



**Broadband Infrastructure Application  
Submission to NTIA – Broadband Technology Opportunities Program**

<b>Submitted Date:</b> 3/26/2010 9:54:02 PM	<b>Easygrants ID:</b> 7648
<b>Funding Opportunity:</b> Broadband Technology Opportunities Program	<b>Applicant Organization:</b> NEVADA HOSPITAL ASSOCIATION
<b>Task:</b> Submit Application - BTOP	<b>Applicant Name:</b> Mr. Michael Pieper

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## A. General Application Information

Applicant Information	
Name and Federal ID for Applicant	
<b>DUNS Number</b>	081275752
<b>CCR # (CAGE)</b>	1JRJ9
<b>Legal Business Name</b>	NEVADA HOSPITAL ASSOCIATION
<b>Point of Contact (POC)</b>	EVA LABARGE 7758270184 Ext. eva@nvha.net
<b>Alternate POC</b>	EVA LABARGE 7758270184 Ext. eva@nvha.net
<b>Electronic Business POC</b>	ANGELA KRUTSINGER 7758270184 Ext. angela@nvha.net
<b>Alternate Electronic Business POC</b>	EVA LABARGE 7758270184 Ext. eva@nvha.net

Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
<b>Prefix</b>	Mr.
<b>First Name</b>	Michael
<b>Middle Name</b>	
<b>Last Name</b>	Pieper
<b>Suffix</b>	
<b>Telephone Number</b>	202-289-3792



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<b>Fax Number</b>	202-289-3792
<b>Email</b>	mike.pieper@rrpartners.com
<b>Title</b>	EVP, Government & Public Affairs

**Additional Contact Information of Person to be Contacted on Matters Involving this Application:**

Project Role	Name	Phone	Email
Secondary Point of Contact	Mr. Thomas , Reiman	7024057000	treiman@broadbandgroup.com
Secondary Point of Contact	Mr. Michael , Pieper	2024146161	mike.pieper@rrpartners.com
Secondary Point of Contact	Mr. Todd , Richard	7703257256	TRichard@altatelecom.com

**Environmental Point of Contact**

Prefix: Mr. Name: Pieper, Michael Suffix: Telephone Number: 2022895356 Title: Executive Vice President, Government & Public Affairs
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**Organization Classification**

<b>Type of Organization</b>	Non-profit Foundation
<b>Is the organization a small business?</b>	No
<b>Does the organization meet the definition of a socially and economically disadvantaged</b>	No



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<b>small business concern?</b>	
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<b>Authorized Organizational Representative</b>	
<b>AOR Name</b>	Welch, Bill
<b>Result</b>	Applicant Authorized

**Project Title and Project Description**

**Project Title:** Nevada Broadband Telemedicine Initiative

**Project Description:** The Nevada Hospital Association proposes to build and operate a high capacity statewide telemedicine network to be made available to medical providers who are required to demonstrate the meaningful use of electronic health records, with additional capacity for public safety agencies, educational institutions, Native American governments and select underserved areas.

**CCI Priority Checklist**

**The following items were selected from the CCI Priority Checklist:**

1. This project will deploy Middle Mile broadband infrastructure to community anchor institutions.
2. The project will deploy Middle Mile broadband infrastructure and has incorporated a public-private partnership among government, non-profit and for-profits entities, and other key community stakeholders.
3. This project will deploy Middle Mile broadband infrastructure in economically distressed areas.
4. This project will deploy Middle Mile broadband infrastructure to community colleges.
5. This project will deploy Middle Mile broadband infrastructure to public safety entities.
6. This project will deploy Middle Mile broadband infrastructure and either includes a Last Mile infrastructure component in unserved or underserved areas or has received commitments from one or more Last Mile broadband service providers to utilize the Middle Mile components. Any Last Mile components in rural areas do not exceed 20% of the total eligible costs of the project.
7. This project will deploy Middle Mile broadband infrastructure and the applicant has proposed to contribute 30 percent or more in non-federal cost match.



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**Comprehensive Community Infrastructure Components**

The following items were selected from the Comprehensive Community Infrastructure Components:

Middle Mile

**BIP Applicants**

Have you also applied to BIP for funding in the sample proposed funded service area?

- No

If Yes, please provide the project title and Easygrants ID number:

Title of Joint BIP Application:

Easygrants ID:

**Other Applications**

Is this application being submitted in coordination with any other application being submitted during this round of funding?

- Yes

Easygrants ID	Project Title
4769	Nevada Rural Broadband Access Project

If YES, please explain any synergies and/or dependencies between this project and any other applications.

The Nevada System of Higher Education (NSHE) operates and maintains a statewide data/video network known as NevadaNet. This network provides statewide data/video connectivity, Internet access and video conferencing services for Higher education and K-12 distance education programs, rural telemedicine, and clinical programs associated with the University of Nevada School of Medicine, Cooperative extension educational programs, libraries, Native American tribal educational, health, and legal programs associated with the NV Dept. of Corrections.



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NevadaNet infrastructure is also jointly shared with the Nevada Department of Transportation (NDOT) who supports public safety through its statewide first responder 2-way radio system and Intelligent Traffic Sign (ITS) programs that provide road condition and Amber Alert information. The Nevada Department of Information Technology (Do IT) also shares the infrastructure to support the connectivity needs of State and local government/law enforcement agencies. NevadaNet does not provide services to for-profit entities and is considered a private network. Together NSHE, NDOT and DoIT serve the key rural Community Anchor Institutions(CAI)and Critical Community Facilities(CCF) on a statewide basis utilizing a commercial based, but privately run network that has been put together to provide economical broadband transport/backhaul and video capability specifically to the CAI/CCF entities we are collectively charged to support. Wide area connectivity, Internet access and video conferencing services will be the main applications that will be available at no charge to the Community Anchor Institutions (CAI) and Critical Community Facilities(CFF)supported by NSHE middle mile infrastructure and accessed via dedicated commercial or private last mile infrastructure provided by the CAI/CFF institutions themselves. The Nevada Broadband Telemedicine Initiative (NBTI) will utilize elements of the NSHE NevadaNet for backhaul along the I-80 corridor. The four hospitals in this corridor do not currently have high speed, high capacity fiber connections to the NevadaNet system. NBTI plans to provide direct fiber connections for these facilities and use the NevadaNet facilities for backhaul purposes. In the area of the state south and east of Carson City NevadaNet does not currently have fiber broadband infrastructure. NBTI plans to build fiber broadband infrastructure to Gardnerville, Yerington,Fallon and Hawthorne which will provide NevadaNet with fiber capacity to serve local governments, university and emergency responders with improved levels of service. The two applications are not dependent upon each other for their independent success; however, it is the view of both applicants that funding of both projects will contribute very important functionality to both networks. However, NSHE will be unable to utilize a fiber broadband connection to Yerington and Hawthorne if NBTI is unfunded.

**Individual Background Screening**

Is the Applicant exempt from the Department of Commerce requirements regarding individual background screening in connection with any award resulting from this Application?

