OFFICIAL SUBMISSION TO

THE NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION UNDER THE STATE BROADBAND DATA AND DEVELOPMENT GRANT PROGRAM FOR THE COMMONWEALTH OF PUERTO RICO

STATE BROADBAND DATA AND DEVELOPMENT GRANT PROGRAM

Amended and Supplemental Application

PROJECT NARRATIVE

PROJECT ABSTRACT

Current Funding: $1,424,721 (mapping = $926,147; planning = $498,574)

Approved Activities: The Puerto Rico Office of the Chief Information Officer (OCIO), within the Office of the Governor at La Fortaleza, has applied for and received federal State Broadband Data and Development (SBDD) funds to support broadband mapping and planning activities statewide. Approved mapping activities include collection, development, and verification of broadband datasets as required by the National Telecommunications and Information Administration (NTIA) as well as implementation of a web-based, interactive tool to inform and solicit feedback from state and local government officials, consumers, broadband providers, community development organizations, researchers, and other stakeholders regarding reported broadband availability, including location and type of service. Approved planning activities include state level survey research and analysis of supply and demand side data to inform the development of broadband strategic recommendations.

Puerto Rico proposes federal funding for three SBDD projects:

$1,208,957: Data Collection Total
Description: Broadband data collection will continue with our current mapping subcontractor to effectuate complete and up-to-date datasets and broadband maps during the remainder of the five year program period. Leading practices for broadband data collection and verification will be identified and implemented.

$626,640: State Broadband Capacity Building Total
Description: A centralized program office and broadband task force will be established to ensure broadband related strategies and activities are developed as part of a cohesive and comprehensive island-wide initiative. The program office and task force will develop and lead a coordinated initiative for broadband capacity building, continued broadband inventory mapping, technical assistance, and ultimately, increased broadband adoption and digital literacy.

$605,743: Broadband Technical Assistance Program Total
Description: Technical assistance tools and resources for broadband expansion will be developed and made available to communities across Puerto Rico. Tools and resources include technical engineering assistance, aggregated and shared best practices across regions through the Connect Puerto Rico web portal, and local level research on technology usage, needs, and barriers to adoption.

PROJECT NARRATIVE

Current Award: $ 1,424,721
New Award: $ 2,441,341
Total Award: $3,866,062

Currently Funded Activities:

The Government of Puerto Rico (GPR) has identified as one of its main goals the digitalization of Puerto Rico and the democratization of Internet access. This goal was elevated in December 2009 when the Puerto Rico Office of the Chief Information Officer was named the State Designated Entity (SDE) for the Commonwealth of Puerto Rico and awarded approximately $926,000 for broadband data collection and mapping activities over a two-year period and almost $500,000 for broadband planning activities over a five-year period.

DATA COLLECTION, INTEGRATION, VERIFICATION AND DISPLAY
(DATA COLLECTION AND RELATED ACTIVITIES)

Current Award: $926,147
New Award: $1,208,957
Total Award: $2,135,104

MAPPING

The Puerto Rico Office of the Chief Information Officer (OCIO) established a partnership with Connected Nation to be the mapping and planning subcontractor for the efforts defined in the original Notice of Funding Availability (NOFA). This partnership has been identified as Connect Puerto Rico. Connected Nation was selected through a competitive Request for Proposal (RFP) in 2009.

On April 30, 2010, the OCIO and Connected Nation, submitted the Commonwealth's initial SBDD dataset representing participation from approximately 50% of the Puerto Rico provider community, or 8 of 16 total providers identified at the time of submission. Of the 8 providers that were not represented in the source data, 2 had either refused to participate in the voluntary program or have remained unresponsive to the numerous contact attempts. The remaining 6 providers are currently in some form of progress toward data submission but were not able to either submit or verify coverage areas at the time of this submission.

In compiling this initial data set, all commercially reasonable efforts to account for 100% of the known Puerto Rico broadband provider community were expended.

Data Gathering Methodology

Beyond the initial broadband data collection and submission to NTIA, provider outreach will continuously occur to ensure that the most up-to-date and accurate service area information is being collected and displayed on inventory maps. For each semi-annual update period, each viable broadband provider in the Commonwealth will be contacted, via e-mail, phone, etc. to inquire about infrastructure

or system updates and expansion. In some cases this may include, but would not be limited to, providers who offered services below the FCC's definition of broadband but have since upgraded their facilities.

For providers who have previously submitted data to the mapping project, pre-populated information spreadsheets, electronic copies of the provider's footprint (pursuant to the initial data submission) and the most recent version of the provider's service area map can be returned to them for their review and approval. Any changes that have occurred since the last update can be indicated spatially on the map or through the information spreadsheet.

Providers who have not participated before can fill in a new information spreadsheet and supply data. Service area data can be submitted in a variety of formats, including but not limited to ESRI shapefile, CAD file, PDF, spreadsheet, hard-copy maps, text files, and several others. Providers that have previously refused to participate or were non-responsive will be contacted again. Refusing providers will be directed to the state's broadband website so they can view the published maps and see how service data is used and displayed for the project. This map view also allows providers to visually understand the impact of the refusal to participate.

Connected Nation will also continue to review broadband documents, including the FCC 477 reports, Directory of Round 2 BIP Applications and Public Notice Responses and other relevant public documents to ensure that any new providers are also accounted for and contacted. Additionally, Connected Nation received data sets from providers that were unable to provide "approval" of the coverage plots and confirm the validity of the data in time to meet the initial submission. Pending approval, these data sets will be incorporated in subsequent submissions.

Process for Data Integration

Connected Nation, with the assistance of the OCIO, will employ the tactics described in the "Data Gathering Methodology" section to continuously seek out new information from providers that participated in the initial submission to NTIA, process the data from providers that submitted information but were unable to provide approvals before the initial submission to NTIA, and will strive to break the barriers with those providers that were non-responsive and/or refused to participate in the initial data submissions to NTIA. This will include using the guidelines provided in NTIA's letter of June 10, 2010, titled "State Broadband Data & Development Program – Initial Submission – Technical Notes".

Connected Nation will continue to collect and process any data format available, as broadband providers maintain their service area data in many different formats, all in varying levels of complexity and granularity. In order to ensure that the data required by the NTIA is standardized across all providers and that it is as accurate as possible, Connected Nation translates and formats the data that providers are able to supply into a GIS shapefile. While several data formats have been submitted by providers and successfully translated up to this point, there is always the possibility of new data formats being introduced; in that case, Connected Nation will work closely with the provider(s) to ensure the supplied data are correctly translated into a GIS format. All provider data supplied to Connected Nation will be processed and maps returned to the providers for their review and approval. Following the NTIA requirements for provider data submission, Connected Nation will format and structure the spatial data into the appropriate feature classes of the NSGIC Model version 2.0. The geodatabase of provider information will make up the bulk of the data submission to NTIA.

