



BACKGROUND

Today, technology plays a pivotal role in how businesses operate, the type of service consumers expect, how institutions provide services, and where consumers choose to live, work, and play. The success of a community has also become dependent on how broadly and deeply the community adopts technology resources – this includes access to reliable high-speed networks, digital literacy of residents, and the use of online resources locally for business, government, and leisure. As noted in the National Broadband Plan, broadband Internet is “a foundation for economic growth, job creation, global competitiveness and a better way of life.”¹

Despite the growing dependence on technology, as of 2013, 30% of Americans did not have a high-speed connection at home.² Connected Nation’s studies also show that 17 million families with children do not have broadband at home, and 7.6 million of these children live in low-income households.³ In 2014, Connected Nation also surveyed 4,206 businesses in 7 states. Based on this data, Connected Nation estimates that nearly 1.5 million businesses – 20% – in the United States do not use broadband technology today.⁴

Deploying broadband infrastructure, services, and application, as well as supporting the universal adoption and meaningful use of broadband, are challenging but required building blocks of a twenty-first century community. To assist communities, Connected Nation developed the Connected Community Engagement Program to identify local technology assets, complete an assessment of local broadband access, adoption, and use, and develop an action plan for pursuing solutions.⁵

¹ *Connecting America: The National Broadband Plan*, Federal Communications Commission, April 2010, <http://www.broadband.gov/download-plan/>.

² *Broadband Technology Fact Sheet*, Pew Research Internet Project, September 2013, <http://www.pewinternet.org/fact-sheets/broadband-technology-fact-sheet/>.

³ *The Adoption Gap in Low-Income Households with Children: 2011 Residential Survey Preliminary Findings*, Connected Nation Inc., September 2011, http://www.connectednation.org/_documents/connectednationlow-income2011surveyfindingsfinal.pdf.

⁴ *Broadband and Business: Connected Nation 2014 Business Survey Results*, Connected Nation Inc., http://www.connectednation.org/sites/default/files/biz_infographic_2014_cn_final.pdf.

⁵ Connected Nation, parent company for Connect Nevada, is a national non-profit 501(c)(3) organization that works in multiple states to engage community stakeholders, state leaders, and technology providers to develop and implement technology expansion programs with core competencies centered around the mission to improve digital inclusion for people and places previously underserved or overlooked.

HISTORY OF THE PROJECT

Connect Nevada, established in 2009, is a subsidiary of Connected Nation, Nevada's state designee for the United States Department of Commerce's State Broadband Initiative grant. The public-private initiative has been established to work with each of the state's broadband providers to create detailed maps of broadband coverage, conduct surveys to assess the current state of broadband adoption across Nevada, and to help communities plan for technology expansion. Connect Nevada works closely with the Nevada Broadband Task Force to bring in sector representatives as they address challenges and take advantage of opportunities related to broadband across the state. Connect Nevada's efforts are funded by the United States Department of Commerce's State Broadband Initiative grant program through the National Telecommunications and Information Administration (NTIA). More information is available at <http://www2.ntia.doc.gov>.

Connect Nevada's primary partner is the Nevada Broadband Task Force, established July 15, 2009, by Executive Order. This body consists of 12 members appointed by the Governor of Nevada. Members of the Task Force represent the following areas: rural health and hospitals, rural K-12 school districts, rural libraries, distance education/higher education, public safety/Nevada Department of Transportation, the telecommunications industry, the cable industry, the wireless industry, local government, Nevada Commission on Economic Development, city/county organizations, and Nevada Native Americans. According to the Executive Order, the Task Force will work to identify and remove barriers to broadband access and identify opportunities for increased broadband applications and adoption in unserved and underserved areas of Nevada. The Task Force shall also oversee all necessary duties and responsibilities to reach the goal to expand broadband technology including the application of federal funding/grants, grant compliance, mapping, and data management.



