destinations	GRANIT/NH Dept. of Environmental
Aerial photography	GRANIT/NAIP and 1-foot imagery
Personal wireless service facilities	GRANIT/Office of Energy and Planning
Road centerlines w/address range data	GRANIT/E-911 and US Census

Concurrent with the acquisition of the street centerline data, we will develop a comprehensive listing of all broadband service providers in the state. We will utilize the providers identified in Table 1 above as a starting point, and will rely on input from the New Hampshire Public Utilities Commission (PUC), the NH Department of Economic Development (DRED), the NH Telecommunications Advisory Board (TAB), and local knowledge to assist us in verifying and updating the listing. Ultimately, we will generate a master list of all broadband service providers that meet the NOFA definition of "broadband", e.g. two-way data transmission with advertised speeds of 768 kbps downstream and 200 kbps upstream.

1.a.1. Broadband Service Availability in Provider's Service Area

1.a.1.a. Availability by Service Address - Service Associated with Specific Addresses

The first stage of the mapping effort will be to acquire service area map data from fixed-wired service providers and apply those data to the street centerline data to develop a spatial representation of the coverage area. In the absence of service maps, provider's customer addresses will be gathered and geocoded using street centerline data with address ranges to develop the service area. (As per NTIA's technical appendix clarification and as outlined above, the service provider coverage area will not be mapped to the address level.)

Each of the service provider types and their subsequent coverage area will be aggregated to the census block level. Based on NTIA's technical appendix clarification, we will provide a listing of the census blocks in New Hampshire no greater than two square miles in area where service is available. In census blocks that are greater than two square miles in area, we will provide the street segments and address ranges that the service covers.

1.a.1.b. Availability by Shapefile – Wireless Services not Provided to a Specific Address

We will work with the fixed wireless and terrestrial mobile wireless providers to map the tower infrastructure. Using the personal wireless service facilities already collected and mapped by the NH Office of Energy and Planning and GRANIT, service provider, location and signal strength information will be verified at each location. Any additional service provider, and/or wireless infrastructure not mapped in the personal wireless service facilities dataset, will be mapped using information provided by the provider. For the providers that have existing spatial data depicting their coverage area, we will convert the data if necessary into shapefile format and aggregate the data to the census block level to identify the coverage area.

For the wireless providers that do not have spatial service data, we will utilize "Cellular Expert" signal propagation modeling software (http://www.cellular-expert.eu/DesktopDefault.aspx?tabID=3331&alias=cellular-expert&lang=en-US) to estimate wireless service area by analyzing signal strength. The software utilizes viewshed analysis to evaluate data on tower height to determine the area that a signal can travel, based on surrounding topographic and vegetation data. Provider data will be analyzed for free-path loss, absorption, noise, reflection, refraction and multipath, in addition to calculating attenuation, frequency and distance of signal travelled. Additionally, the signal propagation model will be used to assist the state in identifying potential expansion of wireless service to enable broadband deployment to the unserved and underserved areas.

To support the signal propagation modeling, we propose to acquire LIDAR (Light Detection and Ranging) high-resolution topographic data of selected urbanized areas. This acquisition will allow us to refine and verify wireless propagation service data by enabling us to exclude areas blocked by buildings or by terrain features. Importantly, the proposed acquisition will also contribute to the New England LIDAR project, which is tentatively scheduled to begin in the spring of 2010. LIDAR data acquired will not be available for project use in the first year of the project, but will contribute to updates and refinements submitted in the subsequent phases of the project.

1.a.2. Residential Broadband Service Pricing in Provider's Service Area

1.a.2.a. Average Revenue Per End user (ARPU) and Weighted Average Speed

As per the NTIA's technical appendix clarification, the average revenue per end user will not be required. However, calculating each service provider's weighted average speed is required. Using the methodology outlined in the NOFA, each service provider's speed

tier multiplied by the number of customers subscribed to the speed tier divided by the average monthly subscribers will be calculated. Each service provider's data will be provided at the state level to NTIA as per the NOFA.

1.a.3 Broadband Service Infrastructure in Provider's Service Area

1.a.3.a Last-Mile Connection Points

While these data are no longer required as per NOFA technical appendix clarification, data will be provided to the extent it is made available by service providers.

1.a.3.b Middle-Mile and Backbone Interconnection Points

Working with the fixed wired service providers, each central office (CO), remote terminal (RT) and remote office (RO) of the service provider that is classified as "middle-mile" and "backbone interconnection points" will be identified and mapped. Additionally, the fixed wireless providers that may rely on provider's core network elements to connect their infrastructure will be identified and mapped. It is understood that for some fixed wireless providers their infrastructure backbone interconnection point may reside outside of the State's boundary. However that data will be provided to satisfy the data development requirement.

1.a.4 Community Anchor Institutions

To support the Community Anchor Institutions (CAI) component of the project, we will map the locations of all CAIs in the state as per the NOFA guidance. This will include, at a minimum, schools, libraries, medical and healthcare providers, public safety entities, and institutions of higher education. Other types of facilities may be added, pursuant to discussions with the project collaborators at the outset of the project.

Master lists of each facility type will be compiled from a variety of sources. Through previous efforts, including the development of municipal hazard mitigation plans, the RPCs have begun the process of identifying CAIs. The RPCs, as well as GRANIT staff, also participated in the development of a statewide "key destinations" data layer several years ago, which captures the location and addresses of several of these facility types. These data will be updated and augmented by referencing listings available from state agencies (e.g. NH Department of Education, NH Department of Safety, NH Department of Health and Human Services, etc.), data from the Homeland Security Infrastructure Program of the National Geospatial-Intelligence Agency, and any recommended references provided by NTIA.

The identification and mapping of state government operations will utilize information available from the NH Department of Administrative Services. The Bureau of Planning & Management publishes an annual listing of all state agency operations owned by the state. Many of the properties identified do not function as offices, but rather, represent state parks, boat access ramps, etc. It appears that there are 350-400 office properties that

will require mapping, and this number will be confirmed as the project gets underway. Furthermore, the Bureau publishes an annual listing of state operating leases (92) and court leases (28), which includes information for all State entities required to report to Administrative Services. Excluded from these listings are the University System of New Hampshire, the New Hampshire Technical College System, the Liquor Commission, Legislative Services, and the Secretary of State. We plan to individually contact those organizations to complete the state government operations listing.

Once the master lists are established, we will map the facility locations using existing data where available (e.g. the local hazard mitigation plans referenced above required the development of geospatial data for many of the community facilities, and "key destinations" is a GRANIT data layer). For all other data elements, including government operations, we will geocode against the address range data to establish locations. We will rely on available aerial photography to map and/or confirm locations where questions arise. Finally, we will utilize field data collection (via GPS) where necessary to collect the locational information.

The broadband availability data associated with each facility, and required to meet the NOFA technical specifications, will be collected via questionnaires completed by email, telephone communications, or US mail by the contact individual at each location. This will include a categorization of the facility by type, as well as basic subscription information, technology of transmission data, and advertised downstream and upstream service speed.

Data Analysis

Previous interactions with the broadband service providers suggest that they will be supportive of the mapping effort and provide the requested data. However, we recognize that the data will arrive in unpredictable formats (ESRI shapefiles, AutoCAD files, etc.), and will vary with respect to content and quality. Thus, part of our data analysis task will involve developing tools and scripts to assist in converting the data sets to standardized formats required for reporting to NTIA as well as for our own analyses. These conversion tools will allow us to be flexible in our interactions with providers, and to minimize any burden we place on them.

Using GIS tools and the data acquired through the data collection phase and standardized as described above, we will conduct spatial analyses to determine those areas in New Hampshire that are unserved and underserved, as defined in the NOFA. These analyses will aid the state in focusing broadband infrastructure expansion activities on those areas of greatest need. They will also offer an important resource to service providers, who can utilize the information in developing business case studies to support increased deployment. As Peter R. Orszag, director of the Office of Management and Budget, declared in a recent speech, "Robust, unbiased data are the first step toward addressing our long-term economic needs and key policy priorities," (New York Times Online August 6, 2009 – For Today's Graduate, Just One Word: Statistics).

The census blocks will be analyzed as per the NOFA guidance to determine whether each block meets the established criteria for underserved or unserved. The determination will be accomplished by geocoding service provider customer data to street centerlines, aggregating the results to census blocks, and analyzing that data against total households per census block.

For service providers that do not provide customer level information or for wireless service providers, their service coverage area will be combined with census blocks and street centerlines to determine the address ranges of those census block areas. To calculate whether each census block meets the unserved or underserved criteria, the service area will be analyzed against existing land use and tax parcel information, and the calculation of the number of households able to be served will be determined.

1.b Accuracy and Verification

The accuracy of the initial service availability data will be verified using a number of mechanisms, ranging from robust statistical protocols to more informal web-based survey techniques. These mechanisms will include:

- Telephone-based survey of statistically significant sample of all addresses and statistically significant sample of rural addresses. The project team will collaborate with the UNH Survey Center (http://www.unh.edu/survey-center) to design and conduct an independent phone-based survey at the conclusion of the initial phase of data development. The Center has conducted survey research projects supporting policy and research since its inception in 1976, and completes 40-50 significant survey projects annually. The broadband poll will be designed to collect address information as well as the data on broadband availability necessary to perform the assessment. For all addresses, we anticipate a survey of approximately 500 respondents, yielding a margin of error of +/- 4.4% at the 95% confidence interval.

- Secondly, we will validate the initial results by utilizing the infrastructure data collected in concert with the service availability data to evaluate the logical consistency of mapping results. Using basic GIS proximity techniques, we will map the service footprints in conjunction with the reported provider infrastructure, and evaluate whether specific infrastructure is capable of supporting the reported service availability data.

- Thirdly, we will develop a consumer-oriented web site that will allow users to report the broadband services they currently utilize or have access to, and/or to request service (or enhanced service) at a specific location. While we recognize the submissions will be scattered and will likely not yield statistically valid results, these data will provide another method to informally verify the mapping results. Because consumers will be invited to request services through the web tool, the data will also serve as a "demand" indicator and will be shared with state partners and service providers as appropriate. We

have registered an appropriate URL (http://iwantbroadbandnh.org), and will promote its usage to communities, businesses, and residents through communication efforts of the regional planning commissions.

In addition to the independent analysis of these approaches, we will combine the data from the verification methodologies to compare the user provided data with the provider service availability data. The results of this analysis will indicate whether the service provider's advertised speed tier and coverage area meshes with that delivered to the consumer.

The validation of the signal propagation modeling will be achieved by working with the fixed wireless and terrestrial wireless providers to determine whether predicted areas of service have any current customers. We will also conduct a statistically significant number of in-the-field spot checks, used to verify that service may be provided at the location regardless of whether a consumer subscribes to service at that location.