Verification Methodology

Connected Nation's Engineering & Technical Services staff will be devoting a portion of their time on validation processes such as (a) random spectrum analysis studies, (b) identifying pre-selected vertical assets and cross referencing provider submitted data against the Federal Communications Commission databases such as Antenna Structure Registration and/or the Universal Licensing System, (c) validating site information against data collection such as the physical coordinates using a handheld Garmin eTrex Summit GPS unit, (d) locating physical wire-line attributes (such as remote terminals, CATV plant, etc); and (e) digital photography which would capture images of transmit locations, head-ends, remote terminals, central office equipment, etc.

Time will be allocated for cross referencing public documents such as the Federal Communications Commission Form 477 data, data from the e *Junta Reglamentadora de Telecomunicaciones de Puerto Rico* (JRT, by its Spanish acronym; also known as the Puerto Rico Telecommunications Regulatory Board) and conducting "on site" visits with pre-selected providers in order to both validate broadband distribution platforms and to build upon the relationships developed during the initial submission period to ensure continuous provider support and participation.

During the validation efforts and on-site visits, certain common and consistent denominators will be used to ensure the highest quality of validation techniques. These may include wireless signal testing (using a spectrum analyzer) at Wi-Fi locations, at the transmit site of fixed wireless providers and at randomly selected sites for WiMAX and mobile providers. All locations will be subjected to speed tests using the test site (provided by Ookla Net Metrics) which is currently available on the Connect Puerto Rico (http://www.connectpr.org) website.

Another verification methodology encompasses consumer feedback with regards to the publicly available maps and analysis on broadband service areas. The primary mechanism of consumer feedback is in the form of broadband inquiries. These inquiries represent any type of communication received from the public regarding broadband service. Consumers are encouraged through the website and other outreach activities to provide feedback on the maps through the map website, e-mail, or by phone. Once broadband inquiries are received across the Commonwealth, this information is overlaid with the broadband availability information collected through the SBDD program. This allows for a real-world comparison of the broadband landscape to the information received from broadband inquiries. Broadband inquiries are able to provide three types of information: 1) Residents who do not have broadband service available and want it; 2) Residents who have broadband service available but want a different provider; and, 3) Residents who can offer localized information to help verify the accuracy of the broadband maps.

Through the aggregation of broadband inquiries in GIS format, a visual demand for broadband is presented. This form of "crowd-sourcing" allows for the ability to adjust broadband availability maps for accuracy. If information from residents differs from the broadband inventory maps, this allows Connected Nation to approach broadband service providers within a particular area to refine the data and map representation.

Finally, Connected Nation will access and use the aggregate data collected by FCC Form 477 that is being made available to the SDE for purposes of broadband data verification. FCC Order 10-71, released on April 26, 2010, interprets P.L. 110-385 (the Broadband Data Improvement Act) to require the FCC release of this data to each state or territory participating in the BDIA.

Leading Practices

A number of leading practices identified in the Grant Guidance have been implemented by Connect Puerto Rico in the first year of the SBDD program. These include practices such as submission of data in geodatabase format, submission of speed information at a Census Block or wireless footprint level, integration of public data sources, provider feedback, direct assistance to small providers, "crowdsourcing" through the Connect Puerto Rico online interactive map, and detailed descriptions of methodology. Moving forward, Connect Puerto Rico proposes to implement a number of additional leading practices, with associated budget funding, including:

- Pricing – publicly available pricing data will be gathered through provider websites and phone calls to randomly selected addresses across a distributed sampling of the Commonwealth. Per the suggestions contained within the Grant Guidance, pricing data sought will include price points per tier, required bundles, equipment rebates or costs, and incentive offers.
- Data Confidence Scales – this area will be explored for potential development and implementation, in coordination with the NTIA as future federal guidance on data confidence scales is released.
- Ongoing Verification Activities – ongoing verification will focus on areas of concern, based on information garnered from prior data collection and verification. Within these targeted areas of concern, a focus will be placed on field validation of platform availability and the promotion of online "crowdsourcing" tools such as interactive maps and web surveys.
- Surveys – in an effort to create cost-efficiency gains, state level survey research conducted as a means of data verification in Year 1 will be transferred to a related project within the program, combining state level data collection with local level data collection into one survey, for enhanced data and reduced fixed costs across the program. These local-level surveys will continue to verify broadband availability among a statistically significant sample of all households as well as a statistically significant sample of rural households, in accordance with NOFA requirements, while targeting verification among a statistically significant sample of addresses in each Puerto Rico municipality. Meanwhile, these surveys will capture data on technology usage and barriers to adoption at the local level, in support of a number of BDIA purposes.
- In-person community engagement – meetings with community leaders and residents to verify and discuss the results of the data collection will be conducted through the local technology teams proposed as a complementary project within this program, at no additional costs to the data collection project.

Display

The expanded opportunity of the State Broadband Data and Development grant program positions the Commonwealth of Puerto Rico to improve upon its original vision for SBDD grant in terms of data accessibility as well as its utility in aiding planning and collaboration efforts.

The current Connect Puerto Rico website (www.connectpr.org) supports several stakeholder groups in the advancement of the programmatic goals of the SBDD program in Puerto Rico. To the most general program stakeholder, the portal facilitates access to the broadband state level map through the BroadbandStat (BBStat) application, as well as other salient information pertinent to the SBDD effort within the Commonwealth. In addition to serving the accessibility need as prescribed in the original NOFA, it is an integral part of the data acquisition as well as the accuracy and verification methodologies employed in the mapping effort.

STATE BROADBAND CAPACITY BUILDING

NAME: Puerto Rico State Broadband Task Force

FUNDS AWARDED: $0
FUNDS REQUESTED: $626,640

PROBLEM: The Commonwealth of Puerto Rico needs to implement the necessary framework to develop and lead a coordinated initiative for broadband capacity building, continued broadband inventory mapping, local technology planning, technical assistance, and ultimately, increased broadband adoption/literacy.

SOLUTION: As part of the initial planning funds provided in the first NOFA, a Puerto Rico State Broadband Plan will be developed. Based on the initial activities already executed, the OCIO understands that one of the recommendations that will be part of this plan is the establishment of a Sate Broadband Task Force. Therefore, the GPR will establish a Broadband Task Force (BTF) within the OCIO to ensure that broadband initiatives are coordinated and aligned to address needs and support strategy, that the progress is measured and monitored, and that information is effectually communicated.

This scope of work was developed in partnership with Connected Nation. However, due to state government regulations, the OCIO may need to go through an RFP process in order to select the subcontractor that will perform these services.

The BTF will be supported by a local Program Manager (federally funded) that will lead and coordinate activities described in this application. Members of the BTF will be comprised of representatives from the broadband provider community, state government agencies, key legislators, state associations, academic and research communities and other organizations that have an interest in improving Puerto Rico's broadband availability and adoption. This diverse, multidisciplinary group of representatives will offer various perspectives on the unique needs and capabilities of Puerto Rico and contribute constructively to the pursuit of Puerto Rico's digitalization and democratization of Internet access.

The BTF will coordinate and leverage the work of several different activities currently underway (such as broadband mapping and the Connect Puerto Rico portal, which functions as a point of public information about broadband for Puerto Ricans) or proposed as part of this application (broadband capacity building, statewide and local research, statewide broadband summits, statewide and local technology plans, demand aggregation, technical assistance, and other activities identified by the BTF), ensuring that all activities are developed as part of a cohesive and comprehensive island-wide initiative.

