



**The New Mexico Broadband Program**  
**New Mexico Broadband Regional**  
**Implementation Plan Framework**  
**Final Report, September 30, 2012**

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Prepared for:

**The New Mexico Broadband Program**

NM Department of Information Technology

<http://www.doit.state.nm.us/broadband/>

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# The New Mexico Broadband Program

## New Mexico Broadband Regional Implementation Plan Framework

### The New Mexico Broadband Program

The New Mexico Regional Broadband Implementation Plan (RBIP) is for the purpose of planning and assisting regional broadband projects. The RBIP is a part of the New Mexico Broadband Program,<sup>1</sup> funded by a five-year grant from the Department of Commerce, National Telecommunications Information Administration (NTIA) to the New Mexico Department of Information Technology (DOIT). The work of the grant includes:

- Mapping – creating and maintaining a New Mexico Broadband Map to define broadband availability.
- Planning – offering opportunities for integration and collaboration in the areas of construction, education, marketing, and socio-economic analysis, with an emphasis on enhancing adoption.
- Capacity Building – forming a statewide committee with working groups that represent various user sectors to help in the process of identifying gaps and providing solutions.
- Technical Assistance – develop and identify digital literacy resources in the state; produce a Community Broadband Guide for the use of regional groups; and offer technical assistance to regional groups who wish to increase broadband availability and adoption.

The RBIP comprises two main work areas: a Community Broadband Guidebook, created by Columbia Telecommunication Corporation, and the design of a technical assistance program to help regional groups who wish to increase broadband availability. The technical assistance program is described in this report.

### How is New Mexico Doing?

Broadband deployment has generally been considered to be a state issue, i.e., both as infrastructure and economic development, although with the issuance of the 2010 National Broadband Plan<sup>2</sup> by the Federal Communications Commission (FCC) and the BTOP and RUS grants awarded under the Recovery Act more federal attention has become focused on broadband as a key national interest as well.

In its Eighth Broadband Progress Report, the FCC reported various metrics by state and nationally to measure broadband availability, cost, quality and adoption. The assessment uses the SBI Data collected by NTIA as of June 2011. The SBI data are collected through state efforts and maintained by NTIA for

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<sup>1</sup> <http://www.doit.state.nm.us/broadband/index.shtml>

<sup>2</sup> <http://www.broadband.gov/plan/>

the National Broadband Map. In New Mexico the NM Department of Information Technology collects the SBI Data.<sup>3</sup>

**Table 1: Fixed Broadband Adoption Rates**

|                    | NM    | US    |
|--------------------|-------|-------|
| Up to 768kbps      | 56.5% | 64.0% |
| 768 kbps to 3 Mbps | 35.1% | 40.4% |
| 3 to 6 Mbps        | 22.2% | 27.6% |

Eighth Broadband Progress Report, Federal Communications Commission, August 21, 2012, p. 45.

[http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2012/db0827/FCC-12-90A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0827/FCC-12-90A1.pdf)

**Table 2: Americans without Access to Fixed Broadband Meeting the Speed Benchmark<sup>4</sup>**

|    | All Areas             |                                      |                                | Non-Rural Areas       |                                      |                                | Rural Areas           |                                      |                                |
|----|-----------------------|--------------------------------------|--------------------------------|-----------------------|--------------------------------------|--------------------------------|-----------------------|--------------------------------------|--------------------------------|
|    | Population (Millions) | Population Without Access (Millions) | % of Population Without Access | Population (Millions) | Population Without Access (Millions) | % of Population Without Access | Population (Millions) | Population Without Access (Millions) | % of Population Without Access |
| US | 315.887               | 18.992                               | 6.0                            | 254.886               | 4.521                                | 1.8                            | 61.00                 | 14.471                               | 23.7                           |
| NM | 2.098                 | 0.298                                | 14.2                           | 1.627                 | 0.078                                | 4.8                            | 0.471                 | 0.220                                | 46.7                           |

Eighth Broadband Progress Report, Federal Communications Commission, August 21, 2012, p. 76.