Verification of the middle-mile and interconnection backbone locations will be conducted through collaboration and data sharing between the service providers, the State's application for infrastructure expansion as part of RUS and NTIA's BIP and BTOP, and this project. As service providers and the State work to expand the middle-mile and interconnection backbone, the locations and service at those locations will be verified and added to the mapping data set.

Validation of the bi-annual updates will also be performed, and will rely most heavily on the GIS-based assessment technique as well as continued submissions to the consumer web site. We will also work with the UNH Survey Center to add selected questions to their quarterly "Granite State Poll" during the maintenance phases of the project, but do not plan to conduct additional independent surveys beyond the first phase.

1.c Accessibility

We plan to utilize several approaches to ensure that the data collected through the project activities and the maps developed from those data are made available to and easily understood by planners, researchers, local/state decision-makers, and the general public.

A series of preformatted state-level maps (.pdf format) will be produced to display the areas of the state served by the various broadband technologies. The maps will be developed in consultation with the project partners, and will be customized to meet their expressed needs and preferences. At a minimum, a large-format map product will be produced that distinguishes broadband availability by type of technology. A second map will be generated to identify areas in the state that are determined to be unserved or underserved, as per the NOFA definitions. These large-format maps will have the "real estate" required to display statewide data sets. Multiple map products may be required to show comparable data in a smaller format, and will be developed for those relying on desktop printing capabilities. All relevant map products will be posted on the State of New Hampshire/Department of Resources and Economic Development web site

(http://nheconomy.org), the GRANIT web site (http://www.granit.unh.edu), and the web sites of the 9 regional planning commissions (see Appendix B). The maps will be accompanied by documents explaining their content and appropriate usage and authored for consumption by non-technical audiences.

We also plan to build a public-facing web mapping application designed to serve the appropriate project data to the various stakeholders in the state. The GRANIT staff has access to and expertise in the range of web mapping products offered by ESRI (including ArcGIS Server and ArcIMS), but will also consider open source solutions (MapLayers) for the application. Research during the first year of the project will guide us in selecting the appropriate technology for this service. At a minimum, we will design the service to accommodate basic inquiries into broadband service availability at a specific location so that users can conveniently determine options for broadband service. Additional functionality will be incorporated based on consultation with our project partners.

In addition, the service availability data sets, aggregated by type as appropriate and as per described in the NOFA, will be documented in an FGDC-compliant manner and made available for public download through the GRANIT data clearinghouse. Utilizing the existing tools, users may easily discover and download data based on theme keyword(s), geography, or a combination of both. Data formats supported by the tool include standard shapefiles as well as kmz files suitable for use with Google Earth.

All data and map distribution efforts will follow NTIA guidance regarding the aggregation and appropriate display of information from multiple providers. Products will also respect any non-disclosure agreements executed with individual service providers. Finally, hypertext links to the preformatted maps served by GRANIT and the web mapping application will be provided to the NTIA as required by the NOFA.

Collectively, the various mechanisms described above will ensure that the data and map products are made readily available to interested parties in the state. This will, in turn, promote effective and ongoing dialog in New Hampshire relative to sustainable broadband deployment.

1.d Security and Confidentiality

It is understood that in order to complete a comprehensive broadband map for the state, we need the full cooperation of the service providers, both large and small. In order to garner broadband provider buy-in, we have worked diligently to develop a relationship and atmosphere of trust. As a result, many providers have already committed to providing data and other assistance to the project.

Nevertheless, in order to have the full confidence and cooperation of all broadband service providers in New Hampshire, a non-disclosure agreement (NDA) will be used to obtain sensitive, confidential and proprietary information. Materials received under an NDA will be considered confidential and proprietary to the project and will be only used as stipulated in the NOFA and its clarification. We have included in Appendix C a

sample NDA to be used for this purpose, and will work closely with the University of New Hampshire's Office for Research Partnerships and Commercialization (http://www.orpc.unh.edu) to tailor this template to meet our needs as well as those of the broadband service providers.

We recognize that providers may have different concerns in order to provide information, however we will make all attempts possible to enter into a uniform agreement that protects confidential information while allowing for the delivery of data to NTIA to be used in the national broadband map. Through the data gathering methodology, processes will be developed to mask sensitive provider information, unless the provider has given explicit consent. Some processes include: data encryption; masking and filtering address specific data to linear and/or polygon based service areas; and customer data aggregation to census block areas. As this project is a collaboration of many entities, it will be important to document the methodology used to ensure security of service provider and customer data.

Additionally, any data collected via the project's website, iwantbroadbandnh.org, will be gathered via a secure socket layer (SSL), and all service provider and customer information will be encrypted.

2. Project Feasibility

2.a Budget

The total budget requested for the proposed state project is $2,680,617, comprising $2,190,943 in broadband mapping costs and $489,674 in project planning costs.

Mapping Component
Within the mapping component, $869,671 will support activities of the GRANIT staff at UNH. Two months of support in year 1 and 1.5 months of support in the subsequent years is requested for F. Rubin, who will serve as project manager. In that capacity, she will be responsible for general project oversight as well as for all project reporting. Other project staff at UNH will include M. Blair, who is budgeted for 9 months in year 1 and 3 months in subsequent years, and who will assist in coordinating the project, developing the project standards, managing communications with the service providers, developing the web-based tools, and working directly with the RPCs to ensure timely, consistent, and accurate data development. D. Justice of UNH, who is budgeted for 3 months in year 1 and 2 months in subsequent years, will focus primarily on data development and updating, data analysis, and map product development. He will also assist in standards development and in web tool construction.

UNH also requests support to: purchase a server ($10,000) to host the project web mapping tools, commission a survey from the UNH Survey Center ($10,000) as part of the verification plan; support system maintenance activities provided by the UNH Research Computing Center ($6,000/year); acquire 2 "seats" for Cellular-Export signal

propagation software ($33,200 in year 1 and $7,304/year for maintenance in years 2-5); cover travel costs associated with provider meetings and RPC meetings ($6,000 in year 1, $3,500 in subsequent years), and cover miscellaneous supply costs ($5,000 in year 1 to cover the cost of a laptop/docking station to facilitate off-site data collection activities and working with distributed RPC staff ($4,000) and supplies ($1,000), and $1,000 in subsequent years).

In addition, $200,000 is requested to acquire LIDAR data to support the wireless propagation models. This airborne LIDAR data collection cost will cover selected urban areas in New Hampshire, where urban refers to cities or towns with numerous tall buildings that can create interference in radio frequency propagation. The proposed collection will be used to leverage extended coverage in New Hampshire acquired through a larger, regional LIDAR project – LIDAR for New England.

The proposed budget includes a subcontract in the amount of $1,810,946 to the Southwest Region Planning Commission (SWRPC). This total comprises $1,321,272 to support broadband mapping activities, and $489,674 to support planning activities. (Note: The NOFA requested that two separate budgets be submitted. However, because the entirety of the planning work will be subcontracted by UNH to the RPCs, only the cumulative dollars appear in the budget.)

Within the RPC mapping activity allocation ($620,865, or 47%) is subcontracted in year 1 to cover costs associated with the initial data development, with the balance allocated evenly over the remaining 4 years of the project to cover mapping maintenance activities. The SWRPC will, in turn, execute subcontracts with the other 8 RPCs in the state. Year 1 dollars are requested to support 6 months of effort in data development (including data collection for all Community Anchor Institutions, collection of service provider data, etc.) and data maintenance. Year 2-5 dollars are requested to support 1.5 months of mapping effort per year (e.g. 3 weeks per update cycle). All years of the RPC mapping budget include a modest allocation (4 hours/week per RPC) for project collaboration activities and web site enhancement.

Planning Component

In addition to the data development and mapping effort of the RPCs, a planning component is proposed for years 2-5. Planning activities will include the creation of broadband stakeholder groups within each region of the State, whose activities will include the identification of barriers to broadband services, promoting collaboration with service providers to facilitate deployment and use, collecting and analyzing information on the use and demand for broadband services, and facilitating information sharing between the public and private sectors regarding use of and demand for broadband services. Years 2-5 dollars are requested to support 1.5 months of planning effort each year per RPC. This planning component is intended to make effective, efficient and prolonged use of the mapping and collaboration components of this overall proposal.

Request for Coverage of Pre-Award Costs

Included in the RPC subcontract is a request $22,500 in year 1 for work conducted on developing service provider partnerships, initial data development methodology and data standards, and documentation of the project and partner coordination methodology. Additionally, review and understanding of NOFA requirements, concept development, outreach/coordination with RPCs, preliminary coordination with vendors, and grant application preparation has been conducted.

This work has been conducted from the project announcement through the present and will continue through the award date. All efforts are being made to ensure that upon the project approval and award, we are prepared to "hit the ground running" complete the project within the outlined schedule.

Documentation of Match

A total of $585,388 in match has been committed to the project, representing 22% of the project budget, and comprising both cash and in-kind components. The cash component includes a total of $90,547 from the 9 participating RPCs, and $26,497 from the University of New Hampshire in the form of a reduction in the Facilities and Administrative rate from the negotiated rate of 34.2% to 29.2%.

In-kind match is provided in the amount of $468,345, and includes the following components as documented in Appendix D.

- From NH Office of Energy and Planning - $8,567
- From NH Department of Environmental Services - $34,509
- From NH Department of Resources and Economic Development - $31,250[1]
- From Town of Hanover (representing a consortium) - $52,769[1]
- From RPC software licensing - $18,250/year[1]
- Value of parcel data - $50,000/year[2]

[1]Appendix D documents the full value of broadband planning and consultant services provided to the state and to regional consortia, and the full value of the portion of annual GIS software maintenance costs paid by non-federal funds. We propose to use 50% of each full value as project match.

[2]Appendix D documents the full value of available digital parcel data. We have utilized 9% of that value as project match.

The project will benefit from address range data collected by the NH Department of Safety/Bureau of Emergency Communications (BEC). Because the BEC is planning to utilize the E-911 data development costs in a future project, we are unable to document them as part of the in-kind contribution for the proposed effort. Nevertheless, it is important to note the significant asset represented by this data stream.

2.b Applicant Capacity, Knowledge and Experience

The New Hampshire broadband mapping project will be managed by Fay Rubin, GRANIT Project Director, Complex Systems Research Center, University of New Hampshire. Rubin has managed the NH GRANIT System, the NH statewide GIS clearinghouse, since its inception in the mid-1980's. As the state's official GIS clearinghouse, GRANIT provides a range of geospatial services to its participating agencies as well as the public at large. Among these services are database development/coordination/hosting/serving, online mapping services, spatial modeling/analysis, technical training, and technical support.