OUTCOMES AND BENEFITS: The establishment of the BTF will bring various viewpoints together to create a realistic and progressive strategy for broadband adoption and deployment in Puerto Rico. This Capacity Building element will elevate the dialogue surrounding the broadband landscape in Puerto Rico and imbed it in the planning process for years to come.

The BTF will lead and support the following activities (at a minimum):

- Collaborating to identify and help provide guidance and solutions for Puerto Rico's evolving broadband challenges.
- Developing and maintaining the Puerto Rico State Broadband Plan as well as monitoring the strategic plans with specific goals and recommended action for increasing the availability and adoption of broadband statewide.
- Assessing current programs to improve broadband growth and adoption, and making recommendations on program improvements and creation of new programs in Puerto Rico.
- Gather and introduce relevant economic, social, and demographic information for Puerto Rico in a manner that allows cross-referencing between the collected broadband data and these indicators to ensure a thorough assessment and integrated planning process are in place.
- Conduct regular meetings throughout the planning period (over the first two years) as part of the assessment and planning activities.
- Facilitate meetings of municipal level stakeholders and volunteers to meet throughout the program period to guide the implementation of the municipality strategic plan for improving technology use across sectors.
- Facilitate and promote robust volunteer participation at the state, and local levels that will harvest civically-minded and motivated individuals in the well-being and future of their communities and who are likely to remain supportive of developing innovative technology solutions for Puerto Rico
- Annual statewide summits will be held for all program participants to share best practices across localities and community sectors.

As a part of these activities, the BTF will fulfill many of the activities laid out by the grant guidance document, resulting in a dynamic and research-based state broadband plan, ongoing program assessment across localities, coordination of broadband related activities across state agencies and among state level organizations, an annual statewide broadband summit (as continuation of the Broadband Workshop to be developed in the fourth quarter of 2010 and included in the current planning workplan) to include both public and private entities, for-profit and nonprofit Puerto Rico stakeholders, and aggressive engagement of consumers and the public through the use of media, events, and the Connect Puerto Rico web portal.

COST: Impact studies of similar programs conducted in other states demonstrate that the funds expended over four years for state broadband capacity building, in conjunction and harmony with resources provided for broadband mapping, planning, technical assistance, and local technology planning teams, will transform the technology and broadband readiness of Puerto Rico.

Research indicates that projects proposed by State Broadband Task Force will result in significant increases in broadband adoption at levels above what otherwise would have occurred absent these projects. For example, between 2008 and 2010 in Ohio home broadband adoption has increased by eleven percentage points,[1] more than double the national growth rate of five percentage points during a similar time period.[2] In Tennessee, the Connected Tennessee program has resulted in a nine percentage point increase in statewide home broadband adoption between 2008 and 2010, with even higher broadband adoption growth measured among Tennessee's vulnerable populations, including an 11 percentage point growth among minorities, 13 percentage point growth among elderly residents, 16 percentage point growth among households with children, 17 percentage point growth among adults with disabilities, 18 percentage point growth among rural residents, and 20 percentage point growth among low-income households.[3]

A number of research studies[4] have directly linked broadband adoption increases to overall strengthening of the economy, and it is expected that similar increases will yield similar economic benefits in Puerto Rico. As stated previously, the GPR has established the "A Grand Puerto Rico" (*Puerto Rico En Grande*) to guide the economic development of the Island. In order to achieve a Grand Puerto Rico vision, Broadband development will serve an intricate role in the achievement of this vision.

By linking the activities of state broadband capacity building with broadband mapping, planning and technical assistance the funds expended in this program category will yield greater efficiency and effectiveness. The BTF will direct and enhance activities in other program categories, and activities in other categories will inform and strengthen the ability of the BTF to craft the state's technology plan, assessments, and solutions.

SBDD PURPOSE: The activities undertaken in the State Broadband Capacity Building initiative will directly address the following SBDD-related purposes:

"... (2) to identify and track the areas with low levels of deployment, the rate at which residential and business users adopt broadband service and other related information technology services, and possible suppliers of such services;
... (3) to identify barriers to the adoption of broadband service and information technology services;
... (6) to collaborate with broadband service providers and information technology companies to encourage deployment and use;

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[1] 2008 and 2010 Connect Ohio® Residential Technology Assessments, www.connectohio.org

[2] Pew Internet and American Life Project, *Home Broadband* 2008, released 6/2/2008. Pew Internet and American Life Project, *Internet, Broadband, and Cell Phone Statistics*, released 1/5/2010.

[3] 2008 and 2010 Connected Tennessee® Residential Technology Assessments. www.connectedtn.org

[4] For example, Gillett, Sharon; Dr. William Lehr; Carlos Osorio; and Marvin Sirbu, "Measuring the Economic Impact of Broadband Deployment." Feb 2006. Also, The Economic Impact of Stimulating Broadband Nationally. Connected Nation. February 2008.

... (8) to collect and analyze detailed market data concerning use and demand for broadband service;
... (9) to facilitate information exchange regarding use and demand for broadband services between public and private sector users; ..." (source: P.L. 110-385)

TECHNICAL ASSISTANCE

NAME: Broadband Technical Assistance

FUNDS AWARDED: $0
FUNDS REQUESTED: $605,743

PROBLEM: Community anchor institutions and local leaders are currently in need of both technical engineering assistance for targeted, community-specific IT assessments as well as effective tools/resources for aggregating and sharing best practices across regions and communities. Based on the first surveys performed as part of the planning initiative, 55% of Puerto Ricans own computers in their home (61% of those who do not have a computer understand that they do not need one or they are too complicated, equivalent to more than 793,000 people) and there is a 31% broadband usage.

It is known that different regions within Puerto Rico behave in different manners. Therefore, locally (municipal level) relevant research on technology usage, needs, and barriers among Puerto Rico residents and businesses is necessary to develop cost-effective programs for local broadband planning, application development, digital literacy, and improved computer ownership and Internet use. Without credible research at the local level, local planning teams are forced to make assumptions about what strengths and weaknesses exist in their community. Additionally, this type of research is needed on a recurring basis to effectively benchmark technology use and evolving barriers/needs, as well as to identify best practices programs and to measure the impact of state and local programs over time. Currently, there is no publicly available source for local data on technology use and barriers to use.

State level research cannot provide granular enough information to effectively and efficiently inform the tactical technology strategy in each community. If communities intend to fill the broadband gaps and improve technology literacy and use in a sustainable manner, broadband plans need to be created locally. Even local level research is not granular enough for an effective, targeted community based effort. Technology usage and barriers may vary widely from one municipality to the next.