- No, Applicant is subject to these requirements



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If the answer to the above question is "No," please identify each key individual associated with the Applicant who would be required to complete Form CD-346, "Applicant for Funding Assistance," in connection with any award resulting from this Application:

<b>Name</b>	<b>Title</b>	<b>Employer</b>
Bill Welch	President	Nevada Hospital Association

## **B. Executive Summary, Project Purpose and Benefits**

### **Essay Question**

#### **Executive Summary of the proposed project:**

The Nevada Hospital Association (NHA) consisting of 33 acute care providers and 18 specialty hospitals and clinics throughout the state of Nevada proposes to construct a state-wide medical network, the primary purpose of which is to facilitate telemedicine applications and allow for the meaningful use of electronic health records as is required under the HITECH Act enacted as part of the American Recovery and Reinvestment Act. Nevada lacks the broadband infrastructure necessary for the medical community to take full advantage of most telemedicine applications or the exchange of medical information among all health providers. All of Nevada's hospitals currently have some level of access to the internet, however, the quality of the connections varies dramatically and there is little or no reliability or redundancy. With the requirement that all medical providers demonstrate the meaningful use of electronic health records by 2016, Nevada's medical community is faced with an insurmountable obstacle unless the network proposed in this grant application can be built. The current haphazard connectivity between those who have sufficient funding and information technology resources and those who can't afford or do not have access to a high-speed, high-capacity broadband network is likely to continue for some time. The community anchor institutions to be served by the proposed network are located throughout the state of Nevada. The service area of the network includes communities in 16 of Nevada's 17 counties. The project anticipates using existing broadband capacity where possible and deploying 10 new fiber segments offering both 100 Mb and 1 Gb of capacity to each of the



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targeted anchor institutions throughout the state. The NHA has titled this project the Nevada Broadband Telemedicine Initiative, (NBTI). The Nevada Hospital Association board has endorsed the application for BTOP funding and fully supports the establishment and operation of the NBTI. Members of the NHA have been partners in an existing telemedicine network using the NevadaNet since the mid-1990's. The NBTI seeks to follow in the footsteps of several other state medical networks, such as Washington State's NoaNet, which was awarded funding in Round 1. Utilizing the network of hospitals throughout the state as the platform for constructing a state-wide broadband network is a logical and efficient solution to the lack of adequate broadband service throughout the state. The applicant has worked to establish partnerships with key players throughout the state, including the Nevada System of Higher Education, the University of Nevada School of Medicine, several Native American Tribes, the Nevada Indian Health Board, the Nevada Rural Health Partners, and the Arizona Nevada Tower Corporation. The network will provide direct access for 37 community anchor institutions from among Nevada's hospitals with the potential to grow well beyond this number as other medical facilities and medical practices come on board. The NHA has secured letters from several public safety entities who also wish to utilize the middle mile network NBTI will provide. The NHA has reached out to all the Native American Tribes through a partnership with the Nevada Indian Health board to offer access to the network for the 23 tribes and their affiliated health facilities scattered throughout the state. Through NBTI's partnership with the University of Nevada School of Medicine and the Nevada Department of Higher Education, the network to be constructed will allow several community colleges and units of the Nevada University system broadband access to areas currently underserved. By focusing on the states acute care medical providers, the NBTI project will serve some of the most vulnerable populations in the state. Through a partnership with the Indian Health Board the project will improve access to medical care on reservations such as the Duckwater Shoshone in remote central Nevada. Key partners in our network include Renown Regional Medical Center in Reno and the University Medical Center in Las Vegas, a non-profit publicly owned hospital. UMC is the number one provider of medical services to the poor and uninsured in the state of Nevada. Renown Regional Medical Center in Reno also serves a large proportion of uninsured, poor and disadvantaged clients. The NHA will own and manage the network and provide service to health facilities in a manner that will provide the maximum level of data security and network reliability. As the owner and operator of the NBTI, the Nevada Hospital Association will determine the terms of use by its members and outside entities who desire access. The NHA has received a letter of interest from Axia Netmedia Corporation to provide funding for the initial construction of the network and to serve as the network operator. Axia has the depth of experience and financial stability necessary



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to guide the construction and operation of the network and establish the business functions necessary for a sustainable operation. A key component to financial success of the network will be the on-going wholesale leasing of excess capacity by Axia. The NHA is made up of both public and private institutions some of whom have made considerable investments in broadband technology. The application anticipates using this existing infrastructure to complete components of the network. Nevada's existing network does not offer last mile fiber connectivity to the rural hospitals that will be participating in the NBTI. The NBTI project will provide a direct link to the existing NevadNet middle mile network. In communities such as Lovelock, Winnemucca, and Battle Mountain hospitals that currently rely on limited connectivity (Battle Mountain currently has 10Mb) will have 24/7 access to the NBTI 1 Gp network. This will be made possible through a partnership with the Nevada System of Higher Education and the University of Nevada School of Medicine. In areas where no fiber middle mile currently exists, such as Pahrump, Fallon, Hawthorne, Yerington and Gardnerville, the Nevada System of Higher Education will utilize middle mile fiber that will be built by the NBTI. Through a partnership with Arizona Nevada Tower Corporation high speed access will reach areas where a fiber build is not practical, such as Caliente, Nevada and the Duckwater Shoshone Tribe in central Nevada. The cost of the project is \$29.7 million to provide a semi-dedicated Healthcare Network, with enhanced security and increased capacity, in addition to a proposed new middle mile 48-count Fiber Optic cable that will be used for dedicated Nevada Healthcare participants and their sponsored partners. The approach is to light dark fiber as required for the existing locations that have alternative last mile connections and expand the fiber to reach those rural areas where alternative high speed data may not be available. The project includes a bundled Electronic Health Records solution for the NHA members who have been unable to invest in their own EMR systems. Through use of a bundled application package NHA anticipates lower costs to member hospitals while generating operating income through the management fees charged to users of the system. This functionality is essential for success of the HITECH Act for meaningful use of electronic health records. The NBTI network will reach 6 communities that do not currently have access to a middle mile high speed broadband network: Pahrump, Boulder City, Fallon, Hawthorne, Yerington and Gardnerville. The long term viability of the network is dependent on the ability to connect to last mile providers in these communities and generate wholesale fees. NBTI has acquired letters of interest from last mile providers in several of these communities. NHA's partner, Axia will manage the wholesale operations, the revenue of which will provide a return on their investment and assist in covering operational costs. The NHA believes that an investment in a state-wide medical network will help sustain and create jobs in one of the nation's hardest hit economies. Nevada and Clark County in particular has been severely impacted by the recent recession.



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Unemployment rates have exceeded 18% in some areas, with the state-wide average now at 13.2%. The health sector in Nevada employed 94,070 individuals living in the state of Nevada in 2007. As one of the largest employment sectors in the state, the infusion of millions of dollars of investment should result in much needed job growth. Nevada's construction industry has been hit the hardest by the recession. We anticipate creating construction jobs in some of the hardest hit areas through the deployment of fiber plant in Douglas, Lyon, Mineral, Nye and Clark Counties. We estimate 103 direct jobs, 103 indirect jobs and 116 jobs induced.

The NBTI of the Nevada Hospital Association is designed to meet all the major objectives of the BTOP grant.

**Project purpose:**

According to a report prepared by the University of Massachusetts Medical School Center for Health Policy and Research there are five critical elements for success of a Health Information Exchange.

1. Engagement of key public and private healthcare stakeholders.
2. A formal organizational governance structure that is representative of stakeholders.
3. A technical architecture that facilitates electronic HIE.
4. Identified data sources, transaction types, and standards for exchange, security, and privacy.
5. Financing to support development and operations of electronic HIE.

The purpose of the Nevada Broadband Telemedicine Initiative is to address three of the five elements necessary for successful deployment of HIE. The Nevada Broadband Telemedicine Initiative seeks to 1) Engage key public and private healthcare stakeholders, 2) provide a technical architecture that facilitates electronic HIE and 5) provide financing to support development and operations of electronic HIE. As a following on to the assistance provided by the BTOP grant, NHA will work with our community partners and the Nevada Blue Ribbon Task Force on Health Information Technology to establish the formal organizational governance structure and technical standards necessary for successful implementation of a Nevada electronic HIE. The NBTI will provide high speed connectivity between medical providers throughout the state of Nevada and assist those providers in fulfilling the requirements of the HITECH Act. The requirement that all health providers demonstrate the meaningful use of electronic health records requires that all providers be able to exchange medical records electronically by 2016. The Department of Health and Human Services is developing standards to determine the meaningful use of electronic health records that will be required of Medicaid/Medicare providers in order that they may receive incentive payments for implementation of electronic health records



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systems. The HITECH Act asks that providers invest considerable capital in the purchase and management of EHR systems with the expectation that incentive payments will assist in deferring the costs of such systems. Without an adequate network to exchange data in Nevada, many medical providers will not receive incentive payments and will not choose to invest in EHR systems as envisioned in the HITECH Act. The Nevada Broadband Telemedicine Initiative is unique in its approach to using BTOP funds to meet the requirement of the HITECH Act. Without access to BTOP funding it is highly doubtful many medical providers in Nevada will meet the meaningful use requirements within the timeframes required. Additionally, there are rural health providers in Nevada that currently have limited broadband access that is not sufficient to transmit critical patient information electronically. A network as envisioned by this proposal would vastly increase access to care in remote areas of the state. It is anticipated that the network as planned will greatly increase the quality of medical care in rural and remote areas. The network is designed with excess capacity that will allow for leased use by public safety, education and Native American governments as well as last mile service providers. The NHA has provided letters of interest and support for the funding of this network from organizations representing these groups.