[http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2012/db0827/FCC-12-90A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0827/FCC-12-90A1.pdf)

**Table 3: Tribal Lands without Access to Fixed Broadband Meeting the Speed Benchmark<sup>5</sup>**

|                  | Population | Population Without Access | % Population Without Access |
|------------------|------------|---------------------------|-----------------------------|
| All Tribal Lands | 3,857,121  | 1,118,982                 | 29.0%                       |
| NM               | 139,781    | 103,775                   | 74.2%                       |

Eighth Broadband Progress Report, Federal Communications Commission, August 21, 2012, p. 159.

[http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2012/db0827/FCC-12-90A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0827/FCC-12-90A1.pdf)

According to the Eighth Broadband Progress Report, New Mexico ranks in the lower quarter of the states when all states are compared on the percentage of their population with access to broadband of 40Mbps up and 10Mbps down.<sup>6</sup> In addition, the Current Population Survey estimates released in July 2012 show New Mexico as one of the lowest three states in terms of reported Internet use – 64.1% usage compared to the US average of 75.9%.<sup>7</sup>

At the same time, however, New Mexico is using \$285.6M of ARRA funding on telecommunications infrastructure to increase connectivity around the state. It is using \$21.4M in other ARRA grants to

<sup>3</sup> <http://www.doit.state.nm.us/broadband/>

<sup>4</sup> All rates are compared to the FCC speed benchmark of 40Mbps down and 10 Mbps up.

<sup>5</sup> All rates are compared to the FCC speed benchmark of 40Mbps down and 10 Mbps up.

<sup>6</sup> Eighth Broadband Progress Report, Federal Communications Commission, August 21, 2012, p. 76.

[http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2012/db0827/FCC-12-90A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0827/FCC-12-90A1.pdf)

<sup>7</sup> <http://www.census.gov/hhes/computer/publications/2010.html> Table 3A.

increase awareness of the value of broadband as well as increase computer and Internet skills. This desire to improve broadband connectivity was also evidenced in the New Mexico First Telecommunications Conference on August 3, 2012, which dealt solely with the topic of telecommunications. Recommendations and an implementation strategy from the conference are forthcoming.<sup>8</sup>

## Review of Other State Strategies to Improve Broadband

Some common strategies used by states have been:

- Creation of public/private task force to review the current scene and develop policy or government actions to improve broadband deployment and adoption.
- Engaging local communities to increase demand in order to attract providers in previously unserved areas.
- Tax incentives to encourage investment in broadband.
- Creation of state or municipal networks.
- Dedicated funding available for deployment of broadband in unserved areas.

### Creation of Public/Private Task Force

One of the early states to form a task force and to adopt wide-ranging and ambitious broadband goals was California. Although California is not the only state to take this path, because of the breadth of its projects and its longer track record it is worthy of examination. In 2006, Governor Schwarzenegger created a 21-member California Broadband Task Force composed of public and private stakeholders with the expertise to advise policymakers on a framework for making California a global leader in the telecommunications revolution.<sup>9</sup> The Task Force recommended the following:

- Develop model permitting standards for local and regional governments in collaboration with broadband providers;
- Begin mapping broadband availability;
- Create a targeted fund program, California Advanced Services Fund, to provide matching grants of 40% to qualified broadband providers;
- Create a non-profit organization, California Emerging Technology Fund, to organize rural regional and urban underserved consortia to examine how to attract broadband investment;
- Develop strategies to increase the use and adoption of broadband and computer technology using digital literacy tools such as a website to train trainers in digital literacy and lesson plans to integrate computers into public school curricula;
- Create a statewide e-health network;
- Launch a public awareness campaign, Get Connected, to raise awareness of the benefits of broadband;

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<sup>8</sup> <http://nmfirst.org/events/statewide-broadband-summit>