MAPPING

As part of the Nevada State Broadband Initiative, and in partnership and at the direction of the Nevada Broadband Task Force, Connect Nevada produced an inaugural map of broadband availability in spring 2010. The key goal of the map was to highlight communities and households that remain unserved or underserved by broadband service; this information was essential to estimating the broadband availability gap in the state and understanding the scope and scale of challenges in providing universal broadband service to all citizens across the state. Since the initial map's release, Connect Nevada has collected and released new data every six months, with updates in October and April annually.

The most current Statewide and County Specific Broadband Inventory Maps released in the fall of 2014 depict a geographic representation of provider-based broadband data represented by cable, DSL, wireless, fiber, etc. These maps also incorporate data such as political boundaries and major transportation networks in the state.

MAPS CREATED FOR SBI:

- Broadband Service Inventory
- Broadband Service Inventory (Advertised Speeds of at Least 3 Mbps Downstream and 768 Kbps Upstream)
- Density of Households Unserved by a Broadband Provider
- Maximum Advertised Download Speed
- Density of Providers
- Broadband Growth
- Multiple/Single Platform
- Underserved Areas
- Underserved Areas with Mobile
- Average Download Speed
- Broadband Service Inventory by Congressional District

CUSTOM MAPS CREATED FOR LOCAL/STATE PLANNING:

- Telemedicine Map (State Asset Inventory)
- Mobility Fund Eligible Census Blocks
- Douglas County Speed Test Map
- Douglas County Industrial Zone Map
- Douglas County Commercial Zone Map
- Douglas County Speed Test Contest Map
- FCC Rural Experiments Eligible Census Blocks

ESTIMATE OF BROADBAND SERVICE AVAILABILITY IN THE STATE OF NEVADA BY SPEED TIER AMONG FIXED PLATFORMS

SBI SPEED TIERS DOWNLOAD/UPLOAD	UNSERVED HOUSEHOLDS		SERVED HOUSEHOLDS		PERCENT OF SERVED HOUSEHOLDS BY SPEED TIER	
	2011	2014	2011	2014	2011	2014
At Least 768 Kbps / 200 Kbps	10,420	8,933	995,829	997,317	98.96	99.11
At Least 1.5 Mbps / 200 Kbps	15,560	10,398	990,689	995,852	98.45	98.97
At Least 3 Mbps / 768 Kbps	27,528	14,824	978,722	991,426	97.26	98.53
At Least 6 Mbps / 1.5 Mbps	47,782	43,281	958,467	962,969	95.25	95.79
At Least 10 Mbps / 1.5 Mbps	86,117	47,779	920,132	958,471	91.44	95.25
At Least 25 Mbps / 1.5 Mbps	108,108	62,839	898,141	943,411	89.26	93.76
At Least 50 Mbps / 1.5 Mbps	139,618	74,701	866,631	931,549	86.12	92.58
At Least 100 Mbps / 1.5 Mbps	1,002,849	89,193	3,400	917,057	.34	91.14
At Least 1 Gbps / 1.5 Mbps	1,006,250	1,004,904	0	1,346	0	.13

Source: Connect Nevada, October 2014

Table 1 reports updated summary statistics of the estimated fixed, terrestrial broadband service inventory (excluding mobile and satellite service) across the state of Nevada; it presents the number and percentage of unserved and served households by speed tiers. The total number of households in Nevada in 2010 was 1,006,250, for a total population of 2,700,551 people. Table 1 indicates that 99.11% of households are able to connect to broadband at download speeds of at least 768 Kbps and upload speeds of at least 200 Kbps. This implies that the number of households originally estimated by Connect Nevada to be unserved has dropped from 10,420 households in the fall of 2011 to 8,933 households in the fall of 2014. Of those 8,933 currently unserved households, however, 5,175 households are located in rural areas of the state. Further, approximately 991,426 households across Nevada have broadband available of at least 3 Mbps download and 768 Kbps upload speeds. The percentage of Nevada households having fixed broadband access available of at least 6 Mbps download and 1.5 Mbps upload speeds is estimated at 95.79%

Taking into account both fixed and mobile broadband service platforms, an estimated 99.73% of Nevada households have broadband available from at least one provider at download speeds of 768 Kbps or higher and 200 Kbps upload or higher. This implies that 0.27% of households remain unserved by a terrestrial broadband connection (including mobile).