Over the past 25 years, Rubin has coordinated projects with a host of state and federal partners, including at the federal level the Department of Homeland Security/Federal Emergency Management Agency, Department of Agriculture/US Forest Service, Department of Interior/US Geological Survey, US Environmental Protection Agency, and others. Of particular note, she has managed FEMA-funded GIS mapping activities in NH for more than a decade, requiring coordination among federal, state, local, and private sector partners. Under her leadership, GRANIT was designated by FEMA as the first University-led Cooperating Technical Partner (CTP) in the country (http://www.fema.gov/plan/prevent/fhm/ctp_scss.shtm). At the state level, Rubin has managed projects funded by the Departments of Resources and Economic Development, Transportation, Safety, Environmental Services, Health and Human Services, and the Office of Energy and Planning among others. Broadly, these projects have required the development of geospatial data sets and the application of geospatial processes and techniques to resources management issues at the state, regional, and local levels.

Michael Blair, GRANIT staff and GIS consultant, will assist Rubin in coordinating the project. Blair has over 15 years experience in the fields of GIS, database management and architecture, information system technologies, spatial data modeling and analysis, web-based application development, data aggregation, project management, regional planning, and technical training. This experience has been used in the development of corporate client management systems, regional and statewide data aggregation programs, GIS models and algorithms, and has provided technical assistance on the implementation GIS and data management systems. Blair has completed projects for a range of clients, including non-profits, small businesses, Fortune 500 companies, and academia, as well as federal, state and local government. In addition to his technical expertise, Blair's ability to negotiate with public and private data providers and multiple telecommunications providers for data acquisition, his leadership in developing GIS data models for the analysis of disparate datasets, and his management of various collaborative data mining projects provide additional experience and expertise to Rubin on the project coordination.

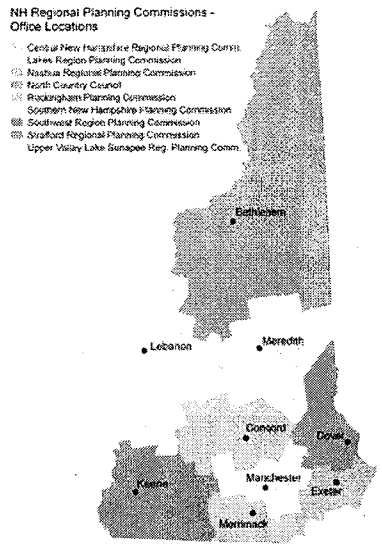
Assisting Rubin and Blair on planning technical aspects of the proposed project will be Steve Schaffer, GIS Manager, Nashua Regional Planning Commission. Schaffer has experience with GIS needs assessment, implementation planning, data models, asset

collection and mapping in the utility field, and previously served as project manager through all phases of a public utility GIS implementation.

The primary project team will utilize the Project Management Body of Knowledge (PMBOK) as a mechanism to manage the complexity and breadth of the project processes. Based on extensive experience, the team feels confident that using the PMBOK will yield a successful effort, as the project scope, requirements, timeframes, resources and costs will be clearly identified and managed.

Collaborating with GRANIT staff on data collection and mapping activities will be the nine Regional Planning Commissions (RPCs) in the state (see Figure 3). The RPCs were established in the late 1960's and early 1970's following the enactment of RSA Chapter 36, which enables municipalities and counties to cooperatively establish RPCs. As established in the statute, the primary purpose of RPCs is to prepare coordinated plans for the development of their regions, encouraging the most appropriate use of land for such purposes as conservation, economic development, transportation, public utilities, and housing. Related responsibilities include preparing housing needs assessments, evaluating developments of regional impact, and providing planning services to municipalities, as well as to state agencies and other public entities.

Figure 3. Location of Regional Planning Commissions in NH.



In 1990, the RPCs received a special legislative appropriation through the Office of State Planning (now Office of Energy and Planning) to equip and train each commission with GIS capabilities primarily for the purpose of assisting and improving local and regional planning functions. Since that time, the RPCs have continued to extend and refine those capabilities. They have worked extensively with their communities to provide up-to-date GIS based maps and analyses to support local master plans and other planning efforts. They coordinate extensively with GRANIT in the development, use and dissemination of GIS data, partner with the state resource agencies to develop regional and local GIS information pertinent to their functions, and help local communities make use of the GIS databases coordinated and maintained by GRANIT in local planning applications.

Appendix B identifies the key staff at GRANIT and at each RPC who will be involved in the project.

GRANIT staff will be responsible for the following tasks:

- Coordinating standards development
- Assembling all required base information
- Preparing and executing Non-Disclosure Agreements (NDAs)

- Collecting information from larger providers covering multiple RPC jurisdictions
- Developing statewide data on governmental entities
- Developing data on broadband infrastructure
- Integrating information collected by RPC staff
- Preparing required scripts/models for data processing
- Processing the data to derive required NTIA data submissions
- Conducting QA/QC on the data
- Preparing analytical products, including identification of unserved/underserved areas
- Developing web resources, including mapping and consumer reporting site
- Overall project coordination

RPC staff will be responsible for:

- Assisting in standards development
- Collecting information from smaller providers within their individual jurisdictions
- Collecting Community Anchor Institutions (CAI) data
- Assisting in QA/QC of the data
- Assisting in map generation
- Posting relevant map and data products to their respective web sites
- Coordinating with their local providers and member communities to promote the project
- Convening regional broadband stakeholder groups to carry out those activities as described in the planning component of this overall proposal.

3. Expedient Data Delivery

New Hampshire will be initiating its first substantive broadband availability inventory and mapping effort with this project. We will strive to progress quickly, efficiently, and accurately through the identified tasks, but cannot commit to providing a substantially complete data set as defined in the guidance by the preferred date of November 1, 2009. Instead, we propose to complete the following tasks by the November 1st date:

- Development of working standards and protocols for data collection/verification
- Identification of and initial contact with active service providers in the state
- Identification of rural areas based on Census Bureau data
- Development of Confidentiality and Non-Disclosure Agreement template
- Substantially complete data set of public Community Anchor Institutions
- Preliminary data set of governmental entities

A substantially complete data set is proposed for delivery to NTIA by February 1, 2010. As required by the NOFA, the data set will contain data on broadband services provided a) by 70 percent of service providers in the state, b) to 80 percent of households in the state, c) to 90 percent of households in rural areas of the state, and d) to 95 percent of public Community Anchor Institutions. Following guidance in the Technical Appendix of the NOFA and the subsequent clarification, the following data sets will be provided containing data accurate as of June 30, 2009:

- Census blocks in which broadband service is available to end users for census blocks less than or equal two square miles in area; Street segments with address ranges in which broadband service is available to end users for census blocks larger than two square miles in area
- Broadband Service Availability by Service Provider and by Service Area (shapefile – for services not provided to a specific address)
- Residential Broadband Service Pricing by Service Provider
- Broadband Service Infrastructure – Middle-mile and Backbone Interconnection Points
- Community Anchor Institutions and Governmental Entities

Beyond the February 1, 2010 submission data, the project team will focus on a number of tasks. First, we propose to complete the data collection for all of the data sets enumerated above by March 1, 2010. A revised submission will be provided to NTIA by June 1, 2010. We will also focus our efforts on developing the data analysis components of the project, including identification of unserved and underserved areas, during the period of February – June 2010. Lastly, we anticipate finalizing the mapping products – including the formatted maps (first phase) as well as the web-based mapping tools – during the 2nd 6 month project period.

During years 2-5, we will adhere to the NOFA requirement of submitting updated products on a bi-annual basis. Table 3 presents our proposed project schedule for the initial data delivery and the subsequent maintenance phases of the project.

Table 3. Proposed project schedule and Work Breakdown Structure (WBS).

Task	Year 1							Year 2				Year 3				Year 4				Year 5			
	9/15/2009 - 10/31/2009	11/1/2009	11/1/09 - 1/31/10	2/1/2010	2/1/10 - 2/28/10	5/1/2010	3/1/2010 - 8/31/2010	9/1/2010	9/1/10 - 2/28/11	3/1/2011	3/1/2011 - 8/31/2011	9/1/2011	9/1/11 - 2/28/12	3/1/2012	3/1/2012 - 8/31/2012	9/1/2012	9/1/12 - 2/28/13	3/1/2013	3/1/2013 - 8/31/2013	9/1/2013	9/1/13 - 2/28/14	3/1/2014	3/1/2014 - 8/31/2014	9/1/2014
1. Project Setup																							
1.1 Develop project standards																							
Establish mapping conventions and protocols	x																						
Create data collection templates	x																						
Develop data conversion tools and scripts	x		x																				
1.2 Prepare project documents																							
Develop Confidentiality and Non-Disclosure Agreement (NDA) template	x		x																				
1.3 Assemble data inputs																							
Identify rural areas in New Hampshire	x																						
Develop list of Community Anchor Institutions	x																						
Develop list of non-federal governmental entities	x																						
Obtain and standardize available address/address range data	x																						
Obtain and standardize available topographic data	x																						
Obtain and standardize available vegetation data	x																						
1.4 Coordinate data development methodology																							
Convene session of all RPC GIS Managers to review and adopt project methodology	x																						
2. Initial Data Collection																							
2.1 Acquire Service Provider Data																							
Develop list of active service providers	x																						
Develop contacts for each service provider	x																						
Execute NDAs, as necessary	x		x																				
Acquire infrastructure data from service providers	x		x		x																		
Acquire customer data from service providers	x		x		x																		
Preprocess data, as necessary	x		x		x																		
2.2 Community Anchor Institutions (CAIs)							x																
Collect data at regional level on CAIs	x				x																		
Assemble data into statewide data set and verify	x				x		x																
2.3 Governmental Entities																							
Collect data from all non-federal governmental entities	x		x		x																		
3. Data Analysis and Packaging																							
3.1 Delineate service areas for "wired" services	x		x		x		x																
3.2 Create and test signal propogation models for mapping wireless			x		x		x																
3.3 Execute signal propogation model for mapping wireless provider service areas	x		x		x		x																
3.4 Identify unserved/underserved areas					x		x																
3.5 Conduct QA/QC to ensure all data conforms to domain values provided			x				x																
3.6 Generate service area polygons, and aggregate as required to meet confidentiality requirements			x				x																
3.7 Prepare data in required format for submission to NTIA			x		x		x		x		x		x		x		x		x		x		x
3.8 Acquire and process LIDAR data to refine signal propagation models									x		x		x		x								
4. Data Verification																							
4.1 Consumer Web Site																							
Design and develop consumer web site	x																						
Pilot test web site	x																						
Launch and promote final web site			x																				
Collect and analyze consumer web site data			x		x		x		x		x		x		x		x		x		x		x
4.2 Data Verification Survey																							
Design questions for data verification survey			x																				
Contract with UNH Survey Center to execute survey			x																				
Analyze survey results			x																				
4.3 GIS Assessment																							
Develop GIS data validation models			x																				
Execute GIS data validation models			x		x		x		x		x		x		x		x		x		x		
5. Data Updating																							
5.1 Contact all service providers and request updated data sets					x		x		x		x		x		x		x		x		x		x
5.2 Process data sets, as required					x		x		x		x		x		x		x		x		x		x
5.3 Perform data verification using GIS methodology and data collected through consumer web site					x		x		x		x		x		x		x		x		x		x
5.4 Prepare data for submission to NTIA					x		x		x		x		x		x		x		x		x		x
6. Data Delivery to NTIA																							
6.1 Submit first delivery to NTIA - effective as of June 30, 2009																							
Submit results of initial data collection to NTIA		x																					
Submit substantially complete data sets to NTIA				x																			
Submit final data sets to NTIA						x																	
6.2 Submit updates to NTIA (data effective 3 months prior)								x		x		x		x		x		x		x		x	x
7. Data Accessibility																							
7.1 Post service area and CAI data sets to GRANIT Clearinghouse							x																
7.2 Generate and post maps to GRANIT and RPC web sites							x																
7.3 Design and build web mapping interface							x																
7.4 Maintain web mapping interface									x		x		x		x		x				x		x
8. Planning and Collaboration																							
8.1 Coordinate with state collaborators																							
Meet with state agency partners to present and review project plan	x						x		x				x				x				x		
8.2 Coordinate with regional groups/communities			x		x		x		x		x		x		x		x		x		x		x
8.3 Coordinate with service providers to encourage cooperation and promote project	x		x		x		x		x		x		x		x		x		x		x		x