<sup>9</sup> <http://www.cio.ca.gov/broadband/taskforce/aboutus.asp>

- Create working groups in the following areas: Build-Out, Community Development, Economic, Development, Education, Emerging Technology, New Applications, and Healthcare.<sup>10</sup>

Results:

*DEPLOYMENT* – One of the distinct advantages for California was the creation of a fund to build and promote broadband. The fund, the California Advanced Services Fund (CASF), was created in 2007 by statute and funded by imposing a 0.25% surcharge on intrastate telephone bills. This resulted in an initial fund of \$100M. When ARRA was enacted, the PUC revised the program to allow providers to use CASF funds as matching for ARRA grants. In 2010 the fund was increased by an additional \$125M to be used to fund projects for a period of five more years (2010-2015). The \$125M was allocated for grants to cover broadband infrastructure capital costs, a Broadband Infrastructure Revolving Loan Account to fund deployment costs not covered by a grant, and a Rural and Urban Regional Broadband Consortia Grant Account to fund activities to help regions secure funding for broadband infrastructure.

The 2011 Annual Report of the CASF discusses the benefits and deployment levels due to its grants. “After evaluating the current broadband availability data and the 2010 U.S. census numbers, we estimate that the total percentage of households that are served in California, where wireline and fixed-wireless broadband service is at least 6 mbps download and 1.5 mbps upload, is 89.35%. Underserved areas of the state amount to 8.62% of households and unserved areas amount to 2.03% of households.”<sup>11</sup>

*ADOPTION* – At its inception, the California Emerging Technology Fund (CETF) was funded by AT&T and Verizon at \$60M for the purpose of working with rural and urban underserved consortia to increase deployment and adoption. Its primary projects are:

- School2Home – integrate computers and broadband technologies into teaching and learning at low performing middle schools with parental involvement, extensive teacher training and home broadband connectivity.
- Public Awareness and Education – CETF launched the “Get Connected” campaign<sup>12</sup> with a website in four languages and public service announcements in several languages as well as Community Connect Fairs around the state to promote awareness, train individuals in digital literacy and training community leaders in broadband awareness. CETF set a goal for adoption of 90% by 2020 and 80% by 2015. California is currently at 72%, which is close to meeting its next goal and exceeding the national level of 61%.

*TELEHEALTH* – While the Broadband Task Force work and funding has been a help to the Telehealth Network, the Network has also benefited greatly from two other initiatives: The California Teleconnect Fund (CTF) that provides discounts of up to 50% on advanced telecommunications services, i.e., broadband, for qualifying schools, hospitals, libraries and community-based organizations, including

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<sup>11</sup> <http://www.cpuc.ca.gov/NR/rdonlyres/90A77F62-AFA7-4CD1-B2A8-14062783AAE4/0/CASF2011AnnualReportMarch152012Final.pdf>

<sup>12</sup> <http://getconnectedtoday.com>



community technology programs. CTF is financed by a 0.13% surcharge placed on every telephone bill. In addition, Governor Schwarzenegger's issued a Health Information Technology (HIT) Executive Order (S-12-06, signed July 2006), which allocated \$240 million to achieve full information exchange between health care providers and stakeholders within ten years.

*STATE PERMITTING* – This project has created a fiber collaboration database to allow providers to view upcoming state construction in order to be included in the construction, thereby decreasing construction costs and digging in public right-of-way. In addition, the CalTrans has created a uniform broadband permit application to be used by all state agencies and is redoing the broadband permitting process to decrease time to approval. Right-of-way fees have been changed to eliminate the lease-type fee previously paid by broadband providers for fiber located along highways.<sup>13</sup>

## **Engaging Local Communities to Increase Demand/Deployment**

### Missouri

Representatives of local government, schools, public safety, business, higher education and others have formed 19 Regional Planning Commissions to develop plans for each community. The state-led collaboration is partnering with University of Missouri and private sector partners GeoDecisions and CBG Communications, Inc.