As differences in broadband availability estimates between the fall of 2011 and the fall of 2014 show, additional participating broadband providers can have a large impact upon Nevada broadband mapping inventory updates. Further, the measured broadband inventory provides an estimate of the true extent of broadband coverage across the state. There is a degree of measurement error inherent in this exercise, which should be taken into consideration when analyzing the data. This measurement error will decrease as local, state, and federal stakeholders identify areas where the displayed coverage is underestimated or overestimated. Connect Nevada welcomes such feedback to be analyzed in collaboration with broadband providers to correct errors identified in the maps.

In addition, the broadband availability data collected, processed, and aggregated by Connect Nevada has been sent on a semi-annual basis to the NTIA to be used in the National Broadband Map, and comprises the source of Nevada's broadband availability estimates reported by the NTIA and the Federal Communications Commission (FCC) in the National Map. The National Broadband Map can be found here: <http://www.broadbandmap.gov> and the Map's specific page for Nevada can be found here: <http://www.broadbandmap.gov/summarize/state/nevada>.

INTERACTIVE MAP

Connect Nevada provides My ConnectView™, an online tool developed and maintained by Connected Nation intended to allow users to create completely customized views and maps of broadband infrastructure across the state. The self-service nature of this application empowers Nevada's citizens to take an active role in seeking service, upgrading service, or simply becoming increasingly aware of what broadband capabilities and possibilities exist in their area, city, county, or state. <http://www.connectnv.org/interactive-map#>

PROVIDER ENGAGEMENT

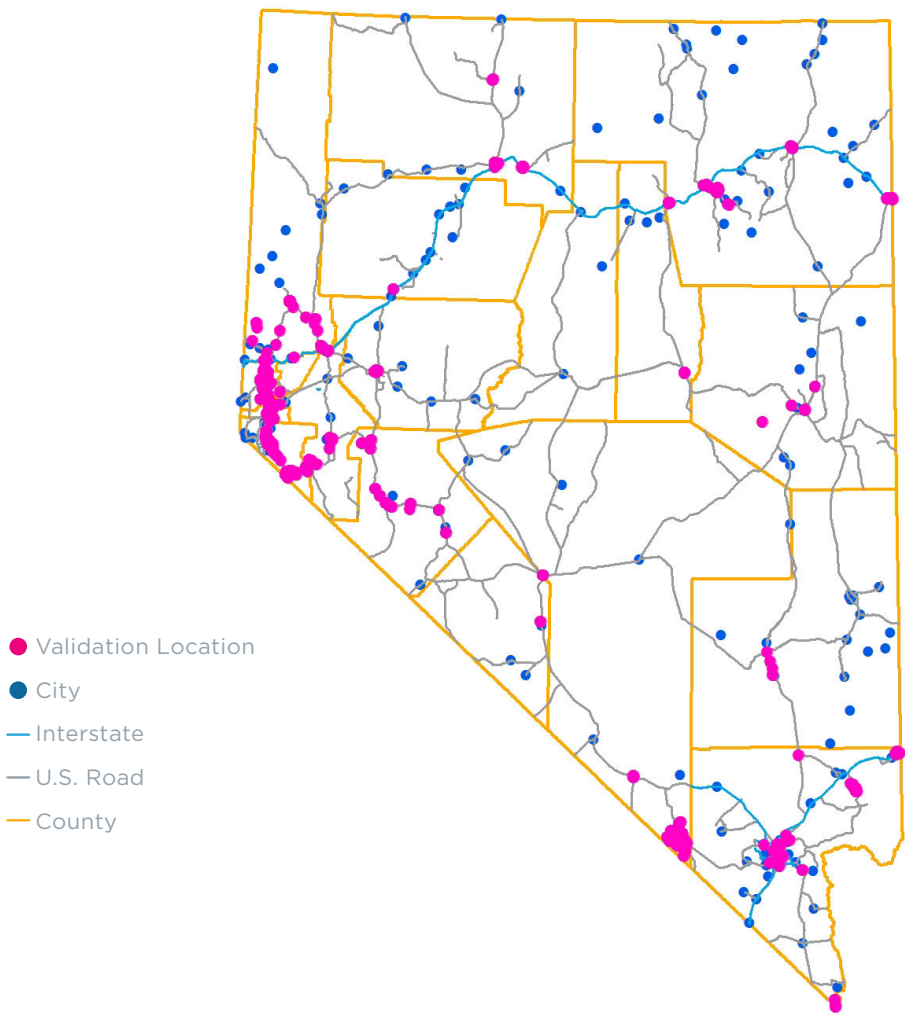
The October 2014 data update submission under the SBI program includes datasets for 100 percent of the Nevada provider community, or 59 total providers. This dataset includes business/commercial and residential providers. A complete roster by provider type and website is included on the following page.