**Recovery Act and Other Governmental Collaboration:**

The Nevada Broadband Telemedicine Initiative is specifically designed to address the requirements contained in the HITECH Act. The purpose of the Nevada Telemedicine Broadband Initiative is to provide high speed connectivity between medical providers throughout the state of Nevada and assist those providers in fulfilling the requirements of the HITECH Act. The HITECH Act asks that providers invest considerable capital in the purchase and management of Electronic Medical Record systems with the expectation that incentive payments will assist in deferring the costs of such systems. Without an adequate network to exchange data in Nevada, many medical providers will not receive incentive payments and will not chose to invest in EMR systems as envisioned in the HITECH Act. The Nevada Broadband Telemedicine Initiative proposes to allow medical providers to comply with meaningful use standards of the HITECH Act. The proposed Stage 1 criteria for meaningful use focus on electronically capturing health information in a coded format, using that information to track key clinical conditions, communicating that information for care coordination purposes, and initiating the reporting of clinical quality measures and public health information. The proposed network will provide the functionality necessary to meet these criteria as required under Stage 1 and more importantly meet the anticipated Stage 2 and 3 criteria as they are developed by the Department of Health and Human Services. The Initiative has been endorsed by the Nevada Health Information



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Technology Taskforce and will be integral to implementation of the Nevada Health Information Exchange Cooperative agreement funding which has been provided to the Nevada Department of Health. These funds have been made available to the State of Nevada to establish and implement appropriate governance, policies and network services with the broader national framework to build connectivity between and among health care providers. Without the NBTI network the funds being used by the State of Nevada under the Cooperative Agreement Program will not meet with the desired outcome of establishing a state HIE. The NBTI has been in discussion with the State of Nevada Department of Health and Human Services, the recipient of grant funding under the Health Information Exchange Extension Program. The Extension Program provides grants for the establishment of Health Information Technology Regional Extension Centers (Regional Centers) that will offer technical assistance, guidance and information on best practices to support and accelerate health care providers' efforts to become meaningful users of Electronic Health Records (EHRs). The stated purpose of this program is to provide for the consistent, nationwide adoption and use of secure EHRs that will ultimately enhance the quality and value of health care.

**Fit with BTOP CCI Priorities:**

- (1) The primary purpose of the Nevada Broadband Telemedicine Initiative is to serve hospitals and medical facilities all of which are community anchor institutions. The project is designed to serve the 37 medical facilities identified in the grant with access made available to public safety entities, educational institutions, and Native American Governments.
- (2) The targeted community anchor institutions are comprised of both private and public facilities. The Nevada Hospital Association is a non-profit organization that will be partnering with its for-profit and non-profit members to build operate and maintain the network. The cash match for the project is being provided by a private equity investor, Axia NetMedia Inc. a publicly traded corporation.
- (3) Lack of sufficient medical care is a considerable obstacle to economic growth in rural Nevada. Clark County Nevada, while the most populated county in Nevada also suffers from one of the highest unemployment rates in the nation. The program anticipates the creation of new opportunities in the medical technology industry in Las Vegas as well as throughout the state where unemployment rates currently exceed 13%.
- (4) The Nevada System of Higher Education has agreed to partner with the NBTI to provide service to Nevada's Community College system, University System and School of Medicine.
- (5) NHA has offered access to public safety entities throughout the state. Letters of support are attached.



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(6) By building the Nevada Broadband Telemedicine Initiative to underserved areas we anticipate requests for last mile connections in several communities: W currently have letters of interest from several last mile broadband service providers.

(7) The applicant has secured 30% of the cost of the project through in-kind services and through outside investors.

**Is the applicant seeking a waiver of the Buy American provision pursuant to section x.Q of the NOFA?**

- No

**Is the applicant delinquent on any federal debt?**

- No

If Yes, justification for delinquency:

**Are you seeking a waiver of any requirement set forth in the NOFA that is not mandated by statute or applicable law?**

- No

**Is the applicant a current recipient of a grant or loan from RUS?**

- No

## C. Partners

**Are you partnering with any other key institutions, organizations, or other entities for this project?**

- Yes

If YES, key partners are listed below:

Project Role: Other Name: Anderson, Edward Phone: 7757893710 Email: eandrsn@nevada.edu Address 1: Computer Center Building 270 Address 2: Address 3: City: Reno State: Nevada
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<p>Zip Code: 89557          Organization: Nevada System of Higher Education          Organization Type: State or State Agency          Small business: No          Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Other          Name: Keith, Robin          Phone: 7758274770          Email: robin@nrhp.org          Address 1: 4600 Kietzke Lane          Address 2:          Address 3:          City: Reno          State: Nevada          Zip Code: 89502          Organization: Nevada Rural Hospital Partners          Organization Type: Non-profit Association          Small business: No          Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Third party in-kind contributor          Name: Silver, Kathleen          Phone: 7023832000          Email: gail.yedinak@umcsn.com          Address 1: 1800 W. Charleston Blvd.          Address 2:          Address 3:          City: Las Vegas          State: Nevada          Zip Code: 89102          Organization: University Medical Center          Organization Type: County Government          Small business: No          Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Third party in-kind contributor          Name: Scott, Tim          Phone: 9782041452          Email: Tim.scott@axia.com          Address 1: 500 Maplehurst Drive,          Address 2:</p>



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Address 3:  
City: Highlands Ranch  
State: Colorado  
Zip Code: 80126  
Organization: Axia Netmedia Corporation  
Organization Type: For-profit Entity  
Small business: No  
Socially and economically disadvantaged small business concern: No

Project Role: Other  
Name: Curley, Larry  
Phone: 7752843290  
Email: Larry\_curley2@hotmail.com  
Address 1: 1325 Airmotive Way, Ste 250  
Address 2:  
Address 3:  
City: Reno  
State: Nevada  
Zip Code: 89502  
Organization: NV Indian Health Board  
Organization Type: Indian Tribe  
Small business: No  
Socially and economically disadvantaged small business concern: No

**Description of the involvement of the partners listed above in the project.**

1. Nevada Rural Health Partners: The mission of NRHP is to improve the viability of member hospitals through shared services, resources, and advocacy. NRHP was initially funded by The Robert Wood Johnson Foundation as part of its "Hospital-Based Rural Health Care Program." The goals of that program were to improve the viability of rural hospitals, improve access to healthcare for rural residents, and to improve the quality of health services in rural areas. There are now twelve regular NRHP members and two associate NRHP Foundation members. The Nevada Rural Health Partners member hospitals will also be members of the Nevada Broadband Telemedicine Initiative. The NRHP has assisted its members with their telemedicine network needs and will continue to work closely with the NBTI to coordinate its members use of the new network. 2. Nevada Indian Health Board: The mission of the Indian Health Board of Nevada is to raise the health care status of Nevada Indians. The health board provides Nevada Tribal leaders with the information they need to make decisions in support of their advocacy for full funding