Process: The regional teams met several times over the course of approximately 18 months and worked in between scheduled team meetings. The first half of the process was devoted to a regional needs assessment designed to gather needs, interests, attitudes and opinions about broadband access, availability and adoption from a variety of different communities of interest, including the residential community, the business community, and the various other sectors represented by members. The second part of the process was strategic planning, where the findings from the needs assessment were developed into a SWOC analysis. This strategic plan includes strategic initiatives, resources needed and an action plan, as well as benchmarks and measurements for success.

Results: Most regional strategic plans were completed in Spring 2012.

<http://mobroadbandnow.com/regional-planning/rtpts/>

### Kentucky

Kentucky, like California, was an early adopter of broadband deployment projects. It's ConnectKentucky project, a public/private partnership launched in 2002, promoted technology-based initiatives such as mapping and surveying to determine needs around the state. The process, a three-year one, aimed to expand access to broadband while also increasing demand for services.

Process: The first step in the process was the creation of a comprehensive map of broadband availability. Using these data, ConnectKentucky worked with local volunteers to develop community plans that served as the roadmap for bringing broadband to unserved areas. Part of these plans was household and individual surveys that documented computer and Internet use and helped identify

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<sup>13</sup> <http://www.cio.ca.gov/broadband/statepermitting/default.asp>

barriers to adoption. Funding, in part, was from the state (approximately \$7.5M over three years). Other funding (20%) is from providers and other stakeholders.

Results: In 2008, ConnectKentucky reported a 50% growth rate in deployment and an 83% growth rate in adoption (compared to 57% nationally). They also reported an overall investment of \$860M in state telecom networks.

<http://online.wsj.com/article/SB121676442873775111.html>

### **Tax Incentives to Encourage Investment in Broadband**

A number of states have changed their tax codes to encourage investment in broadband infrastructure and other related equipment.

#### Mississippi

The 2003 Mississippi Broadband Technology Act provides tax credits and sales tax exemptions for investments made for fiscal years 2003-2013.

Process: Investments must be for equipment used for the deployment of broadband technologies. The credits range from 5-15% for equipment and 50-100% for sales tax exemptions. In addition, the incentives are structured so that the percentages increase for investments made in more rural areas.

Results: No updates or reports on the amount of tax credits given or build outs tracked to those tax credits were found online.

<http://www.mississippi.org/mda-library-resources/finance-tax-info/tax-exemptions-incentives-and-credits/broadband-technology-tax-credit.html>

[http://www.mississippi.org/mda-library-resources/finance-tax-info/tax-exemptions-incentives-and-credits/sales-and-use-tax-exemption-for-broadband-technology.html?zoom\\_highlight=broadband](http://www.mississippi.org/mda-library-resources/finance-tax-info/tax-exemptions-incentives-and-credits/sales-and-use-tax-exemption-for-broadband-technology.html?zoom_highlight=broadband)

#### Oregon

Oregon allows a tax credit of up to 20% of the cost of deploying advanced telecommunications facilities.

Process: In 2001, Oregon passed a 20 percent non-refundable tax credit for investment in high-speed, dedicated or switched broadband telecommunications infrastructure. The credit can be used against the Personal Income Tax and the Corporation Income Tax for 20 percent of the costs or waiver of installation charges for schools, rural health clinics and libraries. The Economic and Community Development Commission certifies the facilities that meet the law's requirements.

Results: No updates or reports on the amount of tax credits given or build outs tracked to those tax credits were found online.

<http://www.leg.state.or.us/ors/315.html>

## State or Municipal Networks

### Alabama

The Alabama Research and Education Network (AREN) provides Internet access for Alabama state government, four-year universities, two-year colleges, K-12 schools, and libraries. It is operated by the Alabama Supercomputer Authority (ASA).

Process: The ASA is an Alabama public corporation with the mission to develop and operate the statewide AREN. Funding for the ASA comes from the Alabama Education Trust Fund, fees for service, and federal contracts and grants. Legislative appropriations from the Alabama Education Trust Fund subsidize access to AREN at no cost to a limited number of public schools and colleges. Customers from private schools, 'general fund' state agencies and commercial customers continue to pay for services at standard rates. The Authority facilitates videoconferencing and distance education for its members.