PROVIDERS | OCTOBER 2014

PROVIDER NAME	PLATFORM	WEBSITE
Advanced Telecom, Inc.	Fiber	http://www.integratelecom.com/
amargosavalley.com	Fixed Wireless	http://www.amargosavalley.com/
Arizona Nevada Tower Corporation	Backhaul, Fixed Wireless	http://www.antower.com/
AT&T, Inc.	DSL, Mobile Wireless	http://www.att.com/
Avant Wireless	Fixed Wireless	http://www.avantwireless.com/index.html
CalNeva Broadband	Cable	http://blog.calneva.org/
CC Communications	DSL, Fiber	http://www.cccomm.net/cccomm/
CenturyLink	DSL, Backhaul	http://www.centurylink.com/
Charter Communications, Inc.	Cable, Backhaul	http://www.charter.com/
Cogent Communications, Inc.	Fiber, Backhaul	http://www.cogentco.com/
Commnet Wireless, Inc.	Mobile Wireless	http://us.choice-wireless.com/
Cox Communications	Cable, Backhaul	http://ww2.cox.com/
Cricket Wireless	Mobile Wireless	http://www.leapwireless.com/
Digis	Fixed Wireless	http://www.jabbroadband.com/
Express Internet	DSL, Fixed Wireless	http://www.expint.net/
EzzNet	Fixed Wireless	http://www.ezznet.com/
Filer Mutual Telephone Company	DSL	http://www.filertel.com/
Fort Mojave Telecommunications, Inc.	DSL, Fiber	http://www.ftmojave.com/
Frontier Communications Corporation	Backhaul, DSL	http://www.frontier.com/
Great Basin Internet Services	Fixed Wireless	http://www.greatbasin.net/
High Desert Internet Services	Fixed Wireless	http://www.hdiss.net/
High Speed Networks	Fixed Wireless	http://www.hsne50.com
Highlands Wireless Inc.	Fixed Wireless	http://www.highlandswireless.net
Hot Spot Broadband	Fixed Wireless	http://www.hotspotbroadband.com/
Hughes Network Systems	Satellite	http://www.hughes.com/
Humboldt Telephone Company	DSL	http://oiutelecom.net/
InfoWest	Fixed Wireless	http://www.infowest.com/
Level 3 Communications	Fiber, Backhaul	http://www.level3.com/
Lincoln County Telephone System	DSL, Fiber	http://www.lctsys.com/
lv.net	Fixed Wireless	http://www.lv.net/
MegaPath Corporation	DSL, Backhaul	http://www.megapath.com/
Metro PCS Wireless, Inc.	Mobile Wireless	http://www.metropcs.com/
Mighty Moose	Fixed Wireless	http://springcreekwireless.com/index.htm
Mt Wheeler Power	Fixed Wireless, DSL	http://www.mwpower.net/
MVDSL	DSL, Fiber	http://www.mvtel.com/
NewWave Communications	Cable	http://www.newwavecom.com/
NSHE	Backhaul	http://system.nevada.edu/
nvhispeed	Fixed Wireless	http://www.nvhispeed.com/
Oasis	Fixed Wireless	http://www.oasisol.com/
PC Internet	Fixed Wireless	http://www.winnemuca.net/
Quicknet	Fixed Wireless	http://www.mvqn.net/
Reliance Connects	DSL, Fiber	http://www.relianceconnects.com/
Rural Telephone Company	DSL	http://www.rtc.net/
Satview	Cable	http://www.wenr.net/
Schat.net	Fixed Wireless	http://www.schat.com/
Skycasters	Satellite	http://www.skycasters.com/
Sprint Mobile	Wireless, Backhaul	http://www.sprint.com/
StarBand Communications	Satellite	http://starband.com/
TDS Telecommunications Corporation	Cable	http://www.tdstelecom.com/
Tele-NET.net	Fixed Wireless	http://www.tele-net.net/
T-Mobile	Mobile Wireless, Backhaul	http://www.t-mobile.com/
Tw Telecom Of Nevada, LLC	DSL, Fiber, Backhaul	http://www.twtelecom.com/
VegasWiFi Communications	Fixed Wireless	http://www.vegaswifi.net/
Verizon Wireless	Mobile Wireless, Backhaul	http://www.verizonwireless.com/
ViaSat, Inc.	Satellite	http://www.wildblue.com/
Wireless Beehive, LLC	Fiber, DSL	http://www.wirelessbeehive.com/
WUE, Inc.	Mobile Wireless	N/A
XO Communications, LLC	Backhaul	http://www.xo.com/
Zayo Bandwidth, LLC	Backhaul	http://www.zayo.com/