4. Process for Repeated Data Updating

The project partners recognize that the broadband landscape in New Hampshire is rapidly changing. Perhaps most significantly, FairPoint Communications purchased the landline telecommunications assets in NH, VT, and Maine from Verizon in March of 2008, and committed to a minimum of $45 million in broadband investment over the subsequent five years in New Hampshire alone (NH Broadband Action Plan, 2008). We have therefore developed a plan to update the project data sets and the associated derivative products on a bi-annual basis for the 5-year duration of the project. The updating protocol will utilize the guidelines, tools, and methodologies identified for the initial phase of data collection, and will involve:

- RPC staff will contact each Community Anchor Institution (CAI) identified during the initial data collection via email, provide a listing of the technical data we have on record for each, and request updates. RPC staff will also review the CAI data relative to any newly published listings, and populate new entries (or retire old entries) as appropriate.

- GRANIT staff will contact each governmental entity identified during the initial data collection via email, provide a listing of the technical data we have on record for each, and request updates. GRANIT staff will also contact the NH Department of Administrative Services, and request updated listings of state-owned properties and state leases. (The latter may only be achievable once/year, as the published listings are updated only annually.)

- RPC and GRANIT staff will contact each service provider identified during the initial data collection, and request updated customer service listings and/or service area mapping. In most cases, we anticipate that the data will be provided in a format similar to that provided during the initial data collection, thereby allowing us to re-use automated processing tools developed for the project.

In addition to the above, we will continue to promote the use of the consumer web site "iwantbroadbandnh.org" throughout the 5-year project, which will yield current data on broadband availability in the state.

Finally, the State has committed to channeling infrastructure data to the New Hampshire Broadband Mapping Program as new and/or expanded infrastructure installation is completed. This commitment and partnership will ensure that information presented through the mapping project will be current and up-to-date with limited barriers to acquiring the service provider data.

5. Planning and Collaboration

We have proposed a collaborative project that utilizes the NH statewide GIS (NH GRANIT), the State's nine Regional planning commissions (RPCs), and the partnerships each has with state and local government, academia, non-profits and private businesses across New Hampshire (see Appendix E for letters of support). Thus we will have access to a variety of resources from other agencies and partners that will work together to ensure that the information is kept up to date and that our efforts are supported.

First, the State's Telecommunications Advisory Board (TAB) is a legislatively created body for the express purpose of continually assessing the status of the State's telecommunications structure, and providing recommendations for improvements. The TAB conducted some of the initial mapping of the State's Telecom infrastructure, which was included in their Final Broadband Action Report (2008). The TAB is a collective of private, public, non-profit, and citizenry, and is the perfect vehicle to assist GRANIT with future inroads to affected stakeholders; particularly from the industry perspective.

Further, the State Department of Resources and Economic Development (DRED) recently posted the position of Telecommunications/Broadband Director which is in the process of being filled. The position was created in legislation born out of the efforts of the TAB, and recommended in the TAB's Action Report. This position is charged with furthering the awareness of Broadband in NH and assisting internal and external groups with efforts to deploy broadband services to the unserved and underserved areas. The DRED position is a conduit to the TAB, which is anchored within the Department, and will serve as a direct resource for the project applicants.

Beyond assisting with data development and analysis effort, the RPCs will be responsible for coordinating with municipalities, the business community, internet service providers, other stakeholders, and the general public to maintain involvement and ensure that the interests of all are represented throughout the project. This will entail outreach to municipal officials, chambers of commerce, economic development practitioners, major institutions (colleges, hospitals, school districts, etc.), community groups, and others who have an expressed interest and need for high speed internet/broadband service. In addition, and with the assistance of many of these stakeholders, strategic outreach to internet service providers will be conducted to describe the project and create a cooperative dialogue among users and providers for the purpose of enhanced information sharing. This coordination is intended to 1) inform stakeholders of the effort, 2) document service needs, 3) facilitate access to information to improve the products of the project, and 4) create a spirit of cooperation among stakeholders who understand the common and mutual benefits of the effort.

<u>Planning Component</u>

The planning component to this proposal will be conducted by the RPCs during years 2-5. Planning activities will include the creation of broadband stakeholder groups within each region of the State, whose activities will include the identification of barriers to broadband services, promoting collaboration with service providers to facilitate

deployment and use, collecting and analyzing information on the use and demand for broadband services, and facilitating information sharing between the public and private sectors regarding use of and demand for broadband services.

These broadband stakeholder groups (local technology planning teams) will be comprised of individuals representing a wide spectrum of the community, including government, business, education, health care, community and economic development, emergency services, communications, and others. The groups will meet periodically and produce outreach materials, reports and publications describing their activities. RPCs will provide staffing, including logistical support and facilitation, to these broadband stakeholder groups in order to achieve real progress in the deployment and use of broadband services for the purposes of economic well-being, safety, education, health, and overall quality of life. In some cases, these planning activities will be conducted in conjunction with maintenance functions of regional Comprehensive Economic Development Strategies.

This planning component is intended to make effective, efficient and prolonged use of the mapping and collaboration components of this proposal.

Appendix A.
Letter of State Designation

JOHN H. LYNCH
Governor

State of New Hampshire
OFFICE OF THE GOVERNOR
107 North Main Street, State House - Rm 208
Concord, New Hampshire 03301
Telephone (603) 271-2121
www.nh.gov/governor
governorlynch@nh.gov

August 11, 2009

The Honorable Larry Strickling
Assistant Secretary of Communications and Information
National Telecommunications and Information Administration
U.S. Department of Commerce
1401 Constitution Ave. NW
Washington, D.C. 20230

Dear Assistant Secretary Strickling:

This letter certifies that the University of New Hampshire (UNH) has been designated as the single entity in the State of New Hampshire eligible to receive federal grant funding under the National Telecommunications and Information Administration (NTIA) State Broadband Data and Development Grant Program.

I support the University's mapping proposal, which will inventory current and planned statewide broadband coverage available to New Hampshire's businesses, educators, and citizens. UNH will collaborate with the State's nine Regional Planning Commissions to collect comprehensive data on service availability by type and technology from all commercial and public broadband providers in the state. The data will then be used to develop state broadband availability maps to identify which areas in the state are well-served by current technologies, as well as which communities are unserved or underserved.

On behalf of the State of New Hampshire, I appreciate the opportunity to apply for the federal broadband funds. Expanding access to broadband for the citizens of New Hampshire is a high priority. We look forward to working with the NTIA to accomplish our goals.

Thank you for your consideration of the University of New Hampshire's State Broadband Data and Development Grant application. Should you need any additional information, please contact Fay Rubin at:

Fay Rubin
GRANIT Project Director
Complex Systems Research Center
Morse Hall
University of New Hampshire
Durham, NH 03824
Phone: 603-862-4240
Email: fay.rubin@unh.edu

Sincerely,

John H. Lynch
Governor

Appendix B.
Listing and Qualifications of Mapping Project Team

GRANIT, Complex Systems Research Center, 8 College Rd, University of New Hampshire, Durham, NH 03824 603-862-1792; www.granit.unh.edu	
Primary Contact	Fay Rubin, Project Director, 1985-present, fay.rubin@unh.edu
	M.A., Economics, University of New Hampshire; Bachelors, Economics, UNH Twenty+ years of managing development and implementation of GRANIT System.
GIS/Mapping Contacts	Michael Blair, GIS/RIS Manager, 1997-present, mblair@swrpc.org
	B.S. Human Ecology, College of the Atlantic; M.S. Internet Technologies, Marlboro College 15+ years of GIS and IT experience providing data development, spatial analysis and modeling, remote sensing, cartographic support, web-design and IT support.
	David Justice, GIS Analyst, 1991-present, david.justice@unh.edu
	MS, Forestry, University of New Hampshire; BS, Forestry, UNH Extensive experience in GIS data development, image processing/remote sensing, and data analysis. Currently managing GRANIT web mapping applications.
Central New Hampshire Regional Planning Commission, 28 Commercial St., Suite 3, Concord, NH 03301 603-226-6020; www.cnhrpc.org	
Primary Contact	Michael Tardiff, Interim Executive Director, 2009-present, mtardiff@cnhrpc.org
	M.A., City and Regional Planning, Clemson University; B.A., Political Science, Keene State College Extensive experience in transportatino planning, land use planning, and GIS data development/analysis.
GIS/Mapping Contact	Craig Tufts, Planner/GIS Analyst, 2006-present, ctufts@cnhrpc.org
	MA Geography, Ohio University, BS Geography, Plymouth State University Five years GIS experience including data development, cartography, and data analysis; Currently providing GIS support to member towns.
Lakes Region Planning Commission, 103 Main St., Suite #3, Meredith, NH 03253 603-279-8171; www.lakesrpg.org	
Primary Contact	Kimon Koulet, Executive Director, lrpc@lakesrpc.org
	Many years implementing GIS for state and regional agencies.
GIS/Mapping Contact	David Jeffers, Regional Planner, djeffers@lakesrpc.org
	A.B., GIS Certificate, nearly completed M.S. degree in GIS. Several years GIS and planning experience.
Nashua Regional Planning Commission, 29 Executive Park Drive, Suite 201, Merrimack, NH 03054 603-424-2240; www.nashuarpc.org	
Primary Contact	Kerrie Diers, Esq., AICP, Assistant Director, kerried@nashuarpc.org
	J.D., Vermont Law School; BA, Beloit College, Beloit WI Extensive experience in land use planning, law and community development.
GIS/Mapping Contact	Steve Schaffer, GIS Manager, steves@nashuarpc.org
	Ten years of GIS experience
North Country Council, 107 Glessner Road, Bethlehem, NH 03574 603-444-6303; www.ncccouncil.org	
Primary Contact	Michael King, Executive Director, mking@nccouncil.org
GIS/Mapping Contact	June Garneau, GIS Planner, jgarneau@nccouncil.org