ASA also assists schools and libraries in applying for and receiving E-rate discounts for Internet services through the AREN consortium. The AREN consortium currently consists of 136 school systems, 15 individual libraries and 3 library systems.

Results: Traffic on AREN has increased by more than 1,000% (in Mbps) from 2002-2009.

<http://www.asc.edu/network/index.shtml>

### Colorado

EAGLE-Net is a Colorado intergovernmental entity that operates a cost-sharing cooperative that will deliver a carrier quality broadband network to more than 170 communities across the state. The network will serve education, libraries, government and health care facilities statewide. EAGLE-Net also provides commodity Internet services with access to advanced research and education networks. EAGLE-Net was awarded a Round-2 \$100.6 million BTOPI infrastructure grant in September 2010.

Results: Services to be provided are: middle mile transport at speeds from 10-1,000 Mbps and above, regional and statewide cloud based transport services within peering and user established networks, other services such as dark fiber IRUs, wave length services, and high-capacity broadband services.

<http://www.co-eaglenet.net>

### Virginia

The Bristol Virginia Utility (BVU) is generally regarded as the oldest municipal network in the US and the first to deploy an all-fiber network offering the triple play of voice, video and data services.

Process: BVU is a utility company that provides electric, water, wastewater, cable and advanced fiber-optic broadband services to customers in a 125-square-mile area that includes Bristol, Abingdon and Washington County, Va. The utility also manages digital data and phone services for CPC OptiNet as well as cable and broadband services for MI-Connection.

Results: Bristol was the only American city to be listed in the 2009 Top 10 Intelligent Cities in the World. The international competition is sponsored by the Intelligent Community Forum (ICF) based in New York

City and involves a 10-month global search to find locations that are building “prosperity and social inclusion” in what the judges call an emerging Broadband Economy.

[www.bvu-optinet.com](http://www.bvu-optinet.com)

### North Carolina

The e-NC Authority is the state’s designated broadband authority and works with broadband providers and communities to increase broadband adoption and find solutions to deploy broadband to unserved areas. The Authority was created in 2004.

e-NC receives around \$500,000 per year in state operating funds. Staff provides technical expertise around the state. Past projects include: mapping and tracking broadband availability, helping to establish public-private partnerships, direct outreach and education focusing on rural and distressed urban areas. E-NC was also awarded \$6.6M in BTOP funding through 2014 to support its continued efforts around broadband mapping, planning, capacity building, adoption and use for increased broadband infrastructure.

Results: e-NC supported entities in the state such as the e-NC Business and Technology Telecenters that served business clients, provided digital literacy training and public Internet access and offered technical assistance to communities, all of which generated state revenue. E-NC’s efforts also increased broadband deployment in the state.

During the legislative session in North Carolina this year, a law passed that will make it more difficult for municipal networks to operate by imposing rules such as requiring municipal networks to remit the same amount that a private provider would have to pay in corporate, sales, use and franchise taxes; charge customers the full amount that it costs them to operate the network; and limit coverage to the jurisdictional boundaries of the city. This law also defunded and allowed to sunset the e-NC Authority. The state’s Department of Commerce will take over the work associated with the BTOP grant.<sup>14</sup>

[http://www.ncleg.net/documentsites/committees/JointAppropriationsNER2011/2011-02-17%20Meeting/e-NC\\_Authority\\_Brochure\\_Leg\\_Request\\_2011-02-17.pdf](http://www.ncleg.net/documentsites/committees/JointAppropriationsNER2011/2011-02-17%20Meeting/e-NC_Authority_Brochure_Leg_Request_2011-02-17.pdf)

### **Dedicated Funding Available For Deployment of Broadband in Unserved Areas**

#### New York

Connect NY Broadband Grant Program will fund projects that acquire and install broadband equipment to expand last mile services to unserved and underserved areas using existing networks, as well as deploying new infrastructure where applicable. The grants may be used by: incorporated organizations, tribal organization, local units of government or cooperative, private or limited liability companies. The priority uses for the new networks are: unserved, underserved, community anchors, telemedicine and economically distressed areas. Other important characteristics of the selection criteria are: impact and adoption plans, collaboration and community support, leveraging existing infrastructure and funding sources such as USDA programs.