Connect Nevada also continued to perform broadband verification activities through several means over the duration of the project. In addition to confirmation of service area(s) by each provider, Connect Nevada has conducted field validation efforts. As of final submission, 86.21 percent of viable residential providers have been validated through field verification activities.

03 VALIDATION LOCATIONS



The Connect Nevada website (www.connectnv.org) has served a prominent role in the outreach and data collection effort. This program asset has provided a way for the general public to participate in the process by offering interactive tools for users to test their connection speed, submit broadband inquiries, or contact a program representative.

BUSINESS AND RESIDENTIAL TECHNOLOGY ASSESSMENTS

To complement the broadband inventory and mapping data, Connect Nevada periodically conducts statewide residential and business technology assessments to understand broadband demand trends across the state. The purpose of this research is to better understand the drivers and barriers to technology and broadband adoption and estimate the broadband adoption gap across the state of Nevada. Key questions the data address are:

- Who, where, and how are households in Nevada using broadband technology?
- How is this technology impacting Nevada households and residents?
- Who is not adopting broadband service and why?
- What are the barriers that prevent citizens from embracing this empowering technology?

Through Connect Nevada's research, many insights are realized. The state's 2014 Residential Technology assessment revealed the following key findings:

- 80% of adults in the state subscribe to home broadband service, up from 78% in 2010.
- More than three out of five Nevada adults (61%) use mobile broadband service, up from 39% in 2010 when Connect Nevada began measuring this trend.
- More than 423,000 adults still do not subscribe to home broadband service. These Nevadans cite many different reasons for not subscribing, including cost, the belief that broadband is not relevant or beneficial to them, and a lack of digital literacy skills.
- Nearly one in four parents of school-age children in Nevada (23%) say that their children's school provides them with a laptop or tablet computer; the majority of those parents (55%) report that receiving a computer from the school had a positive impact on their child's grades.
- Nearly one-half of working-age Nevada adults (46%) rely on the Internet to seek out or apply for jobs, while one in three (33%) go online to further their educations by taking online classes.