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for Indian health programs. Examples include support for budget formulation with the Indian Health Service, the Congress and the Administration; support for consultation with federal agencies concerned with health care-especially the Indian Health Service. The members of the Indian Health board are the medical directors of the 23 tribal health facilities throughout the state of Nevada. The NBTI has established a working relationship with the tribal health facilities through the board. The NBTI will allow access to the network by each of the 23 tribal health facilities as network infrastructure allows. 3. Nevada System of Higher Education: The Nevada System of Higher Education (NSHE) currently operates NevadaNet which provides broadband service to many of the Nevada hospitals. In 1970, the Board of Regents of the Nevada System of Higher Education (NSHE) founded NevadaNet with support from the National Science Foundation (NSF) to provide high-speed telecommunications infrastructure for research and use by higher education within the State of Nevada. NevadaNet currently operates a statewide digital network supporting various voice, data and video applications. The role of NevadaNet expanded in the mid 1990's when the legislature provided for the inclusion, to a limited degree, of the rural K-12 educational community within the scope of the NevadaNet mission. By the late 1990's the role of NevadaNet had expanded to also include support of telemedicine and rural health initiatives throughout the state. While not its primary mission, NevadaNet also provides support to other nonprofit state and local public service entities on a case-by-case basis. The NBTI has secured an agreement with the NSHE to share resources and utilize the backhaul capacity that exists on the NevadaNet. The network is comprised of a high-speed backbone network connecting main hub locations in Reno, Carson City, Elko, and Las Vegas. From these main hub locations, radial spur circuits extend to numerous communities throughout the state. The NBTI anticipates a long and beneficial relationship with NSHE providing access to community colleges and other NSHE institutions in areas of the state where NSHE does not have upgraded facilities that match the capabilities of the NBTI fiber plant. University of Nevada School of Medicine as the state's only public medical school, the University of Nevada School of Medicine works to meet Nevada's state-wide health care, academic and clinical needs since its founding in 1969. The school includes 16 clinical departments and five nationally recognized basic science departments. The school also serves as the home to many community health care outreach programs. NBTI has formed a partnership with the Nevada School of Medicine to allow access to NBTI's network and to facilitate communication with Nevada health providers and educators. The School of Medicine currently relies on NevadaNet for telemedicine applications involving hospitals. With the development of the NBTI network the school will have faster and redundant systems to serve their telemedicine needs. 4. University Medical Center: University Medical Center is a Clark County owned public hospital. UMC plans to contribute equipment and



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expertise to be used in the NBTI network. As the largest trauma center in the region, UMC will utilize the NBTI network to provide telemedicine services across the region. 5. Axia Netmedia Corporation. Axia will bring its capabilities and operational expertise to NHA and the Nevada Broadband Telemedicine Initiative project similar to projects other parts of the world. Axia forms a close partnership with the respective entity and commits to long term renewable engagements typically ranging from initial terms of 10 to 25 years. Axia typically invests its own capital to ensure the project remains sustainable and is a viable initiative. In the case of NBTI the commitment will be for the 30% match to deploy the network. Axia's various global engagements have in many ways already proven that the NHA suggested approach is a viable one. In addition to the services and planning skills Axia will bring to the Nevada Broadband Telemedicine Initiative, as part of Axia's un-conflicted wholesale NGN operator role, they also have a Network Operations Center (NOC) that is available and ready to support clients and service providers in Nevada. Perhaps the most valuable potential contribution to the Nevada Broadband Telemedicine Initiative, are the numerous lessons learned that Axia has gained from its first hand experience at planning, deploying, operating and ensuring that these government facilitated NGNs remain sustainable in the long term.

## **D. Congressional Districts**

### **Applicant Headquarters**

- Nevada

### **Project Service States**

Nevada

### **Project Service Areas**

Nevada - 1

Nevada - 2

Nevada - 3



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**Will any portion of your proposed project serve federally recognized tribal entities?**

➤ Yes

**Indicate each federally recognized tribal entity your proposed project will serve.**

Battle Mountain Band Council

Carson Community Council

Dresslerville Community Council

Duckwater Tribal Council

Elko Band Council

Ely Shoshone Tribe

Fallon Paiute Shoshone Tribe

Fort McDermitt Tribal Council

Las Vegas Tribal Council

Lovelock Tribal Council

Moapa Business Council

Pyramid Lake Paiute Tribal Council

Reno-Sparks Tribal Council

South Fork Band Council

Stewart Community Council

Summit Lake Paiute Tribe

Te-Moak Tribe of Western Shoshone



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Walker River Paiute Tribal Council

Washoe Tribal Council

Wells Band Council

Winnemucca Tribal Council

Yerington Paiute Tribe

Yomba Tribal Council

Shoshone-Paiute Business Council

**Have you consulted with each of the federally recognized tribal entities identified above?**

- Yes

## E. Service Area Details

**Is the applicant seeking a waiver for providing less than 100% coverage of a service area?**

- Yes

### Project Details

**Service Area Type:** Middle Mile  
**Service Area Name:** Banner Churchill Community Hospital – Census Tract 9503  
**Rural Classification of the Last Mile Service Area:** Rural  
**Service Status of the Last Mile Service Area:** Underserved

**If Service Status is "Underserved" please select at least one applicable option from this list.**

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.



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**Total Square Miles in Service Area:** 4  
**Total Population in Proposed Service Area:** 7,536  
**Total Number of Households in Service Area:** 3,004  
**Total Number of Businesses in Service Area:** 125  
**Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area:** 7  
**Unemployment Rate in the Service Area:** 12  
**Median Income in the Service Area:** 35,935  
**Estimated Percentage of Households with Access to Broadband:** 50  
**Estimated Percentage of Households Subscribing to Broadband:** 40

**Service Area Type:** Middle Mile  
**Service Area Name:** Boulder City Hospital – Census Tract 55.04  
**Rural Classification of the Last Mile Service Area:** Rural  
**Service Status of the Last Mile Service Area:** Underserved

<p><b>If Service Status is "Underserved" please select at least one applicable option from this list.</b></p> <p>No fixed or mobile broadband service provider advertises broadband transmission speeds of at least 3 mbps downstream in the proposed funded service area;</p> <p>The rate of broadband subscribership for the proposed funded service area is 40% of households or less.</p>
---

**Total Square Miles in Service Area:** 207  
**Total Population in Proposed Service Area:** 13,966  
**Total Number of Households in Service Area:** 14,716  
**Total Number of Businesses in Service Area:** 128  
**Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area:** 3  
**Unemployment Rate in the Service Area:** 13  
**Median Income in the Service Area:** 50,523  
**Estimated Percentage of Households with Access to Broadband:** 65  
**Estimated Percentage of Households Subscribing to Broadband:** 30



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**Service Area Type:** Middle Mile  
**Service Area Name:** Carson Valley Medical Center – Census Tract 5.01  
**Rural Classification of the Last Mile Service Area:** Rural  
**Service Status of the Last Mile Service Area:** Underserved

<b>If Service Status is "Underserved" please select at least one applicable option from this list.</b>
No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;
No fixed or mobile broadband service provider advertises broadband transmission speeds of at least 3 mbps downstream in the proposed funded service area;
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles in Service Area:** 5  
**Total Population in Proposed Service Area:** 14,411  
**Total Number of Households in Service Area:** 14,263  
**Total Number of Businesses in Service Area:** 24  
**Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area:** 7  
**Unemployment Rate in the Service Area:** 15  
**Median Income in the Service Area:** 41,204  
**Estimated Percentage of Households with Access to Broadband:** 50  
**Estimated Percentage of Households Subscribing to Broadband:** 30

**Service Area Type:** Middle Mile  
**Service Area Name:** Mt. Grant General Hospital – Census Tract 9706  
**Rural Classification of the Last Mile Service Area:** Rural  
**Service Status of the Last Mile Service Area:** Underserved

<b>If Service Status is "Underserved" please select at least one applicable option from this list.</b>
No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;
No fixed or mobile broadband service provider advertises broadband transmission speeds of at least 3 mbps downstream in the proposed funded service area;



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The rate of broadband subscribership for the proposed funded service area is 40% of households or less.
---

**Total Square Miles in Service Area:** 2  
**Total Population in Proposed Service Area:** 33,111  
**Total Number of Households in Service Area:** 3,290  
**Total Number of Businesses in Service Area:** 3  
**Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area:** 6  
**Unemployment Rate in the Service Area:** 13  
**Median Income in the Service Area:** 34,413  
**Estimated Percentage of Households with Access to Broadband:** 50  
**Estimated Percentage of Households Subscribing to Broadband:** 30

**Service Area Type:** Middle Mile  
**Service Area Name:** Desert View Hospital Census  
**Rural Classification of the Last Mile Service Area:** Non-Rural  
**Service Status of the Last Mile Service Area:** Underserved

<b>If Service Status is "Underserved" please select at least one applicable option from this list.</b> The rate of broadband subscribership for the proposed funded service area is 40% of households or less.
---