SOLUTION: The Broadband Technical Assistance activities will develop technical assistance tools that include:

- Municipality level broadband research and benchmarking as a tool for state and local planning and program development, as well as for measuring and assessing state and local programs to identify best practices, which programs are most effective and which programs may need

assistance to produce greater results. To this end, a series of municipality level statistical telephone surveys will be conducted at the state and municipality levels to track and understand the local challenges related to broadband and computer use. Residential surveys will measure the rate of home broadband adoption, computer ownership, online application use and frequency of use, barriers to home broadband adoption and computer ownership, prices paid for broadband service, and similar broadband related questions across demographics in each municipality , producing statistically significant results at a municipality level. These municipality level residential surveys will be conducted in the first year and the final year of the project. Additionally, state level residential surveys will be conducted once during each of the two interim project years to provide statewide measurements and macro insights on how technology use is changing from year to year across demographics. Annual telephone surveys will also be conducted among a statistically significant sample of businesses across the Commonwealth, with quotas set for industry sector and business size.

- Technical engineering and IT assistance, as directed by the BTF, to provide targeted broadband infrastructure assessments and potential options for local determination of the most cost-efficient broadband growth. These technical engineering assessments will include a number of options for local assistance, including broadband infrastructure assessments and cost modeling across platforms and towers, IT assessments across community sectors to assist local government and other community anchor institutions, and related technical assistance as requested by local leaders.

As requested or otherwise directed by the BTF, the services of trained broadband professionals to assist state subdivisions will be made available. The Administration of this project component would be coordinated through the program office of the BTF.

Service offerings to program stakeholders could include but not be limited to:

Technology Strategy Development:
- Feasibility studies
- Business plan development
- Cost modeling/assessments
- IT assessments

Engineering & Technical Services:
- Wireless propagation studies
- Tower sitting, permits and lease negotiations
- Equipment installation
- Train-the-Trainer sessions (technical)
- GIS services

Sustainability Planning:
- Technical writing services
- Grant writing services
- Project Management/Program design services
- Train-the-Trainer sessions (non-technical)

This scope of work was developed in partnership with Connected Nation. However, due to state government regulations, the OCIO may need to go through an RFP process in order to select the subcontractor that will perform these services.

OUTCOMES AND BENEFITS: Municipality level research will ensure that Puerto Rico's municipal level stakeholders have access to reliable, current, community-specific data as they work to develop realistic goals and actionable, cost-effective strategic plans to meet Puerto Rico's specific community needs. Municipality level residential surveys in the first year and the final year of the project will enable both effective program development as well as a mechanism for measuring the impact of state and local programs over time and across various demographic groups. This process allows for identifying best practices – those programs evidenced to be most effective, and those programs which may need assistance to produce greater results.

The technical engineering assistance proposed under this category will interface directly with local government leaders and local broadband providers (or potential providers) to develop an assessment of what infrastructure is available and what may be necessary to ensure broadband service to those currently unserved and enhanced service to areas or populations that are underserved. The engineering assessments provided will allow local leaders and communities key intelligence that will allow them to coordinate and lead broadband deployment to their citizens.

Through the coordination of local summits, participants will be able to collaborate on effective utilization of technical assistance resources to address specific broadband deficiencies within communities.

These program activities will satisfy, wholly or in-part, the following technical assistance activities described in the grant guidance provided by NTIA:

- Provide technical expertise to local institutions, nonprofits, and governments to develop or help sustain deployment and adoption-related initiatives.
- Support the creation of tribal, regional, or local task forces or advisory boards and strategic plans.
- Support tribal, regional, or local coordinating activities.
- Provide educational information to communities, businesses, and other stakeholders about the efforts being undertaken to improve access and adoption across a state or region.

COST: The technical assistance provided to communities in this category will bring about more cost-effective local projects, as these tools provide the relevant information for determining the costs and benefits associated with potential solutions for sustainable broadband expansion, deploying targeted and results-oriented broadband applications, and understanding what best practices are most applicable and transferable across communities and regions.

Further, in an effort to create gains in cost-efficiency, state level surveys have been shifted from the Data Collection project (data verification) into the Technical Assistance project. This shift enables state level surveys to be conducted in concert with local level surveys, thus capitalizing on the natural fixed costs of survey research and realizing economies of scale through survey bundling across geographies. Additionally, municipality level surveys have been staggered to allow for micro level data when it is most

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necessary, as this granular data collection is more costly than state level data collection. To that end, municipality level surveys will be administered only at the beginning and the end of the project for cost-efficiency. Interim state level surveys will produce a more macro view of evolving demographic trends in technology usage, which can be extrapolated and applied at a local level using the original municipality level data as a comparison, without the higher costs of interim local level surveys.

SBDD PURPOSE: The activities undertaken in the technical assistance portion of the Connect Puerto Rico initiative will directly address the following SBDD-related purposes:
"... (2) to identify and track the areas with low levels of deployment, the rate at which residential and business users adopt broadband service and other related information technology services, and possible suppliers of such services;
(3) to identify barriers to the adoption of broadband service and information technology services;
... (6) to collaborate with broadband service providers and information technology companies to encourage deployment and use;
... (8) to collect and analyze detailed market data concerning use and demand for broadband service;
(9) to facilitate information exchange regarding use and demand for broadband services between public and private sector users; ..." (source: P.L. 110-385)

CONCLUSION

The Government of Puerto Rico has identified as one its primary goals the digitalization of Puerto Rico and democratization of Internet access. The proposed projects will decidedly mark Puerto Rico's ongoing commitment to this goal by supporting a comprehensive program with a tailored approach to improving broadband access and accelerating digital literacy across the island.

The extension of the current mapping activities will ensure that a reliable measurement of broadband availability and a reliable identification and assessment of the gaps in broadband service is available as expansion projects are planned and executed. This extended mapping will keep the focus on those unserved areas of the Commonwealth that should continue to be primary targets for deployment. Additionally, the longer-term mapping activities aligns with building and maintaining relationships with the broadband provider community to ensure Puerto Rico closes gaps on broadband enhancement opportunities while maintaining a healthy competitive environment that benefits consumers.

The State Capacity Building proposal will involve establishing a Broadband Task Force to coordinate and drive the broadband supply and demand-side activities throughout the Commonwealth. The Task Force will represent various public and private stakeholder viewpoints and will thereby be current with island-wide challenges and initiatives. This collaborative group will effectively measure and assess programs to improve broadband growth and adoption and make focused recommendations on program improvements and creation of new programs to adapt to the evolving broadband landscape as well as social, economic, and demographic conditions. This group will play a dedicated and critical leadership role in coordinating broadband access and adoption efforts and communicating the strategic vision.

The Technical Assistance proposal will allow for planning teams to have access to an array of user-friendly tools and relevant resources that respond to specific local needs with fact-based solutions. The benchmarking tools will prepare planning teams to better understand the barriers to broadband technologies and applications within a given community and provide a solid research basis for tactical demand stimulation planning. The engineering assistance tools will help identify demand for prospective services in communities and provide sophisticated cost-modeling to help assess investment opportunities. All these tools will help to effectively and efficiently address opportunities and help to educate, engage, and involve citizens in the process.