Rockingham Planning Commission, 156 Water St., Exeter, NH 03833 603-778-0885; www.rpc-nh.org	
Primary Contact	Cliff Sinnott, Executive Director, 1989-present, csinnott@rpc-nh.org
	Masters of Regional Planning prog., Univ. of Mass. (non degreed); BA English, Envt. Studies, St. Lawrence Univ. Experience in land use, transportation and environmental planning. RPC representative on state GIS Advisory Committee from inception to 2002.
GIS/Mapping Contact	Robert Pruyne, Jr., GIS Specialist/IT Manager, 2003-present, rpruyne@rpc-nh.org
	B.S. Environmental Planning, Skidmore College Ten years of GIS experience; 17 years as IT consultant.
Southern NH Regional Planning Commission, 438 Dubuque St., Manchester, NH 03102 6030-669-4664; www.snhpc.org	
Primary Contact	David Preece, Executive Director, 2004-present, dpreece@snhpc.org
	Masters, Public Service, WKU; Masters, Urban and Regional Planning, UW-Madison Extensive experience in process development for urban planning and environmental field data collection, surveys, analysis. Facilitation and community development experience.
GIS/Mapping Contact	Amy Kizak, GIS Analyst, 2007-present, akizak@snhpc.org
	Bachelors, Geography GIS data creation/updates, map production, GIS analyses in support of various studies and plans. Support member towns with GIS needs. GPS data conversion.
Southwest Region Planning Commission, 20 Central Square, 2nd Floor, Keene, NH 03431 603-357-0557; www.swrpc.org	
Primary Contact	Tim Murphy, Executive Director, 1995-present, tmurphy@swrpc.org
	Masters, Geography/City & Regional Planning, Eastern Michigan University 24 years experience in land use, transportation, environmental, and emergency management planning; community development; public administration; etc.
GIS/Mapping Contact	Michael Blair, GIS/RIS Manager, 1997-present, mblair@swrpc.org
	B.S. Human Ecology, College of the Atlantic; M.S. Internet Technologies, Marlboro College 15+ years of GIS and IT experience providing data development, spatial analysis and modeling, remote sensing, cartographic support, web-design and IT support.
Strafford Regional Planning Commission, 2 Ridge St., Suite 4, Dover, NH 03820-2505 603-742-2523; www.strafford.org	
Primary Contact	Cynthia Copeland, AICP, Executive Director, 1999-present, cjc@strafford.org
	Masters in Natural Resources and Public Administration Extensive experience in process development for field data collection, surveys, database, and analysis. Facilitation and community development experience.
GIS/Mapping Contact	Daniel Camara, GIS Analyst, 2006-present, dcamara@strafford.org
	Bachelors, Geography with minor in Environmental Conservation GIS data creation/updates, map production for projects, ordinances and regulation development, GPS data collection, surveys, travel demand modeling.
Upper Valley Lake Sunapee Regional Planning Commission, 30 Bank St., Lebanon, NH 03766-1756 603-448-1680; www.uvlsrpc.org	
Primary Contact	Christine Walker, Executive Director, cwalker@uvlsrpc.org
GIS/Mapping Contact	Rachel Ruppel, GIS Analyst, rruppel@uvlsrpc.org

Appendix C
Sample Non-Disclosure Agreement

NON-DISCLOSURE AGREEMENT
BETWEEN
<Broadband Provider> AND the University of New Hampshire

This Non-Disclosure Agreement ("Agreement") is made and entered into by and between <Broadband Provider> ("Provider" or "Disclosing Party") whose address is <address> and the University of New Hampshire ("UNH" or "Receiving Party") whose address is Durham, NH 03824. Provider and UNH will be referred to collectively as the "Parties".

WHEREAS UNH has been designated by the State of New Hampshire to develop the State's broadband data and map as part of the US Department of Commerce's State Broadband Data and Development Grant Program. As such, UNH is in need of information and documentation, including Confidential Information from various broadband providers, including Provider in the state of New Hampshire;

WHEREAS Provider, as a broadband provider in the state of New Hampshire, has information and data including confidential and/or proprietary information that it may be willing to provide to UNH if there is an appropriate non-disclosure agreement in place;

WHEREAS in order to facilitate the exchange of data and information between the Parties to this Agreement, the Parties agree to execute this Agreement which will govern the disclosure and use of Confidential Information.

NOW, THEREFORE, in consideration of the disclosure and receipt of certain information, including Confidential Information and the mutual promises made herein, the Parties to this Agreement and Stipulation agree as follows:

1. UNH, in addressing its contractual obligation with the Department of Commerce, and particularly the broadband initiative established by the Statewide Broadband Data and Development Grant Program, will request of broadband providers, including Provider, certain data or information, including confidential and/or proprietary information. Provider, in receiving the request for information, including confidential and/or proprietary information, will consider such request and make a good faith effort to respond to such request for information subject to the provisions of this Agreement.

2. Confidential Information includes all confidential or proprietary technical, financial or business information, including without limitation (a) proposals, ideas, or research related possible new products or services; (b) financial information; and (c) trade secrets; and (d) the material terms of the relationship between the Parties.

3. The Parties agree that each will: (a) treat all Confidential Information confidentially and will not disclose such information to any other person, corporation, or entity

except as permitted in writing by the other or as expressly permitted by the terms of this Agreement; (b) protect all Confidential Information with at least the same degree of care it uses to protect its own proprietary and/or Confidential Information; (c) disclose the Confidential Information only to those within its organization or those subcontracted by UNH who have signed appropriate non-disclosures and who have a need to know the information in order to further University of New Hampshire ability to comply with its contract; (d) advise employees, agents or representatives who receive the Confidential Information of the existence and terms of this Agreement and of the obligations of confidentiality contained herein; and (e) use the Confidential Information only for the purpose contemplated by the Parties, to wit: the collection of data for the broadband initiative of the Statewide Broadband Data and Development Grant Program.

4. Notwithstanding the provisions of Paragraph 3, this Agreement shall not apply to any information provided by the Disclosing Party that: (a) is or becomes within the public domain through no act of the Receiving Party; (b) was in possession of the Receiving Party prior to its disclosure under this Agreement, and it can so prove; (c) is independently developed by the Receiving Party, and it can so prove; or (d) is received from another source without any restriction on use or disclosure.

5. If the Receiving Party is requested or required by civil or other judicial process (including oral questions, interrogatories, requests for production of documents, subpoena requests or other civil or criminal investigative demand or process) to disclose any information supplied to it or its representatives in the course of the Parties' relationship, it will provide the other party with prompt notice of such a request so that such party may seek an appropriate protective order and/or waive compliance with the provisions of this Agreement.

6. Confidential Information furnished to Receiving Party, whether written, pictorial, magnetic and/or other tangible form will not be duplicated except as expressly permitted by the Disclosing Party in writing. At the conclusion of the Statewide Broadband Data and Development Grant Program Receiving Party's contract with the State of New Hampshire and the broadband initiative, Disclosing Party may request that the Receiving Party promptly deliver the proprietary and/or Confidential Information to the other without retaining any copy of the material. Notwithstanding such a request, the Receiving Party and its representatives will maintain the confidentiality of the Confidential Information as provided herein. Upon request of the Disclosing Party, Receiving Party shall certify in writing that Confidential Information provided or disclosed has been returned to the Disclosing Party.

7. The Parties agree that any unauthorized use of any of the Confidential Information in violation of this Agreement by the Receiving Party may result in irreparable injury for which there may be no adequate remedy at law. Accordingly, the Disclosing Party shall be entitled to immediate relief prohibiting any violation of this Agreement in addition to any other rights or remedies available to the Parties. In the event that the

Disclosing Party avails itself of such a remedy, it is entitled to its costs and expenses, including attorneys' fees in obtaining such relief or pursuing such remedy.

8. Nothing contained in the provisions of the Agreement shall require Provider to provide information to UNH; while Provider will review requests for information, disclosure is discretionary.

9. Neither Party shall assign or otherwise transfer any of the rights or delegate any of the duties set forth in this Agreement without the prior written permission of the other Party.

10. The Parties recognize that certain Confidential Information may be subject to patent, trademark, copyright, license or other restrictions and warrant that no work performed by it or its assignees will violate such restrictions applicable to such Confidential Information.

11. The Receiving Party shall indemnify, defend and hold harmless the Disclosing Party, its agents, employees and assigns from any and all claims, lawsuits, losses and liability out of the Receiving Party's failure to perform any of the duties and obligations herein or in connection with the negligent performance by Receiving Party of its duties and obligations as contained herein.

12. All notices arising out of or from the provisions of this Agreement shall be in writing and given to the other Party at the address provided in this Agreement.

13. The construction, interpretation and enforcement of this Agreement shall be governed by the laws of the state of New Hampshire. The courts in the state of New Hampshire shall have jurisdiction over this contract and the Parties. This Agreement represents the entire and integrated agreement between the Parties and supercedes all prior negotiations, representations and agreements, whether written or oral.

IN WITNESS HEREOF, the Parties to this Agreement, either personally or through their duly authorized representatives, have executed this Agreement on the date set forth below and certify that they have read, understand and agree to the terms and conditions of this Agreement and further, that the signatory has authority to execute the same.

Provider, Inc.	University of New Hampshire
By: _____	By: _____
Its: _____	Its: _____
Date: _____	Date: _____

Appendix D
Documentation of Match

Southwest Region Planning Commission
20 Central Square, Second Floor Keene, NH 03431 603-357-0557 FAX 357-7440

August 13, 2009

Mr. Edward Smith, Program Director
State Broadband Data and Development Grant Program
National Telecommunications and Information Administration
U.S. Department of Commerce
1401 Constitution Ave. NW, Room 4898
Washington D.C. 20230

Dear Mr. Smith:

This letter will document two sources of in-kind match that the nine Regional Planning Commissions (RPCs) are collectively providing to the State of New Hampshire's *State Broadband Data and Development Grant Program* application.