**Total Square Miles in Service Area:** 290  
**Total Population in Proposed Service Area:** 36,390  
**Total Number of Households in Service Area:** 36,390  
**Total Number of Businesses in Service Area:** 200  
**Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area:** 6  
**Unemployment Rate in the Service Area:** 16  
**Median Income in the Service Area:** 40,669  
**Estimated Percentage of Households with Access to Broadband:** 35  
**Estimated Percentage of Households Subscribing to Broadband:** 65



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**Service Area Type:** Middle Mile  
**Service Area Name:** South Lyon Medical Center – Census Tract 9607  
**Rural Classification of the Last Mile Service Area:** Rural  
**Service Status of the Last Mile Service Area:** Underserved

**If Service Status is "Underserved" please select at least one applicable option from this list.**  
 The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles in Service Area:** 2  
**Total Population in Proposed Service Area:** 2,883  
**Total Number of Households in Service Area:** 2,755  
**Total Number of Businesses in Service Area:** 3  
**Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area:** 11  
**Unemployment Rate in the Service Area:** 18  
**Median Income in the Service Area:** 31,151  
**Estimated Percentage of Households with Access to Broadband:** 60  
**Estimated Percentage of Households Subscribing to Broadband:** 35

## F. Community Anchor Summary

Community Anchor Summary	
Schools (k-12)	0
Libraries	0
Medical and Healthcare Providers	37
Public Safety Entities	0
Community Colleges	0
Public Housing	0
Other Institutions of Higher Education	0
Other Community	0



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<b>Support Organization</b>	
<b>Other Government Facilities</b>	0
<b>TOTAL COMMUNITY ANCHOR INSTITUTIONS</b>	37
<b>Historically Black colleges and Universities</b>	0
<b>Tribal Colleges and Universities</b>	0
<b>Alaska Native Serving Institutions</b>	0
<b>Hispanic Serving Institutions</b>	0
<b>Native Hawaiian Serving Institutions</b>	0
<b>TOTAL MINORITY SERVING INSTITUTIONS</b>	0

## G. Project Benefits

### Demographics

Jobs	
<b>How many direct jobs-years will be created from this project?</b>	103
<b>How many indirect jobs will be created from this project?</b>	103
<b>How many jobs will be induced from this project?</b>	116

**Methodology used to estimate jobs:**

According to the document referenced in the application guide, approximately one job year is created for every \$92,000 in government spending, roughly 64% of which applies to direct and indirect jobs (together) and 36% of which applies to induced jobs.



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Since our budget is \$29.7M, we applied the above value and percentages to determine the creation of 206 direct & indirect job years and 116 induced job years.

To split the direct & indirect jobs, we examined our detailed budget. We've counted direct as labor (construction, professional services) and indirect as equipment (electronics and materials). Approximately half of our budget is for labor and half is for equipment so we split direct and indirect evenly (103/103).

Please note that while we split direct and indirect evenly and the job years in each category is roughly a third of the total, this is pure coincidence. Our method is more vigorous than a casual observation would indicate.

Please note that we have used the entire project budget to determine job creation since the project would not have occurred without government funding. If it were more appropriate to use just government funding in the calculation (exclude private investment), the number of job years would be 30% lower (by eliminating the 30% match funds). Since our match is mostly equipment, eliminating private funding from the calculation would have a disproportionate reduction in indirect job years created.

**Project Impact:**

The NBTI network is designed to serve acute care hospitals, medical clinics and specialty hospitals throughout the state of Nevada. We have identified 37 institutions that have either expressed a desire for service or that are potential customers of the network. In addition to the 37 institutions we have identified 10 Native American clinics that may be interested in having access to the network. The Network will be operated by the Nevada Hospital Association whose members include 51 medical facilities, all of whom are potential customers of the network. The application for the grant has been endorsed by the Nevada Hospital Board of Directors. We have received letters of intent from (NEED NUMBER) of the members.

**Vulnerable Populations:**

Through NBTI's partnership with the University of Nevada School of Medicine and the Nevada Department of Higher Education, the network to be constructed will allow several community colleges and units of the Nevada University system broadband access to areas currently underserved. The NBTI project will serve some of the most vulnerable populations in the state. Through a partnership with the Indian Health Board the project will improve access to medical care on reservations such as the Duckwater Shoshone in remote central Nevada. Key partners in



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our network include Renown Regional Medical Center in Reno and the University Medical Center in Las Vegas, a non-profit publicly owned hospital. It is the number one provider of medical services to the poor and uninsured in the state of Nevada. Renown Regional Medical Center in Reno also serves a large proportion of uninsured, poor and disadvantaged clients.

**Level of Need:**

In a recent article<sup>1</sup>, by Stacey Higginbotham Feb. 23, 2010, the U.S. is said to be behind when it comes to using technology in medical care. In the article, Stacey writes; “The move ties in nicely with a chat I had yesterday with Dr. Mohit Kaushal, director of health care for the FCC’s Broadband Strategy Initiative, about encouraging broadband use in medical care.” Dr. Kaushal, said there are reasons why doctors are at fault for not practicing with technology and blames the lack of implementation of technology is due in part by Medicare and other government-sponsored health programs not stepping up to fund the cause. Dr. Kaushal, goes on to say; “Plus, in many areas, especially rural ones where physicians are scarce, the broadband network just isn’t up to speed. The Mayo Clinic/Intel study will involve video conferencing between patients and doctors to ascertain patient fitness — something that could benefit from better broadband and even HD quality”. In a presentation before the FCC last week, Dr. Kaushal said that using e-care could save \$700 billion over the next 15-20 years. One of the problems with implementation is the requirement for bandwidth, not only on the backhaul transport between distant facilities, but also at the middle mile locations such as hospitals. Many rural doctors practice medicine in private offices and use the local hospital for their outpatient, urgent care and for major procedures requiring extended care facilities. Upon reviewing the surveys of more than 50 hospitals in Nevada, more than 50% of the facilities responded, with several rural respondents noting that they would increase their bandwidth to improve operations if only the capacity was available beyond the metro area. If capacity was available, such as in the Carson Tahoe area, 40Mbps of bandwidth over fiber cost one facility over \$5,000 per month. This is consistent with several sample costs from providers in metro areas where they can pay as much as \$3,900 for Metro-E service. The availability of dark fiber in Nevada is also very scarce, and if available, very expensive to justify only a single or two hospitals paying more than \$15,000 per month (American Fiber Systems (AFS), Reno to Las Vegas) just to have access to dedicated fiber. It would be unreasonable to expect a large non-profit hospital, such as UMC, which services the Clark county region in Las Vegas, to try to justify dark fiber costs just so they could provide sufficient capacity to communicate with the smaller hospitals located in the central Nevada area in an effort to provide Telemedicine services, like interactive video and stroke therapy video applications. There are about 21 service providers passing through Las Vegas, however, many of the backhaul routes from major carriers do not even drop capacity in the Super NAP in southern



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Las Vegas. The same is true about the northern I-80 corridor route heading east from Reno to Elko. NHA has been successful in securing access to dark fiber between Reno and Las Vegas, and will light the fiber with at least 1 x 10Gig channel to provide backhaul between the north and south data centers. NHA was also able to secure available capacity from Reno to Elko through a partnership with the Nevada Net group, ensuring that NHA will be able to provide high bandwidth capacity (40 Mbps) between the hospital and school of medicine in Elko. Dr. Soon-Shiong is the Executive Chairman and Chief Executive Officer of Abraxis Health. He was recently appointed Executive Director of the UCLA Wireless Health Institute, and is Professor of Microbiology, Immunology, and Molecular Genetics Professor of Bioengineering at UCLA. Dr. Soon-Shiong is a strong proponent of the advancement of technology in the medical industry, especially when it comes to allowing the patient and doctors access to records in real time. We plan to work with Dr. Soon-Shiong's group to help implement a interchange of records safely through encryption and allow caregivers to obtain records without jeopardizing your personal information. Video Link: <http://3gdoctor.wordpress.com/2010/01/02/dr-patrick-soon-shiong-describes-a-mhealth-future-with-cnbc/> In past years, a dedicated DS-3/T3 providing about 44.7Mbps of capacity with about 35 Mbps of usable bandwidth, was required to pass interactive video applications. Today the advances in digital video technology and improved ability to pass video traffic in Ethernet frames has reduced the need for a T3 circuit, which is cost prohibitive and not readily available in rural Nevada. The NHA has determined that with a service delivery of 40Mbps of capacity, they would be able to allocate about 50% of the bandwidth, or 20Mbps for business operations and internet peering, and allow for the other 50% to be used to support Electronic Health Records (EMR) and introduce interactive telemedicine applications such as interactive video for stroke therapy and other advanced technologies needed in even the remote areas of Nevada.