All of these proposed projects work together in a way that fits with Puerto Rico's approach to preparing its citizens for a new economic model. The economic model would position Puerto Rico as a hub for high technology services where new technology related jobs will be created and new businesses attracted, maximizing the local bilingual (Spanish and English) capabilities. The success of the model will rely heavily on Puerto Rico making a reality of a broad digital literacy base and advanced technology use and access so it can be prepared to take advantage of existing economic opportunities as well as the creation of new ones. Similarly, Puerto Rico recognizes the need to reduce complexities in and improve access to government services (as evidenced by the pr.gov initiative), canonize digitalize literacy in the curriculum as part of its school modernization efforts, foster interoperability and reliability of public safety systems, and improve health conditions through health related technologies. In summary, Puerto Rico has endured a long history of dramatic change usually stemming from external influences of which it has not been best equipped to respond. The proposed projects create a framework to harness the unique ideas, capabilities, and spirit of Puerto Rico and focus them to best attain the goal of

digitalization and democratization of Internet access so Puerto Rico can be equipped to progressively lead a digital economy.

OFFICIAL SUBMISSION TO

THE NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION UNDER THE STATE BROADBAND DATA AND DEVELOPMENT GRANT PROGRAM FOR THE COMMONWEALTH OF PUERTO RICO

STATE BROADBAND DATA AND DEVELOPMENT GRANT PROGRAM

Amended and Supplemental Application

BUDGET NARRATIVE

MAPPING
BUDGET NARRATIVE

OVERVIEW

The purpose of this narrative is to break down the costs for personnel, fringe benefits, travel, equipment, materials/supplies, and subcontracts involved in this project, as well as to depict the in-kind contributions, indirect costs, and other expenses that will occur. The costs for Years 3-5 reflect a 4% Cost of Living adjustment.

Unless otherwise specifically stated, all costs are requested from federal sources. An administrative fee for the Puerto Rico Governor's Office of 1% of the total subcontractor costs are budgeted to cover the grant administration costs related to grant management and reporting.

GIS Staff

Provider Relations Manager works in coordination with the ETS staff and field resources to collect provider data and serves as the primary contact for all multi-state providers who do business within the state. The Manager ensures that all providers, no matter the size of their coverage, receive adequate resources and assistance to participate fully in the project. The Manager coordinates all communications with providers during the data collection, data processing and data validation phases. In order to be able to address any provider concerns or questions fully and promptly, the Manager possesses extensive knowledge about all three phases of the mapping process. This position is projected to spend 8% of their time on this project with a total cost of $18,421.

GIS Service Manager leads the technical data processing team. With GISP certification, this manager insures CN's broadband mapping stays cutting-edge through the employment of relevant, evolving best practices among GIS professionals. Oversees the following data processing functions:
- Manages GIS staff
- Oversees processing and standardization of provider network availability data on broadband maps from a varying level of technical data inputs
- Serves as a quality control checkpoint for data processing by close coordination of processing work with GIS analysts
- Assembles datasets as necessary for delivery to NTIA, incorporation into interactive BroadbandStat mapping, and other such required dataset/map production
- Point of entry and manages mapping's resolution of inbound data validation, especially those arising from CN's consumer driven mapping validation feedback loop

This position is projected to spend 8% of their time on this project with a total cost of $15,747.

Business Programmer Analyst supports and administers the tracking databases required for CN's mapping projects, including provider and project reporting databases as well as mainline vendor and regular, bi-weekly data refresh management for CN's online, interactive mapping application,

BroadbandStat. This position is projected to spend 5% of their time on this project with a total cost of $8,913.

GIS Data Coordinator provides administrative coordination and serves as a quality control checkpoint of sensitive provider data by serving as a gatekeeper to this highly confidential information. In addition, this staff coordinates and tracks non-disclosure agreements with providers as well as managing CN's provider engagement database. This administrative position also includes a variety of tasks that involve implementation on mapping project plans, assisting the GIS Services Manager with workflow assignments, tracking and deadlines. This position is projected to spend 8% of their time on this project with a total cost of $13,370.

GIS Analyst 03 employs technical best practices in GIS data processing to assimilate broadband provider network data, as well as other publicly datasets (such as road data, basemap data, census data, etc.), into state broadband maps. Analysts receive data captured by CN's field resources and provider relations staff and normalize this according to industry standard methodologies for incorporation into broadband maps. This position is projected to spend 33% of their time on this project with a total cost of $45,960.

Provider Relations Specialist assists in developing and maintaining relationships with providers and also serves as an internal resource to project and state staff regarding providers, the technologies they employ, and other issues that need to be resolved that requires provider expertise. The Specialist works as the intermediary between the provider and internal efforts for data collection, processing and validation. This position is projected to spend 8% of their time on this project with a total cost of $10,399.

Engineering & Technical Services

ETS Manager oversees the Engineering and Technical Services division of CN. In this capacity, the ETS Manager directs workflow assignments of ETS technical staff and manages as well as contributes to on-the-ground provider field data collection, propagation studies, and field-based broadband wireless and wireline network validation. The ETS Manager also assists the Provider Relations Specialist in establishing and managing provider relationships, particularly among local providers in CN mapping states. This position is projected to spend 8% of their time on this project with a total cost of $27,956.

ETS Analyst 03 provides on-the-ground engineering support mapping projects by focusing on local engagement as necessary of identified providers for purposes of data collection. Collection efforts may include wireless propagation studies in the case of under-resources wireless providers, and in the case of wireline providers, visual inspection and evaluation of network facilities as necessary to collect data. ETS Analysts also then perform field-based validation efforts consistent with CN's methodologies for aggressively challenging provider reported data. This position is projected to spend 25% of their time on this project with a total cost of $78,942.

Community Anchor Institution

CAI Data Manager manages the community anchor institution data collection efforts by CN through supervising CAI Data Analyst staff and also assisting in the collection and processing of CAI data. CAI Manager also serves as the primary interface between GIS staff for purposes of geocoding, mapping and validation of CAI data on state broadband maps. This position is projected to spend 8% of their time on this project with a total cost of $20,798.

CAI Data Analyst 02 works with individual states to coordinate, collect, aggregate and process CAI data. The Analyst is the primary contact for all community anchor institutions for all data collection as well as the CAI interface with state partners who direct this data collection effort. This position is projected to spend 20% of their time on this project with a total cost of $28,226.

State Services Group

State Services Manager directs the staff and oversees the activities of the State Services Group. In this capacity, the Manager oversees Connected Nation's interface with mapping state partners, primarily other broadband stakeholders in the State in order to provide a convenient and single point of representation of CN's teams relevant to mapping (ETS, PMO, GIS, CAI, Outreach and Awareness). In addition, the Manager directs the SSG's contribution to both data collection through high-level provider engagements in mapping states and also data validation through public review, crowdsourcing, challenge and feedback with stakeholder groups – governmental, private-sector, and others – in a given mapping state. SSG supports community anchor institution data collection activities through public sector engagement of key state-based CAI resources. In addition to contributing to the data collection, processing, and validation process with the state's broadband stakeholders, the SSG also maintains constant alignment of CN mapping efforts to complement the State's broadband goals and strategic plan. This position is projected to spend 9% of their time on this project with a total cost of $33,198.