The first source of match is ESRI GIS software licensing, which will be used extensively by each of the participating RPCs to manage and analyze the broadband coverage data that is collected. The total maintenance cost for all RPCs is $42,100 per year, of which $36,500 per year is paid for using non-federal funds and is therefore being provided as match to this project.

Secondly, we are able to provide up to $2,818,385 as match to the project, representing the market value of parcel data for 148 municipalities that the RPCs have developed and maintained, as well as the value of vendor-provided data developed for another 86 municipalities. These data have been assembled and will be available to support the mapping activities under this project. Specifically, this data asset will be used for the development and verification of the Community Anchor Institutions in all municipalities. In addition the data will be used to 1) support the verification of the underserved and unserved areas, 2) illustrate the area and extent of broadband service provider coverages, and 3) verify specific land-uses within areas served, underserved and unserved. We have calculated the market value of the parcel data based on the following. Using an industry average for tax parcel data development of $15 per parcel, we calculated the number of municipalities that the RPCs have developed and maintained over the years and multiplied by the number of parcels in each municipality. For the municipalities that the vendors have provided data, we calculated the number of municipalities by the delivery cost of $250 per town.

Finally, the RPCs collectively can provide a cash contribution to the effort in an amount up to 5% of grant funds made available to us if needed to achieve the 20% match requirement.

If you require any additional information, please do not hesitate to contact me.

Sincerely,

Tim Murphy
Executive Director

TPM/rb

cc: Fay Rubin, GRANIT Project Director, CSRC, UNH

z:\all\tm1\letters\broadbandmatchesmith081309

TDD Access: Relay NH 1-800-735-2964
web site: www.swrpc.org

JOHN H. LYNCH
GOVERNOR

STATE OF NEW HAMPSHIRE
OFFICE OF ENERGY AND PLANNING
4 Chenell Drive
Concord, NH 03301-8501
Telephone: (603) 271-2155
Fax: (603) 271-2615

OEP
www.nh.gov/oep

August 11, 2009

Fay Rubin, Project Director
Complex Systems Research Center
University of New Hampshire
Durham, NH 03824

Dear Ms. Rubin,

This letter serves to document that the NH Office of Energy and Planning (OEP) has spent $8,567.09 in state-funded salary dollars over the period FY06-FY09 to support the development and maintenance of telecommunications data (personal wireless service facilities data) in New Hampshire. OEP is committing this amount as in-kind match for the State Broadband Data Program application you are submitting to NTIA.

Sincerely,

Kenneth R. Gallager
Principal Planner

The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Thomas S. Burack, Commissioner

August 13, 2009

Fay Rubin, Project Director
Complex Systems Research Center
University of New Hampshire
Durham, NH 03824

Re: Cost to Create Key Destinations Data Set

From 2002-2005, New Hampshire Department of Environmental Services (DES) worked with the nine Regional Planning Commissions (RPCs) under the state-funded Regional Environmental Planning Program to create two new data sets to measure patterns of growth. One of these data sets is the Key Destinations Data Set, now housed at GRANIT. The data set includes information on community facilities that are considered destination points, including schools, libraries, police stations, etc.

During this time period, each Regional Planning Commission was allocated a minimum of $5,000 to support this work, half of which went to create the Key Destinations data. In addition, significant state-funded DES staff time was directed towards this effort, on the order of 200 hours toward the development of this data set.

Grant monies to RPCs:	$22,500
DES staff time:	$12,000
Total Cost:	$34,500

If you require any additional information please contact me at (603) 271-3010 or carolyn.russell@des.nh.gov.

Sincerely,

Carolyn Russell
Senior Environment and Land Use Planner
Office of the Commissioner

STATE OF NEW HAMPSHIRE
DEPARTMENT of RESOURCES and ECONOMIC DEVELOPMENT
DIVISION OF ECONOMIC DEVELOPMENT
172 Pembroke Road P.O. Box 1856 Concord, New Hampshire 03302-1856

603-271-2341
FAX: 603-271-6784
www.nheconomy.com

August 11, 2009

Fay Rubin, Project Director
Complex Systems Research Center
University of New Hampshire
Durham, NH 03824

Dear Ms. Rubin,

This letter serves to document that the NH Department of Resources and Economic Development and the Telecommunications Advisory Board retained the services of Berry, Dunn, McNeil & Parker (BMDP) to assist in developing the "State of New Hampshire Broadband Action Plan" (published in 2008). The report defines how the State can best maintain and expand its leadership in broadband deployment, and presents a series of recommendations towards that end.

The state compensated BMDP in the amount of $62,500 for this work. Because the consulting services were funded with state dollars, we offer them as in-kind match for the State Broadband Data Program application you are submitting to NTIA.

Sincerely,

Chris Way
Business Services Manager
Division of Economic Development

TOWN of HANOVER
HANOVER, NEW HAMPSHIRE 03755
P.O. BOX 483 603/643-4123

August 12, 2009

Fay Rubin, Project Director
Complex Systems Research Center
University of New Hampshire
Durham, NH 03824

Dear Ms. Rubin,

This letter serves to document that the Towns of Springfield, Orford, Lyme, Newbury, New London, Sunapee, Enfield and Hanover spent $105,537 in local funds over the period FY06-FY09 for planning and development to support the development and maintenance of telecommunications in the western part of New Hampshire with the intended purpose to deploy broadband throughout the eight communities. Together these eight communities form WCNH, a multi-community effort to facilitate extension of high speed internet service to these eight communities.

We are committing this amount as in-kind match for the State Broadband Data Program application you are submitting to NTIA. WCNH looks forward to the definitive mapping of broadband availability in New Hampshire – data which is sorely needed to enable decision-makers to make deployment of high speed internet service a state priority.

Sincerely,

Julia N. Griffin
Town Manager

cc: Christine Walker, UVLSRPC
Jessie Levine, Chair, WCNH

Appendix E
Letters of Support

STATE OF NEW HAMPSHIRE
DEPARTMENT of RESOURCES and ECONOMIC DEVELOPMENT
OFFICE of the COMMISSIONER
172 Pembroke Road P.O. Box 1856 Concord, New Hampshire 03302-1856

GEORGE M. BALD
Commissioner

603-271-2411
FAX: 603-271-2629
george.bald@dred.state.nh.us

August 13, 2008

The Honorable Larry Strickling
Assistant Secretary of Communications and Information
National Telecommunications and Information Administration
U.S. Department of Commerce
1401 Constitution Ave. NW
Washington, D.C. 20230

Re: the State Broadband Data and Development Program

On behalf of the NH Department of Resources and Economic Development, I am writing in support of the application submitted by the University of New Hampshire, GRANIT Program for funding under the State Broadband Data and Development Program. This comprehensive proposal addresses the opportunity in New Hampshire to collect the critical data on broadband penetration that is necessary for all of our other efforts; many of which are described in the State's support of projects under the other sources of the Broadband stimulus program.

Our strong support is based on the fact that the "*States Broadband Action Report-2008*" clearly recommends partnerships with State GIS organizations; in this case the well established GRANIT Program. Secondly, the report also recommends strong partnerships with the regional Planning Commissions to assist in the collection of data. This proposal represents a sustainable collaborative partnership that accomplishes both of these objectives, and they will have the support of the newly created position of the State Telecom Director as they move forward.

We urge you to consider this application for funding and I look forward to working with our partners to assist in its implementation.

Sincerely,

George M. Bald
Commissioner

GMB:lc

STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION
21 S. Fruit St., Suite 10
Concord, N.H. 03301-2429

August 14, 2009

Mr. Edward Smith, Program Director
State Broadband Data and Development Grant Program
National Telecommunications and Information Administration
US Department of Commerce
1401 Constitution Avenue NW, Room 4898
Washington, DC 20230

Dear Mr. Smith:

As the Director of Telecommunications with the New Hampshire Public Utilities Commission, I am pleased to send this letter in support of the proposed mapping project by the University of New Hampshire's Complex Systems Research Center (CRC). My staff and I regularly work with the data we have regarding telecommunications facilities and services. As in most states this data is currently fragmented and incomplete, with more detail readily available from some types of suppliers (for example, traditional telephone companies) and less detail from other providers (for example, wireless providers).

For policy development and regulatory analysis the state has a substantial need for a more comprehensive, well-organized database of these facilities and services. There is no single agency that can develop this data internally: the effort will require cross-functional cooperation. I am familiar with the work and product of the University of New Hampshire GRANIT system and look forward to working with their team on both completing and using the results of this project.

Sincerely,

Kathryn M. Bailey

Kathryn M. Bailey
Director, Telecommunications

JOHN H. LYNCH
GOVERNOR

STATE OF NEW HAMPSHIRE
OFFICE OF ENERGY AND PLANNING
4 Chenell Drive
Concord, NH 03301-8501
Telephone: (603) 271-2155
Fax: (603) 271-2615

OEP
www.nh.gov/oep

July 27, 2009

Mr. Edward Smith, Program Director
State Broadband Data and Development Grant Program
National Telecommunications and Information Administration
US Department of Commerce
1401 Constitution Avenue NW, Room 4898
Washington, DC 20230

Dear Mr. Smith:

The New Hampshire Office of Energy and Planning is pleased to support the proposed project by the University of New Hampshire's Complex Systems Research Center (CSRC) and the state's regional planning agencies to map the extent of broadband service in New Hampshire. In a state with such a large proportion of rural land, it is critical to first accurately map those areas which are unserved or underserved in broadband technology so that further development of the broadband framework can take place.

I believe CSRC's proposed project to work with the state's regional planning agencies to gather statewide addresses and determine the provision of broadband services is an important first step and will be executed successfully should the project be funded. The staff at Complex Systems has been working for over 20 years with our office and numerous other state and federal agencies throughout New Hampshire to develop GRANIT, the state's geographic information system and node in the National Spatial Database Infrastructure. I am confident that their history of working successfully with GIS partners at all levels of the state, including data experts at the University of New Hampshire, leaves them uniquely qualified to assemble the variety of data necessary to identify the extent of broadband service in New Hampshire.

The primary regional planning commission partner has a GIS analyst on staff that is a recognized expert in assessing and mapping the deployment of technological infrastructure. In closing, I am happy to express my support for this proposed project.