## H. Technology

### Technology Type

**Indicate the technology that will be used to deliver last mile services. The following items were selected:**

Wireline - Fiber-optic Cable

Wireless - Terrestrial Fixed



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Other:

**Technology Questions**

**Methodology for Area Status:**

- The rural locations are considered in an underserved Middle Mile Service Area, where NHA has reviewed the Middle Mile Service Area as it relates to the individual Census block groups.

**Description of Network Openness:**

NHA shall comply with the guidelines regarding nondiscrimination and interconnection; Because of the private nature of the health information service data the public access detailed within the FCC 05-151 Policy regarding Net Neutrality will not directly apply. Across the private infrastructure health care facility administrators will have the ability to purchase direct Internet access from Internet Service Providers available through the fiber access network utilized for Electronic Health Exchange. Across the fiber optic backbone infrastructure each hospital facility will have the ability to lease Internet Service Service from any available national carrier. Examples of these service providers include XO Communications, SAVVIS Communications, Level3, AT&T, Verizon Business and Sprint. Each partner NHA facility will have the ability to choose the most cost effective and reliable Internet Service platform that immediately fits the needs of the facility. NHA will provide NOC services to monitor and manage the exchange of health information services to ensure that any potential outage or degradation of service is immediately addressed. The support organization will monitor each network element and network circuit to ensure that all provisioned bandwidth is available for the distribution of mission critical data. There will also be Quality of Service deployed throughout the network to ensure that critical applications have the necessary bandwidth available for time sensitive data transfers such as remote diagnostic and training applications. Across the private infrastructure health care facility administrators will have the ability to purchase direct Internet access from Internet Service Providers available through the fiber access network utilized for Electronic Health Exchange. The NHA core backbone will provide direct interconnection to multiple Network Access Points (NAP) or Collocation facility that provided direct interconnection to numerous National internet service companies. The network administrator for each NHA partner organization will have the option of service provider access through well known facilities in Las Vegas, Reno and Carson City. Examples of these types of NAP or Collocation facility include SuperNAP in the Las Vegas Market that provides service to 360 Networks, TW Telecom, Sprint, AT&T, Verizon Business, XO Communications and many other



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national carriers. These options will be provided to each member facility that will utilize the fiber optic access backbone provided by NHA.

**System Design:**

The Technical Team has developed a network design with QOS standards, security policies, Bill of Materials (BOM), and installation guidelines for NHA member facilities. The following activities will be conducted and coordinated with the NHA member IT staff, and (where applicable) Service Provider engineering resources:

- Initiate Network design for providers building and operating terrestrial facilities for NHA.
- Process development for operations & service support.
- Ensure capacity for future healthcare applications.
- Identify and engineer facilities to areas with inadequate infrastructure.
- Secure revenues, lease, or access rents for telecommunications centers.
- Backbone Network Request For Proposal (RFP) creation, distribution, & response review.
- Conduct Service Provider negotiations and contract initiation.
- Complete Network architecture review meeting with NHA.
- Draft Service Level Agreements (SLA).
- Develop customer service processes for installation & operation of services.
- Focus on Project Viability Portion of Application.
- Interconnection Agreements.

The Healthcare Network: This is a semi-dedicated Healthcare Network, with enhanced security and increased capacity, in addition to a proposed new middle mile 48-count Fiber Optic cable that will be used for dedicated Nevada Healthcare participants and their sponsored partners. The approach is to light dark fiber as required for the existing locations that have alternative last mile connections and expand the fiber to reach those rural areas where alternative high speed data may not be available.

**Network Topology and Background Information**

Network electronics will include three distinct functions described here.

1. The transport network shall consist of the capacity to light multiple Gig-E optical fibers between Las Vegas and Reno, NV, using WDM or similar equipment or technology. The



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Backhaul design approach shall enable the Las Vegas Data Center to offer interconnection to existing leased capacity or options to light dark fiber. All necessary Core routers and aggregation routers will be primarily located in the Las Vegas Data Center, with a redundant approach in the Reno, NV Data Center location. The IP network shall consist of Layer 3 routers and switches that create a network of connections that home to core routers that enable routes among the hospitals and to other internal hospitals and external entities such as the Central exchange network, Internet, and other peering portals as required.

2. The Medical Network shall consist of SNMP Based alarm monitoring with logging capability at each site with out of band access either through POTS lines or cellular modems. A brief description of the logical connectivity follows, along with specifications for the individual components required for the bid response. Final quantities of items shall be based on the physical design delivered in the Outside Plant section of this RFP.

3. The Layer 2 network shall be Ethernet switches using SFP based transmitters to connect hospitals and facilities together diversely through the optical fiber path delivered in the OSP section of this RFP. Switches shall be installed redundantly to ensure the east and west paths can be isolated on separate equipment to ensure that a component failure does not result in loss of connectivity to a site.

Regeneration sites may include only one switch. The Layer 2 network should separate hospital capacity from other facilities capacity. The Medical Network should have a backbone capacity of 2 gigabits with a redundant 1 gigabit access connection for each hospital. The Medical Network must accommodate growth to 5 gigabits backbone capacity. All facilities shall have backbone capacity of 1 gigabit with redundant 1 gigabit access connection for each location as a minimum. The IP network shall consist of dual edge routers in each hospital connected diversely to Layer 2 switches and consist of a single edge router in each facility connected diversely to Layer 2 switches. Each edge router shall have a path configured to one of two core routers also connected to the Layer 2 network. These core routers shall have BGP enabled and will act as gateways to all external connectivity. As such, the edge routers shall form a network with connectivity being managed by the core routers. The core routers should accommodate leased gigabit Ethernet connections for outside connectivity.

The Nevada Hospital Association (NHA) has defined the scope and structure of the Nevada Healthcare Network (NHA) project. The ultimate goal of this project will be to create a secure statewide telemedicine network that will cost-effectively enable participating Hospitals to deliver higher quality, efficient Healthcare services.



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The Optical NHA Network consists of the following types:

- 1) Terminal sites (Reno and Las Vegas): these two sites, represented as yellow squares “RENO” and “LV” in the diagram (Figure 1), have the capability to add/drop the full capacity of the DWDM backbone between Reno and Las Vegas.
  
- 2) Add/Drop Sites (Rural Hospitals) : these sites, are interconnected primarily by the planned new 48 count fiber plant. They are rural hospitals that home into the Las Vegas and Reno Terminal sites, where the traffic is aggregated by core/edge routers and forwarded onto the Backbone.
  
- 3) Regeneration (REGN) sites and In-Line Amplifier sites diagrams, enables Optical – Electrical – Optical signal conversion, ensuring signal integrity is maintained across the fiber backbone and both terminal sites receive signals that are within optical receiver specifications.

**Is the applicant seeking a waiver pursuant to section IX.C of the NOFA so as to sell or lease portions of the award-funded broadband facilities during their life?**

No

## I. Project Budget

Project Budget		
	Federal Grant Request	Match
Last Mile	0	0
Middle Mile	20,693,717	8,927,549
<b>Total</b>	20,693,717	8,927,549

**Project Budget Total:** \$29,621,266

**Match Percent:** 30.1%

**Projects Outside Recommended Funding Range:**

- This project budget is not below \$5 million or above \$150 million.