State Services Sr. Specialist 05 is an experienced professional who interfaces with mapping state partners, primarily the other broadband stakeholders in the State in order to provide a convenient and single point of representation of CN's teams relevant to mapping (ETS, PMO, GIS, CAI, Outreach and Awareness). This position is projected to spend 25% of their time on this project with a total cost of $87,362.

Outreach and Awareness Manager coordinates and manages all outreach and awareness efforts that aid in promoting the state's data collection, mapping and data validation efforts. The work performed by the Outreach and Awareness staff is the key to building public awareness of the projects goals by engaging the public in validation dialogue. Driving public feedback and scrutiny of the map is an important process that yields valuable information to the process of validating provider data. This position is projected to spend 5% of their time on this project with a total cost of $13,590.

Outreach and Awareness Specialist 05 conducts the outreach and awareness efforts that aid in promoting the state's data collection, mapping and data validation efforts. This position is projected to spend 25% of their time on this project with a total cost of $37,140.

Project Management Office

Project Manager Director manages, coordinates, and oversees the project management team. The Director ensures that all project activities are carried out in accordance with established laws, regulations, grant and state specifications, schedules, and budgets. In addition, the Director regularly investigates project processes and management practices to realize efficiencies and economies of scale and their associated cost savings across CN's mapping project portfolio. This position is projected to spend 5% of their time on this project with a total cost of $19,414.

The total projected personnel costs for this project is $459,436.

Other employees may be hired as needed to fulfill the requirements of this project.

Fringe Benefits

Fringe Benefits are projected as a percentage of the personnel's annual salary calculated as follows: Employer's FICA Tax (7.65%), Unemployment Tax (.5%), Health/Dental/Vision Insurance (5.7%), Disability & Life Insurance (.6%), Accrued Paid Time Off (3.6%), SIMPLE match (3%), Gym benefit (.1%) and Professional Development (.3%). The total projected percentage cost will be 21.45% of the personnel salaries. The total projected fringe benefit costs for the project are $98,550.

Other fringe benefits may be implemented as needed.

Projected Travel Costs

Travel costs associated with Broadband Mapping will support the ability for staff to be in the field for data collection, field validation, and stakeholder management efforts. For purposes of this narrative, costs are based on the following assumptions: Airplane travel cost is based on a round-trip airfare of $780. Hotel room cost is based on per room rates (including tax) of $208 per night. Rental car expense (including fuel cost) is projected to be $94 per day. Per Diem allowance for meals is $69 per day based on the current standard federal per diem rate. Mileage is based on $.52 per mile. Each of the above rates listed are for project Year 2 with subsequent years increased by a 4% inflation adjustment.

Travel costs consist of planned trips by various categories of employees or consultants. For purposes of this budget in-state travel refers to travel within driving distance while out-of-state travel refers to travel requiring an airfare and rental car. When out-of-state travel is required, the average round-trip miles to the airport are assumed to be 120 miles.

- State Services staff will have limited travel to manage and facilitate stakeholder relationships critical to project success. These efforts will include regular updates with state policymakers, telco industry leaders (including associations) and local leaders to, in part, manage the multitude of interests and properly respond to project requests and leveraging state opportunities to optimize the federal broadband mapping investment. State Services travel requires 12 out-of-state trips (4 days, 3 nights each). The total cost for airfare is

$10,124; hotel cost is $8,100; rental car cost is $4,896; per diem cost is $3,600; and mileage cost is $806 for a total cost of $27,526.

- Engineering and Technical Services staff travel costs will be incurred primarily for 1) field-based broadband provider data collection as may be required for providers who could not otherwise supply data, and 2) field data validation techniques utilizing specialized skills required to perform this critical "spot check" tier of the multi-tiered data validation program. Engineering and Technical Services staff travel requires 6 out-of-state trips (4 days, 3 nights each). The total cost for airfare is $5,062; hotel cost is $4,050; rental car cost is $2,448; per diem cost is $1,800; and mileage cost is $403 for a total cost of $13,763.

- Project management travel assures detail driven organization of the project through occasional onsite work. Project Management requires 3 out-of-state trips (4 days, 3 nights each). The total cost for airfare is $2,531; hotel cost is $2,025; rental car cost is $1,224; per diem cost is $900; and mileage cost is $202 for a total cost of $6,882.

The total projected travel costs attributable to this project are $48,171.

Additional travel expenses may be incurred as needed to fulfill the requirements of this project.

Equipment

BroadbandStat provides a comprehensive mapping portal for states to manage broadband stimulus projects and activities through the ARRA. Using the ArcGIS Server and its API mapping technologies to incorporate broadband mapping and survey data with demographic and topographic data from the Census Bureau, and other reputable data sources, BroadbandStat provides not only a user-friendly GIS viewer to understand and track broadband deployment over time, it also provides an analytical tool for prioritizing unserved and underserved areas, evaluating and tracking stimulus projects, and enabling taxpayers with full transparency and accountability of broadband stimulus funding in their state. BroadbandStat empowers states to:

- Leverage the best-of-class, geographic informatics for broadband decision-making
- Build and evaluate scenarios to help score and prioritize broadband proposals
- Provide data-based support for effective grant-making
- Facilitate project investment tracking over time
- Provide access-based tools that are relevant and meaningful for specific audiences, including government agencies, consumers, community leaders, broadband providers, and media

The project cost for maintenance and upkeep for Broadband Stat attributable to this project is $50,645.

ESRI ArcInfo and ArcGIS software has been purchased and will be used to map the broadband and Community Anchor Institution data received. ESRI ArcInfo will allow Connected Nation to process the multitude of data formats that are received from the various broadband providers who have different levels of digital data available for their networks. The project cost for maintenance and upkeep attributable to this project is $3,636.

The total projected amount of equipment costs for this project is $54,281.

Other equipment may be purchased as needed to fulfill the requirements of this project.

Materials/Supplies

Computers will be purchased for use on this project. One computer and its associated equipment and software will be purchased for a projected cost of $ 5,408.

Connected Nation will estimate typical download and upload speeds using information on actual speeds gathered through volunteer consumer-led, online speed tests. In order to conduct the speed tests, CN has purchased a custom speed test tool from Ookla Net Metrics. The projected cost for annual license renewal cost is $1,688.

The total projected cost of Material/Supplies attributable to this project is $7,096.

Other materials and supplies may be purchased as needed to fulfill the requirements of this project.

Subcontracts

Engineering Consultants: Engineering Contractors will be utilized to help in the data collection, solicitation, and development work. These Engineers will primarily work with the fixed wireless providers in states that often do not have engineering departments and thus are unable to provide the type of data necessary to accurately depict where their broadband services are available. These Engineers will also provide additional support where necessary with other broadband providers with whom their individual expertise is deemed helpful in the data collection. The projected total federal cost for engineering consultants is $38,880 with the consultant providing $38,880 as an in-kind contribution to the project.

Legal Consultants: Attorneys will assist in multiple areas of the project to maintain clear emphasis on compliance and efficiency. Legal costs related to mapping will involve performance of legal services in support of the mapping project including further NDA negotiation and re-negotiation as may be required by providers, provider data acquisition, and intellectual property and confidentiality concerns arising out of data management. The projected total federal cost for legal consultants is $14,314 with the consultant providing $14,314 as an in-kind contribution to the project.