Sincerely,

Amy Ignatius
Director

AI:jc

Southwest Region Planning Commission
20 Central Square, Second Floor Keene, NH 03431 603-357-0557 FAX 357-7440

August 12, 2009

The Honorable Lawrence E. Strickling
Assistant Secretary for Communications and Information
National Telecommunications and Information Administration
U.S. Department of Commerce
1401 Constitution Ave. NW
Washington D.C. 20230

Dear Assistant Secretary Strickling:

On behalf of New Hampshire's nine regional planning commissions (RPCs), please accept this letter of support and commitment to the proposal for broadband infrastructure mapping and planning as submitted by the University of New Hampshire (UNH). The RPCs have been working with the State of New Hampshire and UNH in developing the proposal and we are ready to embark as a full partner in this collaborative effort. We have a history of working with Complex Systems Research Center of UNH on data development projects.

The RPCs offer well established geographic information systems with highly qualified personnel to operate these systems for this project. In addition, RPCs have existing relationships with municipalities, the business community, institutions, and several broadband service providers operating within our respective regions. Therefore, this proposal represents an efficient approach in achieving the results as described in the NTIA guidelines and the NOFA for this initiative.

Our enthusiasm to participate in this project is fueled in part by the importance that access to high speed broadband infrastructure has in our state and individual communities. Broadband access stimulates job creation and growth; expands educational opportunities for young people; enables town offices, police departments, fire departments, libraries and schools to better serve the community and communicate effectively; and increases market access for businesses. Simply put, broadband is essential infrastructure to our quality of life.

Thank you for your consideration of this proposal. We look forward to our participation. If you have any questions or require additional information, please feel free to contact me.

Sincerely,

Tim Murphy
Executive Director

TPM/rb

cc: Edward Smith, Program Director, NTIA
Fay Rubin, GRANIT Project Director, CSRC, UNH
NH RPC Executive Directors

TDD Access: Relay NH 1-800-735-2964
web site: www.swrpc.org

City of Keene
3 Washington Street New Hampshire 03431

Philip "Dale" Pregent
Mayor

August 13, 2009

Mr. Edward Smith, Program Director
State Broadband Data and Development Grant Program
National Telecommunications and Information Administration
US Department of Commerce
1401 Constitution Avenue NW, Room 4898
Washington, DC 20230

Dear Mr. Smith:

On behalf of the City of Keene, I am pleased to send this letter in support of the proposed project by the University of New Hampshire's Complex Systems Research Center (CSRC) and the state's regional planning agencies to map the extent of broadband service in New Hampshire. In a state with such a large proportion of rural land, it is critical to first accurately map those areas which are unserved or underserved in broadband technology so that further development of the broadband framework can take place. I believe CSRC's proposed project to work with the state's regional planning agencies to gather statewide addresses and determine the provision of broadband services is an important first step and will be executed successfully should the project be funded.

The staff at Complex Systems has been working for over 20 years with the Southwest Region Planning Commission and numerous other state and federal agencies throughout New Hampshire to develop GRANIT, the state's geographic information system and node in the National Spatial Database Infrastructure. I am confident that their history of working successfully with GIS partners at all levels of the state, including data experts at the University of New Hampshire, leaves them uniquely qualified to assemble the variety of data necessary to identify the extent of broadband service in New Hampshire.

In closing, I am happy to express my support for this proposed project.

Sincerely,

Philip Dale Pregent, Mayor

Telephone (603) 357-9804 Fax (603) 357-9847
Email: dpregent@ci.keene.nh.us

OMB Approval No. 4040-0006
Expiration Date 07/30/2010

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Recovery Act - Broadband Data and Development	11.558	$	$	$ 2,680,617.00	$ 585,388.00	$ 3,266,005.00
2.						
3.						
4.						
5. Totals		$	$	$ 2,680,617.00	$ 585,388.00	$ 3,266,005.00

Standard Form 424A (Rev. 7- 97)
Prescribed by OMB (Circular A -102) Page 1

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1) Recovery Act - Broadband Data and Development	(2) N/A	(3) N/A	(4) N/A	Total (5)
a. Personnel	$ 107,658.00	$ 47,441.00	$ 48,914.00	$ 50,654.00	$ 254,667.00
b. Fringe Benefits	19,067.00	11,344.00	11,617.00	11,989.00	54,017.00
c. Travel	6,000.00	3,500.00	3,500.00	3,500.00	16,500.00
d. Equipment	210,000.00				210,000.00
e. Supplies	54,200.00	14,304.00	14,304.00	14,304.00	97,112.00
f. Contractual	620,865.00	284,461.00	292,996.00	301,785.00	1,500,107.00
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	1,017,790.00	361,050.00	371,331.00	382,232.00	$ 2,132,403.00
j. Indirect Charges	61,882.00	22,364.00	22,874.00	23,491.00	$ 130,611.00
k. TOTALS (sum of 6i and 6j)	$ 1,079,672.00	$ 383,414.00	$ 394,205.00	$ 405,723.00	$ 2,263,014.00
7. Program Income	$	$	$	$	$

Authorized for Local Reproduction

Standard Form 424A (Rev. 7- 97)
Prescribed by OMB (Circular A -102) Page 1A

SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8. Recovery Act - Broadband Data and Development Required Match	$ 585,388.00	$	$	$ 585,388.00
9.				
10.				
11.				
12. TOTAL (sum of lines 8-11)	$ 585,388.00	$	$	$ 585,388.00

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 1,079,672.00	$ 269,918.00	$ 269,918.00	$ 269,918.00	$ 269,918.00
14. Non-Federal	$ 236,984.00	59,246.00	59,246.00	59,246.00	59,246.00
15. TOTAL (sum of lines 13 and 14)	$ 1,316,656.00	$ 329,164.00	$ 329,164.00	$ 329,164.00	$ 329,164.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (YEARS) (b)First	(c) Second	(d) Third	(e) Fourth
16.	$	$	$	$
17.				
18.				
19.				
20. TOTAL (sum of lines 16 - 19)	$	$	$	$

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges: $2,525,877

22. Indirect Charges: $154,740

23. Remarks: Year 5 budget attached on separate page within budget narrative section.

Budget Narrative

The total budget requested for the proposed state project is $2,680,617, comprising $2,190,943 in broadband mapping costs and $489,674 in project planning costs.

Mapping Component

Within the mapping component, $869,671 will support activities of the GRANIT staff at UNH. Two months of support in year 1 and 1.5 months of support in the subsequent years is requested for F. Rubin, who will serve as project manager. In that capacity, she will be responsible for general project oversight as well as for all project reporting. Other project staff at UNH will include M. Blair, who is budgeted for 9 months in year 1 and 3 months in subsequent years, and who will assist in coordinating the project, developing the project standards, managing communications with the service providers, developing the web-based tools, and working directly with the RPCs to ensure timely, consistent, and accurate data development. D. Justice of UNH, who is budgeted for 3 months in year 1 and 2 months in subsequent years, will focus primarily on data development and updating, data analysis, and map product development. He will also assist in standards development and in web tool construction.

UNH also requests support to: purchase a server ($10,000) to host the project web mapping tools, commission a survey from the UNH Survey Center ($10,000) as part of the verification plan; support system maintenance activities provided by the UNH Research Computing Center ($6,000/year); acquire 2 "seats" for Cellular-Export signal propagation software ($33,200 in year 1 and $7,304/year for maintenance in years 2-5); cover travel costs associated with provider meetings and RPC meetings ($6,000 in year 1, $3,500 in subsequent years), and cover miscellaneous supply costs ($5,000 in year 1 to cover the cost of a laptop/docking station to facilitate off-site data collection activities and working with distributed RPC staff ($4,000) and supplies ($1,000), and $1,000 in subsequent years).

In addition, $200,000 is requested to acquire LIDAR data to support the wireless propagation models. This airborne LIDAR data collection cost will cover selected urban areas in New Hampshire, where urban refers to cities or towns with numerous tall buildings that can create interference in radio frequency propagation. The proposed collection will be used to leverage extended coverage in New Hampshire acquired through a larger, regional LIDAR project – LIDAR for New England.

The proposed budget includes a subcontract in the amount of $1,810,946 to the Southwest Region Planning Commission (SWRPC). This total comprises $1,321,272 to support broadband mapping activities, and $489,674 to support planning activities. (Note: The NOFA requested that two separate budgets be submitted. However, because the entirety of the planning work will be subcontracted by UNH to the RPCs, only the cumulative dollars appear in the budget.)

Within the RPC mapping activity allocation ($620,865, or 47%) is subcontracted in year 1 to cover costs associated with the initial data development, with the balance allocated

evenly over the remaining 4 years of the project to cover mapping maintenance activities. The SWRPC will, in turn, execute subcontracts with the other 8 RPCs in the state. Year 1 dollars are requested to support 6 months of effort in data development (including data collection for all Community Anchor Institutions, collection of service provider data, etc.) and data maintenance. Year 2-5 dollars are requested to support 1.5 months of mapping effort per year (e.g. 3 weeks per update cycle). All years of the RPC mapping budget include a modest allocation (4 hours/week per RPC) for project collaboration activities and web site enhancement.

Planning Component

In addition to the data development and mapping effort of the RPCs, a planning component is proposed for years 2-5. Planning activities will include the creation of broadband stakeholder groups within each region of the State, whose activities will include the identification of barriers to broadband services, promoting collaboration with service providers to facilitate deployment and use, collecting and analyzing information on the use and demand for broadband services, and facilitating information sharing between the public and private sectors regarding use of and demand for broadband services. Years 2-5 dollars are requested to support 1.5 months of planning effort each year per RPC. This planning component is intended to make effective, efficient and prolonged use of the mapping and collaboration components of this overall proposal.

Request for Coverage of Pre-Award Costs

Included in the RPC subcontract is a request $22,500 in year 1 for work conducted on developing service provider partnerships, initial data development methodology and data standards, and documentation of the project and partner coordination methodology. Additionally, review and understanding of NOFA requirements, concept development, outreach/coordination with RPCs, preliminary coordination with vendors, and grant application preparation has been conducted.

This work has been conducted from the project announcement through the present and will continue through the award date. All efforts are being made to ensure that upon the project approval and award, we are prepared to "hit the ground running" complete the project within the outlined schedule.

Documentation of Match

A total of $585,388 in match has been committed to the project, representing 22% of the project budget, and comprising both cash and in-kind components. The cash component includes a total of $90,547 from the 9 participating RPCs, and $26,497 from the University of New Hampshire in the form of a reduction in the Facilities and Administrative rate from the negotiated rate of 34.2% to 29.2%.

In-kind match is provided in the amount of $468,345, and includes the following components as documented in Appendix D.

- From NH Office of Energy and Planning - $8,567
- From NH Department of Environmental Services - $34,509

- From NH Department of Resources and Economic Development - $31,250[1]
- From Town of Hanover (representing a consortium) - $52,769[1]
- From RPC software licensing - $18,250/year[1]
- Value of parcel data - $50,000/year[2]

[1]Appendix D documents the full value of broadband planning and consultant services provided to the state and to regional consortia, and the full value of the portion of annual GIS software maintenance costs paid by non-federal funds. We propose to use 50% of each full value as project match.
[2]Appendix D documents the full value of available digital parcel data. We have utilized 9% of that value as project match.