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<sup>14</sup> <http://www.pewstates.org/projects/stateline/headlines/in-north-carolina-a-reversal-on-municipal-broadband-85899375151>

Process: New York has committed \$25M of state money to increase broadband deployment and adoption. The intent of this project is to leverage new middle mile and existing broadband networks to expand last mile service areas to unserved regions. New York State Broadband Program Office will do selection and project management.

Results: Applications are due in October 2012.

<http://www.nysbroadband.ny.gov/ConnectNY2012>

## Maine

The ConnectME Authority was created in 2006 to develop proposals for broadband projects for underserved areas of the state and to oversee the process for selecting and funding those projects. The ConnectME Authority's source for funding is a 0.25 percent surcharge on all communications, video, and Internet service bills for retail in-state service, which generates between \$750,000 and \$1 million per year. Additionally, the ConnectME Authority received a one time, voluntary cash payment of \$2.5 million from Verizon as a result of its February 2008 merger with FairPoint Communications, Inc.

The authority funds projects through grants, direct investments, and loans made to local governments. Many of the funds are made in partnership with communications service providers. The ConnectME statute also provides for reimbursement up to \$500,000 annually of Maine sales and use taxes in connection with the purchase of machinery and equipment for use primarily in the development of advanced communications infrastructure.

Results: ConnectME announced its seventh round of broadband awards in July 2012. The 23 new grants will expand broadband communications services to unserved areas of Maine. Over \$2.0 million was awarded to recipients with total project costs of \$3.1 million, expanding services to more than 2000 households and businesses.

<http://www.maine.gov/connectme/>

## **Recommendations for New Mexico**

1. Continue to use the New Mexico Broadband Program and the New Mexico Department of Information Technology as the center of broadband activities, mapping, planning and advocacy for the state.<sup>15</sup> However, some thought should be given to how these functions will be carried forward in 2014 when the federal mapping grant is finished.
2. The Broadband Executive Committee that exists as part of the New Mexico Broadband Program could be enlarged, if necessary, and charged with assessing the rates of broadband deployment and adoption in the state and recommending policy solutions that address the broadband availability and broadband adoption gaps.
3. As detailed in the Other State Solutions section, policy solutions to be considered by the Broadband Executive Committee could include public-private partnerships, creating direct funding for broadband, examining the role of state networks such as NMCHECs and the

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<sup>15</sup> <http://www.doit.state.nm.us/broadband/>

TeleHealth Network and engaging local communities, providers, and economic development groups to increase local demand and digital skills.

4. Continue the regional broadband implementation programs that encourage the creation of regional broadband teams and solutions and provide technical assistance to these projects similar to the pilot programs currently underway in the New Mexico Broadband Program.

## **Model for a Regional Broadband Implementation Plan for New Mexico**

Early on in this work in a review of other state's activities, a project of the Colorado Office of Information Technology (OIT), the Colorado Broadband Data and Development Program, became of interest to this author. After further research and review, I recommend that the Colorado model described below be adopted as the basis for New Mexico's Plan. This work is further defined in the Community Broadband Master Plan Guidebook, which will be release in late fall 2012.

The program in Colorado is part of the federal mapping grant received by OIT and exists as a resource for counties and economic development districts who wish to address broadband deployment and adoption in their areas. The program offers technical assistant to local technology planning teams so that they are able to make determinations of local needs and find local solutions. The program's goals for regional broadband are that it should be *abundant* in terms of both access and speed, *redundant* and diverse in order to reduce outages, and offer *affordable* connections comparable in price to urban areas in the state.