ESRI Hosting: ESRI aids in deploying and hosting Connected Nation's BroadbandStat (BBStat) web application. ESRI houses the customized BBStat application in their highly available, monitored, and managed environment. The scope of services includes setting up a staging environment for data verification and compatibility as well as a production environment for client access. Capacity planning exercises have been completed to ensure that the supporting infrastructure meets the performance requirements and utilization expectations. ESRI expert technical support engineers will also be available to address escalated issues that may arise. The BBStat application is securely located in an isolated and dedicated area within this hosting environment. Access is limited to only dedicated ESRI technical staff

in order to provide necessary support functions. Connected Nation will provide data updates to the application via a secure file transfer method. The total projected cost for deploying and hosting BBStat is $20,960.

The total subcontractor costs budgeted for this project is $74,154, with an in-kind match of $53,194.

Other subcontractors may be engaged as needed to fulfill the requirements of this project.

Other

An outreach campaign will be developed for the primary purpose of verification of data. Media outlets in Puerto Rico that can reach the greatest number of individuals in an outreach effort to drive them to Puerto Rico's interactive maps and speed test tools will be targeted. The total projected outreach cost is $17,820, with half being provided as in-kind match and half as federal funding.

Other costs may be incurred as needed to fulfill the requirements of this project.

Indirect Costs

Total projected indirect costs for this project are $446,389.

Connected Nation's indirect cost rate will include but not be limited to the following types of costs:
- Support salaries, fringe benefits, and travel cost for Connected Nation personnel performing the functions of administration, human resources, finance, information technology, and education and awareness.
- Consultant costs and/or professional fees for functions listed above including but not limited to accounting and legal.
- Depreciation for general office equipment or items used for the functions listed above but not purchased with federal funds.
- Insurance and licenses.
- General office expense, supplies, and miscellaneous items.
- General postage.
- Printing costs.
- Connected Nation rent for support staff listed above.
- Utilities and repairs and maintenance.
- Telecommunication costs.

BROADBAND CAPACITY
BUDGET NARRATIVE

Overview

The purpose of this narrative is to break down the estimated costs for personnel, fringe benefits, travel, equipment, materials/supplies, and subcontracts involved in this project, as well as to depict the in-kind contributions, indirect costs, and other expenses that will occur. The costs for Years 2-5 reflect a 4% Cost of Living adjustment.

Unless otherwise specifically stated, all costs are requested from federal sources.

Project Management Office

Program Manager manages, under the strategic direction of the State partner, the unique tactical implementation of each state partner's technical assistance and local planning team resources and partnerships. Program Managers are charged with successful, efficient program implementation and the development of sustainable, demonstrable value propositions to key stakeholders through tangible, targeted program impact. Program Managers are based in facilities provided by the State through grant matching funds (estimated at $63,697), in most cases directly alongside the State partner's staff. This position is projected to spend 100% of their time on this project with a total cost of $276,020

Other employees may be used as needed to fulfill the requirements of this project.

Fringe Benefits

Fringe benefits are projected as a percentage of the personnel's annual salary calculated as follows: Employer's FICA Tax (7.65%), Unemployment Tax (.5%), Health/Dental/Vision Insurance (5.7%), Disability & Life Insurance (.6%), Accrued Paid Time Off (3.6%), SIMPLE match (3%), Gym benefit (.1%), and Professional Development (.3%). The total projected percentage cost will be 21.45% of the personnel salaries for Years 2-5. The projected fringe benefit cost for the project is $59,207.

Additional fringe benefits may be implemented as needed.

Projected Travel Costs

Travel costs arising out of State Broadband Capacity will enable local, state-based resources to be actively and regularly engaged in planning and implementing on their state's SBDD broadband programs. For purposes of this narrative, costs are based on the following assumptions: Airplane travel cost is based on a round-trip airfare of $780. Hotel room cost is based on per room rates (including tax) of $208 per night. Rental car expense (including fuel cost) is projected to be $94 per day. Per Diem allowance for meals is $69 per day based on the current standard federal per diem rate. Mileage is

based on $.52 per mile. Each of the above rates listed are for Project Year 2 with subsequent years increased by a 4% inflation adjustment.

Travel costs consist of planned trips by various categories of employees or consultants. For purposes of this budget in-state travel refers to travel within driving distance while out-of-state travel refers to travel requiring an airfare and rental car. When out-of-state travel is required, the average round-trip miles to the airport are assumed to be 120 miles.

- Project management travel assures hands-on leadership and delivery of state and local initiatives, as well as direct program representation to stakeholders both in-state and nationally. This travel reflects primarily that of the state manager and it will therefore be critical to have this staff member be widely available and widely seen across the state as well as interacting with other state representatives to further define the project and encourage citizen engagement. Project Management requires 8 out-of-state trips (2 days, 1 night each) and 16 in-state trips (1 day). The projected airfare cost is $6,622; hotel cost is $1,766; rental car cost is $1,600; per diem cost is $2,352; and mileage cost is $2,288.

The total projected travel costs attributable to this project are $14,628.

Additional travel expenses may be incurred as needed to fulfill the requirements of this project.

Materials/Supplies

There will be office supplies needed for the administration of this project. These office supplies and materials include a laptop computer that will be purchased for this project. The estimated cost for computers and associated equipment is $2,400.

Other equipment may be purchased as needed to fulfill the requirements of this project.

Other

State Broadband Task Force
This application for supplemental funding proposes to engage a twenty (20) member Broadband Task Force that will be comprised of territory-level leaders in Puerto Rico representing regulators, providers, policymakers, community anchor institution leaders, industry association representatives, and the like. This group will convene monthly for the four (4) year life of the program for an average of three (3) hours per meeting. The average total hourly compensation rate for these individuals, including salaries and benefits, is valued at $67. The estimated in-kind contribution will total $205,920.

Indirect Costs

Total indirect costs are estimated to be $268,181.

Indirect cost rate will include but not be limited to the following types of costs:

- Support salaries, fringe benefits, and travel cost for personnel performing the functions of administration, human resources, finance, information technology, and education and awareness.
- Consultant costs and/or professional fees for functions listed above including but not limited to accounting and legal.
- Depreciation for general office equipment or items used for the functions listed above but not purchased with federal funds.
- Insurance and licenses.
- General office expense, supplies, and miscellaneous items.
- General postage.
- Printing costs.
- Rent for support staff listed above.
- Utilities and repairs and maintenance.
- Telecommunication costs.

TECHNICAL ASSISTANCE
BUDGET NARRATIVE

Overview

The purpose of this narrative is to break down the costs for personnel, fringe benefits, travel, equipment, materials/supplies, and subcontracts involved in this project, as well as to depict the in-kind contributions, indirect costs, and other expenses that will occur. The costs for Years 2-5 reflect a 4% Cost of Living adjustment.

Unless otherwise specifically stated, all costs are requested from federal sources.