The project will benefit from address range data collected by the NH Department of Safety/Bureau of Emergency Communications (BEC). Because the BEC is planning to utilize the E-911 data development costs in a future project, we are unable to document them as part of the in-kind contribution for the proposed effort. Nevertheless, it is important to note the significant asset represented by this data stream.

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1) Year 1 through 4 total	(2) Year 5	(3)	(4)	Total (5)
a. Personnel	$ 254,667.00	$ 52,458.00	$	$	$ 307,125.00
b. Fringe Benefits	54,017.00	12,373.00			66,390.00
c. Travel	16,500.00	3,500.00			20,000.00
d. Equipment	210,000.00				210,000.00
e. Supplies	97,112.00	14,304.00			111,416.00
f. Contractual	1,500,107.00	310,839.00			1,810,946.00
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	2,132,403.00	393,474.00			$ 2,525,877.00
j. Indirect Charges	130,611.00	24,129.00			$ 154,740.00
k. TOTALS (sum of 6i and 6j)	$ 2,263,014.00	$ 417,603.00	$	$	$ 2,680,617.00
7. Program Income	$	$	$	$	$

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1) Year 1 through 4 total	(2) Year 5	(3)	(4)	Total (5)
a. Personnel	$ 254,667.00	$ 52,458.00	$	$	$ 307,125.00
b. Fringe Benefits	54,017.00	12,373.00			66,390.00
c. Travel	16,500.00	3,500.00			20,000.00
d. Equipment	210,000.00				210,000.00
e. Supplies	97,112.00	14,304.00			111,416.00
f. Contractual	1,500,107.00	310,839.00			1,810,946.00
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	2,132,403.00	393,474.00			$ 2,525,877.00
j. Indirect Charges	130,611.00	24,129.00			$ 154,740.00
k. TOTALS (sum of 6i and 6j)	$ 2,263,014.00	$ 417,603.00	$	$	$ 2,680,617.00
7. Program Income	$	$	$	$	$

FORM **CD-511**
(REV 1-05)

U.S. DEPARTMENT OF COMMERCE

CERTIFICATION REGARDING LOBBYING

Applicants should also review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, 'New Restrictions on Lobbying.' The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Commerce determines to award the covered transaction, grant, or cooperative agreement.

LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over $100,000 or a loan or loan guarantee over $150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, 'Disclosure Form to Report Lobbying.' in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, 'Disclosure Form to Report Lobbying,' in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

* NAME OF APPLICANT
University of New Hampshire

* AWARD NUMBER

* PROJECT NAME
State Broadband Data and Development Grant Program

Prefix: | * First Name: Karen | Middle Name:

* Last Name: Jensen | Suffix:

* Title: Sr. Grant and Contract Administrator

* SIGNATURE: Karen Jensen

* DATE: 08/14/2009

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

Approved by OMB
0348-0046

1. * Type of Federal Action:
- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

2. * Status of Federal Action:
- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

3. * Report Type:
- [x] a. initial filing
- [ ] b. material change

4. Name and Address of Reporting Entity:

[x] Prime [ ] SubAwardee

** Name* N/A

** Street 1* N/A *Street 2*

** City* N/A *State* *Zip*

Congressional District, if known:

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency:

N/A

7. * Federal Program Name/Description:

CFDA Number, *if applicable:*

8. Federal Action Number, *if known:*

9. Award Amount, *if known:*

$

10. a. Name and Address of Lobbying Registrant:

Prefix ** First Name* N/A *Middle Name*

** Last Name* N/A *Suffix*

** Street 1* *Street 2*

** City* *State* *Zip*

b. Individual Performing Services (including address if different from No. 10a)

Prefix ** First Name* N/A *Middle Name*

** Last Name* N/A *Suffix*

** Street 1* *Street 2*

** City* *State* *Zip*

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

*** Signature:** Karen Jensen

***Name:** *Prefix* ** First Name* N/A *Middle Name*

** Last Name* N/A *Suffix*

Title: **Telephone No.:** **Date:** 08/14/2009

Federal Use Only:

Authorized for Local Reproduction
Standard Form - LLL (Rev. 7-97)

OMB Approval No.: 4040-0007
Expiration Date: 07/30/2010

ASSURANCES - NON-CONSTRUCTION PROGRAMS

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C.§§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U. S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

* SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	* TITLE
Karen Jensen	Sr. Grant and Contract Administrator
* APPLICANT ORGANIZATION	* DATE SUBMITTED
University of New Hampshire	08/14/2009

Standard Form 424B (Rev. 7-97) Back

I. MAPPING - FEDERAL			
Personnel			
Project Management (3 months/2.5 months; Base salary @ $86,340)	$21,585	$18,167	$39,752
GIS Analyst (4 months/2.5 months; Base salary @ $61,070)	$20,357	$12,850	$33,207
Hourly (75% time, 25% time; Rate $50/hour)	$78,000	$26,260	$104,260
Personnel Subtotal	$119,942	$57,278	$177,219
Fringe (42.2%, 42.9%, 8.4%, 8.6%)	$24,251	$15,565	$39,816
System Support (80 hours/year @ $75/hour)	$6,000	$6,000	$12,000
Travel[1]	$6,000	$3,500	$9,500
Miscellaneous Supplies (laptop in year 1)	$5,311	$1,444	$6,755
Software (Signal Propagation)[2]	$33,200	$7,304	$40,504
Data Verification Survey (UNH Survey Center)	$10,000	$0	$10,000
ESRI Consulting Services[3]	$14,500	$5,000	$19,500
Hardware (Server)[4]	$10,000	$0	$10,000
RPC Subcontract[5]	$643,965	$167,416	$811,381
Subtotal	$873,169	$263,506	$1,136,675
F&A (29.2%)[6]	$71,308	$28,058	$99,366
Total	**$944,477**	**$291,564**	**$1,236,041**

II. MAPPING - NON-FEDERAL			
University of New Hampshire - F&A partial waiver	$12,210	$4,804	$17,015
Regional Planning Commissions - 5% of annual project budget	$32,198	$8,371	$40,569
Regional Planning Commissions - software licensing[7]	$18,250	$4,250	$22,500
NH Office of Energy and Planning - cell tower data	$8,567	$0	$8,567
Parcel data housed at Regional Planning Commissions	$100,000	$56,000	$156,000
NH Department of Environmental Services - community destinations data	$34,509	$0	$34,509
NH Department of Resources and Economic Development - Telecommunications Advisory Board report	$31,250	$0	$31,250
Total	**$236,984**	**$73,425**	**$310,409**
TOTAL MAPPING (FEDERAL + NON-FEDERAL)	**$1,181,461**	**$364,990**	**$1,546,450**

III. PLANNING - FEDERAL						
Project Management (.5 months/year; Base salary @ $86,340)	$0	$0	$3,706	$3,817	$3,932	$11,455
Fringe (42.9%)	$0	$0	$1,590	$1,638	$1,687	$4,914
Supplies	$0	$0	$162	$162	$162	$487
RPC Subcontract[8]	$0	$114,230	$117,657	$121,187	$124,822	$477,895
F&A (29.2%)[6]	$0	$0	$1,594	$1,640	$1,688	$4,922
Total	**$0**	**$114,230**	**$124,709**	**$128,444**	**$132,291**	**$499,674**

IV. PLANNING - NON-FEDERAL						
University of New Hampshire - F&A partial waiver	$0	$0	$273	$281	$289	$843
Regional Planning Commissions - 5% of annual project budget	$0	$5,711	$5,883	$6,059	$6,241	$23,895
Regional Planning Commissions - software licensing[7]	$0	$14,000	$14,000	$14,000	$14,000	$56,000
Town of Hanover, NH - regional planning initiatives	$0	$13,193	$13,192	$13,192	$13,192	$52,769
Total	**$0**	**$32,904**	**$33,348**	**$33,532**	**$33,722**	**$133,506**
TOTAL PLANNING (FEDERAL + NON-FEDERAL)	**$0**	**$147,134**	**$158,057**	**$161,976**	**$166,013**	**$633,180**

Explanatory Notes:

[1]Travel to support:
- M. Blair from Keene to Durham, weekly for first 6 months. Each trip: 200 miles @ $.55/mile for a total of $2860.
- M. Blair from Keene to Durham, biweekly for 2nd 6 months and every 6 month period therafter: $1430 per 6-month period.
- Remaining travel allocation for in-state travel for data collection, meetings with state agencies.

[2]Software - Cellular-Expert signal propagation software to be purchased in Year 1 (and maintained in year 2). Cost based on quote provided by vendor.

[3]Consulting services from ESRI - to support implementation of geospatial project management software (PLTS).

[4]Hardware - server to be purchased in year 1. Based on quote provided by vendor for Dell PowerEdge R710 dual processor with 12 GB memory.

[5]RPC subcontract for mapping activities. Total includes personnel costs (average rate: $50/hour) and 5% administrative fee for subcontract administration. See RPC_Subcontract worksheet.

[6]UNH will award a single subcontract for both mapping and planning activities. The first $25,000 of the subcontract will be subject to Facilities & Administrative charges at 29.2%. This figure appears in the Mapping section of the budget.

[7]GIS software is required to support both mapping and planning activities. In Year 1, it will be used exclusively for mapping. In subsequent years, the software will primarily support planning activities, with a lesser allocation to support the mapping update activities.

[8]RPC subcontract for planning activities. Total includes personnel costs (average rate: $50/hour) and 5% administrative fee for subcontract administration. See RPC_Subcontract worksheet.

MAPPING[1]	Year 1	Year 2
Personnel	$568,800	$159,444
Pre-award costs	$44,500	$0
Administrative Fee (5%)	$30,665	$7,972
Subtotal	$643,965	$167,416

PLANNING[2]	Year 1	Year 2	Year 3	Year 4	Year 5	Subtotal
Personnel	$0	$108,790	$112,054	$115,416	$118,878	$455,138
Administrative Fee	$0	$5,440	$5,603	$5,771	$5,944	$22,757
Subtotal	$0	$114,230	$117,657	$121,187	$124,822	$477,895

TOTAL RPC	**$643,965**	**$281,646**	**$117,657**	**$121,187**	**$124,822**	**$1,289,277**

Explanatory Notes:
[1]Mapping effort per RPC:
GIS Specialist - Year 1: 6 months full time for first delivery, 3 weeks full time for update; Year 2: 3 weeks full time for each update cycle
Other Professional Staff - Years 1-2: 2 hours/week

[2]Planning effort per RPC:
Planners - Years 2-5: ~4.5 hours/week