Additionally, the results of Connect Nevada's 2014 Business Technology Survey released in the summer of 2014, revealed the following key findings:

- More than four out of five businesses in the state (81%) use broadband, while 11,000 businesses do not.
- 25% of businesses in the state have difficulty finding employees with the necessary technological skills.
- Nevada businesses earned \$15.6 billion in 2013 from online sales.

Over the duration of the project the following white papers were developed to address sector and demographic issues:

- Technology Use Among Rural Nevada Businesses, 2013
- Mobile Broadband in Nevada: Access at Home or On the Go, 2013
- Now Hiring: The Impact of Broadband on Nevada's Workforce, 2013
- Technology Adoption Among Hispanics (also available in Spanish), 2012
- Teleworking in Nevada: Linking Nevadans to Jobs, 2012
- The Power of Broadband: Boosting Nevada's Education System, 2012
- E-Health: Empowering Nevadans Across All Walks of Life, 2011
- Broadband and Business, 2011

Full reports are available at <http://www.connectnv.org/policy>.

SUMMITS

Connect Nevada has hosted three statewide Summits. The first Summit focused on economic development, the second on local community engagement, and the third on education. The potential fourth Summit was reconfigured into two workshops, the product of which is this Plan. The Summits held attendance of more than 150 and drew stakeholders from government, healthcare, education, tribes, libraries, and public safety.

- **Wired for Success – November 14, 2011, in Dayton, Nevada**

This first Summit aligned with an announcement by the Governor of his strategic economic development plan. Connect Nevada took the Governor's targeted sectors and drew in stakeholders such as broadband providers and local business owners with topics of how to engage key business opportunities through broadband. This resulted in a high initial engagement commitment from several rural counties. The Summit featured an introduction of the project and effective ways of dealing with technology and policy issues related to broadband.

- **Connecting Communities – October 24, 2012, in Las Vegas, Nevada**

The second Summit focused on local community engagement where counties that were working on broadband-related issues could share ideas and solutions. This allowed the teams to draw on similarities as well as to have face time with solution providers (e.g., telcos). The keynote at this event was the Vice President of Connectivity for S.W.I.T.C.H., a large server farm.

- **Learning in the Digital Space – November 18, 2013, in Reno, Nevada**

The third Summit focused on education and brought in thought leaders from across the state to discuss technology and the role of broadband in the education space. While subjects like 1:1 and innovation were a part of this discussion, there was also emphasis on the release of data collected by Education SuperHighway. This partnership between Connect Nevada and Education SuperHighway provided for a much more detailed analysis of the gaps in broadband coverage in education across the state. As a result, Connect Nevada has been very closely engaged in the implementation of a statewide 1:1 plan and has helped identify real solutions for several small districts.

LOCAL PLANNING

By actively participating in the Connected Community Engagement Program, 14 rural counties are now boosting the community's capabilities in education, healthcare, and public safety and stimulating economic growth and spurring job creation. These communities have collaborated with multiple community organizations and residents to:

1. Empower a community team leader (local champion) and create a community team composed of a diverse group of local residents from various sectors of the economy including education, government, healthcare, the private sector, and libraries.
2. Identify the community's technology assets, including local infrastructure, providers, facilities, websites, and innovative uses employed by institutions.
3. Complete the Connected Assessment, a measurement of the community's access, adoption, and use of broadband based on the recommendations of the National Broadband Plan.
4. Match gaps in the local broadband ecosystem to solutions and best practices being used by communities across the nation.
5. Pursue Connected Certification, a nationally recognized platform for spotlighting communities that excel in the access, adoption, and use of broadband.