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Outside Leverage	
<b>Applicant is providing matching funds of at least 20% towards the total eligible project costs?</b>	Yes
<b>Matching cost detail</b>	Matching costs will come from our partner, Axia. They will fund 30% of the project budget in \$8,927,549 in cash. The use will be primarily equipment (see detailed budget) but will also cover other expenses to meet the 30% hurdle. The title of the network will remain with the Nevada Hospital Association but Axia will have a contractual agreement to claim most of the future profits (100% of to pre-determined limits) in exchange for their up-front investment.
<b>Unjust enrichment</b>	No
<b>Disclosure of federal and/or state funding sources</b>	None.
<b>Budget reasonableness</b>	We used an RFP with a half-dozen applicants to arrive at our cost numbers. We used many industry insiders to arrive at wholesale pricing and the hospitals committed to pricing up-front. Therefore, expenses and revenues are reliable.
<b>Demonstration of need</b>	<p>From the pro-forma financials file you can see that the project is negative npv without government assistance and would not be built. We have asked for only the funds to bring it npv neutral (slight negative in spreadsheet is negligible) at the 15% target discount rate. We find 15% a reasonable rate for capital-intensive projects like this and necessary to entice our private partner to invest. While more than most bonds, this is a reasonable hurdle rate for industry insiders based on benchmarking.</p> <p>Please note the government is asked to fund greater than the NPV negative of the project, but if the government is discounted for an apples-to-apples basis we are actually asking for slightly less (see slight npv negative). The government share comes later because we are privately buying the up-front equipment. We are happy to discuss this methodology.</p>

**Funds to States/Territories**



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States	Amount of Federal Grant Request
Nevada	20,693,717

**Funds to States/Territories Total:** \$20,693,717

## J. Historical Financials

Matching Funds			
	2007	2008	2009
<b>Revenue</b>	3,514,882	2,844,519	2,881,412
<b>Expenditures</b>	3,462,117	3,154,619	2,702,398
<b>Net Assets</b>	1,108,793	798,693	959,707
<b>Change in Net Assets from Prior Year</b>	52,765	-310,100	161,014
<b>Bond Rating (if applicable)</b>	N/A	N/A	N/A

## K. Project Readiness

### BTOP Organizational Readiness

The NHA Network Implementation team will work directly with the Network Operations team contracted to a Network Services firm to provide management of the NHA Telemedicine Network under SLA Agreements. NHA will maintain direct relationships with the member hospitals, and will have complete authority regarding Access Control Lists (ACL's), with final decision authority for member hospital participation, including billing, management control and customer care. The NHA Network organizational structure is defined in the NHA Organization Chart (see Upload section).

The NHA Telemedicine Network will be monitored by a dedicated Customer Service Center (CSC) and Network Operations Center (NOC) service, with support of a 24/7 Dispatch service,



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including Field Operations and an OSP logistics team to maintain, troubleshoot and repair any service related issues. The NOC is the main entry point for issuing ADD, MOVE, CHANGE (MAC's) and tracking problems in the NHA Network infrastructure. The active status of all terminals and amplifier sites are monitored by the Fiber Monitor and alarm aggregation routines which are run periodically (at the moment of writing about every hour) on all sites in production. Users and other support personnel (technicians) can request Dispatch tickets in the trouble ticketing system. Tickets are assigned by the NOC if the problem is related to a site or a service in the specific region.

Additional documentation will be provided that describes the Service level agreement approach proposed to deliver Network Operations Center services. This document will offer guidelines as a starting point to review the service level required to monitor and help manage the NHA's OPTICAL FIBER NETWORK based on the NHA's requirements and Network Equipment Providers (NEP) technical specifications.

In addition, the ALTA TELECOM NOC will offer Tier-2 Network Operations dispatch capabilities for "ON-Site" support technicians providing fiber locates, network maintenance and other activities as directed in this document or as stated in the SLA. The NHA will issue the Network Operations policy and support procedures that may be replaced by work instructions as recommended by the NHA.

ALTA has a well established Customer Support Capability including Ticket Administration, Dispatch, Escalation and Notification, Network Protection "One-Call" screening, Performance Data Collection and Reporting. Key attributes of ALTA's Customer Support Center are as follows:

- 24X7X365 Staffing and Operation
- Backup Capability between CSC in Atlanta, Langley, BC and our partner MDSI in Atlanta
- State of the Art WEB Based ticket systems which provides customer and key vendor access.
- One Call Ticket Screening and capability via the DIGTRACK System
- Well defined Dispatch, Emergency Escalation and Notification and Performance (SLA) Reporting processes.

**Construction and Vendor Contracts**



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Subject to competitive bid and fair contracting terms and conditions being met, the Nevada Hospital Association intends to enter into Management and Technical Operating Agreements with Alta Telecom (“Alta”) and The Broadband Group (“TBG”) (collectively “Vendors”) related to the operation of the Nevada Broadband Telemedicine Network (Project) as defined in the BTOP grant (see supplemental attachment "NHA Notice of Intent - Management and Technical Operating Agreements").

NHA considers Alta (<http://www.altatelecom.com>) and TBG (<http://www.broadbandgroup.com>) as vendors of first choice as to implementation of the Project. In this regard, the technical, design, engineering, and network Managed Services’ expertise of Alta and the operational, customer care, and network support services of The Broadband Group appropriately reflect the operational needs of the Project. Alta and TBG have advised of their readiness to assume this responsibility.

Subject to final agreement, vendors shall perform the services as defined as independent contractors and shall not be treated as employees of the other Parties for federal, state, or local tax purposes or for any other purposes.

**Customer Base**

Neither the Applicant nor the partner managing the program have an existing customer base in the Proposed Funded Service Area.

**Licenses, Regulatory Approvals and Agreements**

As per advice from Nevada PUC staff and Counsel (Jeff Galloway Debrea Terwilliger, Tammy Cordova) Applicant is not responsible for, nor shall it require any License to, sell or provision services to itself and/or its members. Noting that Nevada law is not precise as related to definitions of re-sale of excess capacity, it is open to review if Applicant would require resale License or Nevada CPCN registration. In the even CPCN Certification is required as per [http://pucweb1.state.nv.us/PUCN/\(X\(1\)S\(4dj3oj551wau0xz5ukfhuaq\)\)/Forms/TeleForms.aspx](http://pucweb1.state.nv.us/PUCN/(X(1)S(4dj3oj551wau0xz5ukfhuaq))/Forms/TeleForms.aspx), Applicant agrees to seek and comply with PUC Rules and Regulations as Commission regulations might require.

**SPIN Number**



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## L. Environmental Questionnaire

### Project Description

NHA will contract the Fiber Optic cable construction, both aerial and buried methods, to a qualified Fiber Optic contractor. The interconnection between the fiber endpoints will either sourced from a Data Center, POP, or Collocation type facility that is already in place. The endpoint or terminating end of the fiber will be built into an existing data center or POP location demarcation point at the Hospital facilities identified in the project plan.

Equipment, such as DWDM, Routers and Ethernet Switches will be installed as required in each terminating facility to ensure proper termination of the fiber endpoints. The plan addresses installation of equipment in pre-existing locations within each hospital that will be acceptable for the introduction of the fiber optic cable termination point.

For the three locations designated for Microwave access, small wireless antenna and mounting apparatus will be used to secure the new radio device to a pre-existing building or tower, as is determined as acceptable following the on-site RF testing results for optimum reception.

The proposal has allocation of funds for the OSP and environmental studies necessary to execute the research for those areas that are determined acceptable for construction.

### Property Changes

None are anticipated.

### Buildings



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No structures or buildings are planned.

**Wetlands**

The applicant has reviewed the U.S. Fish and Wildlife Services National Wetland Inventory. The project plans to use existing right of ways for any new construction. It does not appear that any wetlands intersect these existing right of ways.

**Critical Habitats**

The following species are listed on the Fish and Wildlife website as endangered or threatened, however the project does not anticipate disturbing areas beyond existing utility right of ways. The listings are for the entire county which is an extremely large area. The corridor planned for construction is along Nevada Highway 160 in southern Nye County. Tahoe yellow cress (*Rorippa subumbellata*) - - - Ash meadows milk-vetch (*Astragalus phoenix*) Spring-loving centaury (*Centaurium namophilum*) Ash Meadows ivesia (*Ivesia kingii* var. *eremica*) Ash Meadows blazingstar (*Mentzelia leucophylla*) Ash Meadows sunray (*Enceliopsis nudicaulis* var. *corrugata*) Ash Meadows gumplant (*Grindelia fraxino-pratensis*) Churchill Narrows buckwheat (*Eriogonum diatomaceum*) Insects Ash Meadows naucorid (*Ambrysus amargosus*)

**Floodplain**

The applicant has reviewed the maps at the FEMA website and does not believe any facilities are located within a 100 or 500-year floodplain.