Research

Research Manager is responsible for managing the planning and production of research projects, including daily operations of the research staff and research vendor management. This position works with internal and external stakeholders, including academic institutions, to develop research and provide critical analysis to evaluate a project efficacy and impact. The Research Manager uses qualitative and quantitative techniques to interpret data, formulate reports and makes peer reviewed, substantiated recommendations based on research findings after review. This position is projected to spend 9% of their time on this project with a total cost of $17,715.

Research Analyst 02 utilizes qualitative and quantitative techniques to interpret data, formulate reports and make substantiated, peer reviewed recommendations based on research findings. This position works with internal and external stakeholders to develop research and provide critical analysis in support of projects' missions. In addition, this position provides project-related guidance and quality assurance reviews for the research team. This position is projected to spend 25% of their time on this project with a total cost of $35,283.

Research Analyst 03 utilizes qualitative and quantitative techniques to interpret data, formulate reports and make substantiated, peer reviewed recommendations based on research findings. This position works with internal and external stakeholders to develop research and provide critical analysis in support of projects' missions. In addition, this position provides project-related guidance and quality assurance reviews for the research team. This position is projected to spend 11% of their time on this project with a total cost of $20,306.

Research Specialist 3 is responsible for using qualitative and quantitative best practices in the research community to analyze survey data while identifying additional data from secondary sources to challenge and validate/refute findings. This position works with internal and external stakeholders to help develop research and provide critical information in support of projects' missions. This position is projected to spend 33% of their time on this project with a total cost of $51,300.

The total projected amount for personnel costs for this project is $124,604.

Other employees may be utilized as needed to fulfill the requirements of this project.

Fringe Benefits

Fringe benefits are projected as a percentage of the personnel's annual salary calculated as follows: Employer's FICA Tax (7.65%), Unemployment Tax (.5%), Health/Dental/Vision Insurance (5.7%), Disability & Life Insurance (.6%), Accrued Paid Time Off (3.6%), SIMPLE match (3%), Gym benefit (.1%), and Professional Development (.3%). The total projected percentage cost will be 21.45% of the personnel salaries for Years 2-5. The projected fringe benefit cost for staff for this project is $26,728.

Additional fringe benefits may be implemented as needed.

Projected Travel Costs

Technical Assistance travel costs enable economies of scale for the grant program by aggregating resources across the state that can then be deployed in support of state and local technology projects in which technical expertise is required. These talent pools complement local volunteer teams by empowering them with more advanced technical know-how to support their technology projects than they could likely otherwise afford or even identify. For purposes of this narrative, costs are based on the following assumptions: Airplane travel cost is based on a round-trip airfare of $780. Hotel room cost is based on per room rates (including tax) of $208 per night. Rental car expense (including fuel cost) is projected to be $94 per day. Per Diem allowance for meals is $69 per day based on the current standard federal per diem rate. Mileage is based on $.52 per mile. Each of the above rates listed are for project Year 2 with subsequent years increased by a 4% inflation adjustment.

Travel costs consist of planned trips by various categories of employees or consultants. For purposes of this budget in-state travel refers to travel within driving distance while out-of-state travel refers to travel requiring an airfare and rental car. When out-of-state travel is required, the average round-trip miles to the airport are assumed to be 120 miles.

- Engineering and Technical Services staff travel costs allow the resource pool of skilled staff that will engage and provide the depth of technical expertise required for support of state and local technology initiatives. Engineering and Technical Services staff travel requires 12 out-of-state trips (4 days, 3 nights each). The total projected cost for airfare is $13,244, the total cost for hotels is $10,596, the total cost for rental cars is $6,400, the total cost for per diem is $4,704, and the total cost for mileage is $1,056 for a total projected travel cost of $36,000.

The total projected travel costs attributable to this project are $36,000.

Additional travel expenses may be incurred as needed to fulfill the requirements of this project.

Materials/Supplies

There will be office supplies needed for the administration of this project. These office supplies and materials include a laptop computer that will be purchased for this project. The estimated cost for computers and associated equipment is $2,600.

Other materials and supplies may be purchased as needed to fulfill the requirements of this project.

Subcontracts

Engineering Consultants: Engineering Consultants will help in the data collection, solicitation, and development work. These Engineers will primarily work with the fixed wireless providers in states that often do not have engineering departments and thus are unable to provide the type of data necessary to accurately depict where their broadband services are available. These Engineers will also provide additional support where necessary with other broadband providers with whom their individual expertise is deemed helpful in the data collection. It is projected that the total federal cost for engineering consultants for this project will be $42,400 with the consultants providing $42,400 as an in-kind contribution to the project.

Legal Consultants: Attorneys will assist in multiple areas of the project to maintain clear emphasis on compliance and efficiency. Legal costs related to technical assistance projects will include engagement of Counsel for the development of contracts, protocols, and other appropriate legal instruments as well and to maintain legal oversight of the formal engagement of stakeholders by the technical services teams. Other costs in this program will include legal engagement and oversight of subcontractors as appropriate, Counsel for community engagement training sessions and other such similarly situated programmatic legal needs. It is projected that the total federal cost for legal consultants for this project will be $8,915 with the consultants providing $5,784 as an in-kind contribution to the project.

Research: Research Consultants will be used to assist with the survey research design, data processing of survey results and verification of reporting. These surveys will be used as tools for state and local planning and program development, as well as for measuring and assessing state and local programs to identify best practices, which programs are most effective and which programs may need assistance to produce greater results in each of the 78 municipalities. There will be state level research surveys conducted in Years 3 and 4, local level research surveys conducted in Years 2 and 5, and research peer surveys conducted in every year of the project. The total projected cost for the state, and local peer level surveys is $193,270.

The total subcontractor cost budgeted for this project is $244,585.

Other subcontractors may be engaged as needed to fulfill the requirements of the Project.

Other

In addition to the aforementioned responsibilities, the Broadband Task Force will also host an annual Broadband Summit. The purpose of this Summit will be to provide a quarterly gathering to discuss broadband accomplishments, best practices, and to identify areas of need in the overall Puerto Rico Broadband Plan. By gathering representatives from the local libraries, state library association, municipalities, businesses, provider community, and other interested organizations, the Broadband Task Force, in conjunction with the local technology planning teams and the other key state agencies, can host an open forum and present a unified front on broadband decisions. Participating volunteers at the Summit include 18 Task Force members for 4 hours per meeting with each valued at $67 per hour in Year 1 and 78 Local Technology Planning Team members for 8 hours per meeting each valued at $30 per hour in Year 2 for a total applicant contribution value of $254,464. Federal funding for these summits is estimated at $44,163.

Indirect Costs

The total projected indirect costs for the project are $121,065.

Estimated indirect cost rates will include but not be limited to the following types of costs:
- Support salaries, fringe benefits, and travel cost for personnel performing the functions of administration, human resources, finance, information technology, and education and awareness.
- Consultant costs and/or professional fees for functions listed above including but not limited to accounting and legal.
- Depreciation for general office equipment or items used for the functions listed above but not purchased with federal funds.
- Insurance and licenses.
- General office expense, supplies and miscellaneous items.
- General postage.
- Printing costs.
- Rent for support staff listed above.
- Utilities and repairs and maintenance.
- Telecommunication costs.