The main reasons that this model is significant are: 1) there has been an increase in broadband (mainly in the middle mile) in participating rural areas; 2) the process creates self-aware and knowledgeable local technology teams to address current and future technology needs and to lead the community as it develops local technology projects that allow for innovation and stronger local economies; 3) the project often discovered new providers with affordable solutions because the teams could show aggregated and increased local demand, offered local resources to offset capital costs, and considered and used alternative technologies.

### **Implementation Process**

This is the process that the communities followed with technical assistance from OIT:<sup>16</sup>

#### Aggregate Local Expertise

An important first step is to recruit a strong Local Technology Planning Team. Team members were recruited based on a) experience with previous or on-going efforts to improve broadband in targeted communities, b) positions as community leaders (county commissioners, council of government chairs), c) technical expertise (IT directors) and d) local service providers.

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<sup>16</sup> <http://www.colorado.gov/cs/Satellite/OIT-StatelInitiatives/CBON/1251575390656>. Reviewed on August 14, 2012.

### Assess Broadband Environment

The assessment includes current telecommunications infrastructure and available services using the State's broadband map, as well as survey and speed test tools to collect experiences of broadband consumers and profiles of network outages.

### Assess Current Community Demand

Demand surveying is done for all community anchor institutions, businesses, and residential users. All potential middle mile and first mile service providers are identified.

### Aggregate Total Project Demand

All major consumers of broadband in the region are listed with both current and future needs. This step also includes obtaining commitments from major bandwidth consumers to buy with the regional project.

### Aggregate Local Resources

To reduce the total capital expenses of projects and, in turn, increase returns for entering providers, all community resources that could be contributed to the project such as towers, rights of way, community owned real estate, existing dark fiber and local funding sources are identified.

### Aggregate Solutions

Disruptive/alternative technologies that could change the cost equation for delivery of broadband such as carrier neutral locations, Gigabit Ethernet (GigE), microwave and fixed wireless are considered.

### Aggregate Sustainability

Research into all areas that ensure future sustainability is ongoing. On the technology side, this could include ownership models for rural broadband providers similar to rural electric co-ops or state bonding authority for rural broadband cooperatives. On the adoption side, this could include community explorations into increasing local capacity to innovate and generate economic and social changes using technology led by the local technology teams. In addition, local adoption strategies such as digital literacy training and pricing and service plan options for low-income customers could be considered.

## **Steps for a Regional Implementation Plan**

The program will have three central goals:

1. To enable up to six pilot regions to take multiple steps to develop and implement their connectivity and adoption plans.
2. To demonstrate how the regional planning and implementation process can work over time as a model for future programs.
3. To inform the development of a state-wide strategic plan for broadband deployment and public-private partnerships throughout New Mexico.

## **Specific Tasks/Roles**

**Consultants Role:** Consultants will provide technical support and assistance to the Pilots selected as they perform the tasks outlined below. This support will be provided for the duration of the New Mexico Broadband Program federal grant. The Consultants will provide the assistance on a regular basis in person, by phone or via other communications media. The Consultants will make regular reports to the NM Department of Information Technology on the progress of the local teams and the consulting work provided. In addition, the Consultants will regularly share the progress of the project in appropriate venues.

**Expertise required:** The Consultants should include a local project coordinator who is conversant in New Mexico broadband practices as well as familiar with local telecommunications providers, major users of broadband, regulatory bodies, and state and grassroots organizations with an interest in procuring more broadband. In addition, the team should include one or more members with the expertise required to assist regional groups in questions of network engineering, business models for broadband provision, broadband funding mechanisms, demand/supply calculations and a comprehensive overview of municipal and regional broadband best practices in the US.