**Protected Land**

The applicant is not aware of any historic properties within the project boundaries.

**Coastal Area**

None

**Brownfield**

The applicant does not believe any element of the project is located within a brownfield site.



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**Uploads**

The following pages contain the following uploads provided by the applicant:

Upload Name	File Name	Uploaded By	Uploaded Date
Service Offerings and Competitor Data	CCI Service Offerings and Competitor Data - Final.xls	Pieper, Michael	03/26/2010
Network Diagram	Attachment 18.2 Nevada_Backbone_Network_Diagram_032610_v1.0.pdf	Pieper, Michael	03/26/2010
Build Out Timeline	New 18.3 Build Out TimelineFinal.doc	Pieper, Michael	03/26/2010
List of Community Anchors and Points of Interest	CCI Anchor Detail and POI Attachment.xls	Pieper, Michael	03/26/2010
Management Team Resumes and Organization Chart	NHA - Organization Chart.pdf	Pieper, Michael	03/26/2010
Management Team Resumes and Organization Chart	Resume - Alta Ron Newitt.pdf	Pieper, Michael	03/25/2010



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Management Team Resumes and Organization Chart	Resume - ALTA G. Dean Coons.pdf	Pieper, Michael	03/25/2010
Management Team Resumes and Organization Chart	Resume_ALTA - Gary Tremblay.pdf	Pieper, Michael	03/25/2010
Management Team Resumes and Organization Chart	Resume_ALTA -Todd A. Richard.pdf	Pieper, Michael	03/25/2010
Management Team Resumes and Organization Chart	Resume_ALTA_Margaret Neal.pdf	Pieper, Michael	03/25/2010
Management Team Resumes and Organization Chart	NHA - Bill Welch Resume.pdf	Pieper, Michael	03/25/2010
Management Team Resumes and Organization Chart	NHA - Dwight Hansen Resume.pdf	Pieper, Michael	03/25/2010



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Management Team Resumes and Organization Chart	NHA - Eva LaBarge Resume.pdf	Pieper, Michael	03/25/2010
Management Team Resumes and Organization Chart	The Broadband Group - Keith White Bio.pdf	Pieper, Michael	03/25/2010
Management Team Resumes and Organization Chart	The Broadband Group - Thomas A Reiman BIO.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Renown Health.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	St. Rose Dominican Hospitals - Siena.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	4 Tribe Letters of Support.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Western Nevada College.pdf	Pieper, Michael	03/25/2010
Government and	Lyon County Board of County Commissioners.pdf	Pieper, Michael	03/26/2010



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Key Partnerships			
Government and Key Partnerships	Nathan Adelson Hospice.jpg	Pieper, Michael	03/26/2010
Government and Key Partnerships	MountainView.pdf	Pieper, Michael	03/26/2010
Government and Key Partnerships	Lincoln County Telephone System - Letter of Support.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Rio Virgin Telephone Company Letter of Support.jpg	Pieper, Michael	03/25/2010
Government and Key Partnerships	Satview Broadband Ltd. - Letter of Support.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	University School of Medicine - Letter of Support.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Banner Churchill Community Hospital - Letter of Support.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Axia_LOI_NHA[1].pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Boulder City Hospital.pdf	Pieper, Michael	03/25/2010



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Government and Key Partnerships	Carson Valley Medical Center.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Dept of Health & Human Services.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Fallon Police Dept..pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Grover C. Dils.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	HealthSouth Tenaya.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Indian Health Board.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	North Vista.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Northeastern Nevada Regional Hospital.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Pershing General Hospital.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Renown South Meadows_Rehab.pdf	Pieper, Michael	03/25/2010



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Government and Key Partnerships	St. Rose Dominican Hospitals- San Martin.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Carson Tahoe Regional Healthcare.pdf	Pieper, Michael	03/26/2010
Government and Key Partnerships	Arizona Nevada Tower Corp- NHA Letter.pdf	Pieper, Michael	03/26/2010
Government and Key Partnerships	Arizona Nevada Tower - NHA Memorandum of Understanding.pdf	Pieper, Michael	03/26/2010
Government and Key Partnerships	HealthSouth Henderson.pdf	Welch, Bill	03/26/2010
Government and Key Partnerships	Nye Regional Medical Center.pdf	Pieper, Michael	03/26/2010
Government and Key Partnerships	Primecare Nevada.pdf	Pieper, Michael	03/26/2010
Government and Key Partnerships	Western Nevada College.pdf	Pieper, Michael	03/26/2010
Government and Key Partnerships	Saint Marys RMC.pdf	Pieper, Michael	03/26/2010
Government and Key Partnerships	Banner Churchill Community Hospital - Letter of Support.pdf	Pieper, Michael	03/26/2010



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Government and Key Partnerships	UMC.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	NV Higher Ed.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	NV HHS.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	NRHP.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Fallon PD.pdf	Pieper, Michael	03/25/2010
Government and Key Partnerships	Duckwater Shoshone.pdf	Pieper, Michael	03/25/2010
Historical Financial Statements	Axia 2008 Report with Financials.pdf	Pieper, Michael	03/26/2010
Historical Financial Statements	Axia 2009 Report with Financials.pdf	Pieper, Michael	03/26/2010
Historical Financial Statements	NHA 2008 Audit Notes.pdf	Pieper, Michael	03/26/2010



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Historical Financial Statements	NHA 2008 Audited Financials.pdf	Pieper, Michael	03/26/2010
Historical Financial Statements	NHA 2009 Audit Notes.pdf	Pieper, Michael	03/26/2010
Historical Financial Statements	NHA 2009 Audited Financials.pdf	Pieper, Michael	03/26/2010
Historical Financial Statements	NSHE 2008 Report with Financials.pdf	Pieper, Michael	03/26/2010
Historical Financial Statements	NSHE 2009 Report with Financials.pdf	Pieper, Michael	03/26/2010
Budget Narrative	Attachment 18 8 Budget Narrative_032610_1 0.docx	Pieper, Michael	03/26/2010
Detailed Budget	18 9 Detailed Budget.xls	Pieper, Michael	03/26/2010
Detailed Budget	Latest 18 9 Detailed Budget.xls	Pieper, Michael	03/26/2010
Pro-forma Forecast	18.10 Pro-forma Forecast.xls	Pieper, Michael	03/26/2010



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Subscriber Estimates	CCI Subscriber Estimates Attachment.xls	Pieper, Michael	03/26/2010
Dashboard Metrics	CCI Key Metrics Dashboard Attachment.doc	Pieper, Michael	03/26/2010
Service Area Data	Attachment 18.13 NHA CCI Service Areas Attachment.xls	Pieper, Michael	03/26/2010
Waivers	CCI Waiver Attachment.doc	Pieper, Michael	03/26/2010
Network Maps	Attachment 18.15 NHA ROW transport route map_032610_1.0.pdf	Pieper, Michael	03/26/2010
BTOP Certifications	U.S. Dept of Commerce.pdf	Pieper, Michael	03/25/2010
SF-424 C and D	CCI SF-424C Form.pdf	Pieper, Michael	03/26/2010
SF-424 C and D	CCI SF 424 D Form.pdf	Pieper, Michael	03/26/2010
Supplemental Information	Clarification of EasyGrants ID Number – Change of Applicant Name.doc	Pieper, Michael	03/26/2010
Supplemental Information	NHA Notice of Intent - Management and Technical Operating Agreements.pdf	Pieper, Michael	03/26/2010
Supplemental Information	Nevada Broadband Telemedicine Initiative - Participating Hospitals (Community Anchor Summary	Pieper, Michael	03/26/2010



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	List ).pdf		
Supplemental Information	nevadanet_connection_policy.pdf	Pieper, Michael	03/25/2010