**Consultants Introductory Work:** Consultants will build upon the preparatory work done by the New Mexico Broadband Program in surveying all parts of the state for broadband coverage and deficits, projects being planned or under construction and readiness and interest of various players/partners. In addition, the Broadband Program created a Community Broadband Guide for use by all interested communities in the state. This work was done through selected visits with regional leaders, telecommunication providers, economic development groups, specialists in rural development, ARRA projects, municipal IT departments, tribal leaders, Municipal League, Association of Counties, legislators, digital literacy providers/programs and a review of existing statistical data that measure factors affecting availability and adoption of broadband in NM.

The Consultants will create promotional and explanatory materials for the project such as a web page, flyers and presentations. The presentations will include a detailed list of the tasks that regional groups should perform in order to identify and address gaps in broadband availability and adoption and to find and evaluate possible providers.

The Consultants will visit all of the Councils of Government, as well as any other groups who identify themselves as interested in learning more about the program, to make a presentation, answer questions, and become familiar with the interests and readiness of each regional group.

## **Year 1 Work**

**Identification of Pilot Regions:** In collaboration with the State Broadband Program, consultants will work to identify six interested regions. In order to receive technical assistance a regional group shall have:

1. Formed a Local Implementation Team and Work Plan. This Plan should detail how the required tasks will be performed in a timely manner with an outline of how, by whom and when the tasks are expected to be completed;
2. Submitted the list of the Team's membership and the Work Plan to the NM Broadband Program;



3. Acknowledge that the Team understands that if the group does not perform these tasks in a timely manner, technical assistant may be terminated.

Work to be performed by local teams with technical assistance from the consultants:

1. Form a Local Implementation Team made up of members with experience in telecommunications, community leaders, broadband users and local service providers.
2. Assess the local broadband environment for each community to identify common network outages and causes, determine maximum bandwidth available and cost, create an inventory of existing infrastructure, determine availability and reliability of middle mile facilities.
3. Determine community demand by identifying all major consumers of broadband, both business and community anchor institutions, and their current speeds, project the needs of these users to obtain a number for total future demand for each community.
4. Aggregate total project demand in the region, list current needs and multi-year future demand, and obtain commitments from major bandwidth customers to buy within the regional project.
5. Identify community resources that could be used to reduce the cost of new broadband infrastructure or improve adoption of broadband such as: existing towers, rights of way, community owned real estate, rural electric co-op facilities and staff, locations for carrier neutral locations to terminate middle mile facilities, local funding sources and possible grants, and digital literacy training providers and locations.
6. Investigate possible alternative and disruptive technological solutions that may lower the project costs.
7. Identify potential middle mile and first mile service providers.
8. Investigate sustainability solutions such as ownership models for rural broadband providers similar to rural electric coop structure, state bonding authority for community telecommunications infrastructure renovation and maintenance and ways to promote adoption and add new broadband customers.

Consultants' Work for Each Pilot:

In addition to on-demand technical assistance, the following reports will be produced for each pilot:

1. Supply and demand assessment with gap and opportunity analysis,
2. Technology plan to address gaps and opportunities identified,
3. Strategic and business plan including funding recommendations and public-private strategies.

Each of the regions selected is likely to be at a different stage of the planning model. Depending on their efforts to date, as well as on the particular challenges they have identified, the contractors will develop and recommend a technical assistance program for each pilot that builds on their existing work and enables them to quickly and efficiently undertake as many as possible of the subsequent steps in the model.

## **Year 2 Work**

Depending on the stage of planning reached by each pilot in Year 1, the Consultants will assist the regions with the following tasks, or others, as appropriate:

RFI/RFP to providers,

1. Identification of private sector partners,
2. Negotiations with private sector partners,
3. Grant applications, financing, and/or other funding mechanisms,
4. Implementation plans and specifications.

In addition to these project-specific deliverables, the consultants will prepare interim and final reports to be presented to the State that provide strategic plans for the state for future broadband planning and deployment based on the efforts and results to date, as well as lessons learned. All regions of the state will have access to the materials created during the program, including the Community Broadband Guidebook and information from the pilots.