



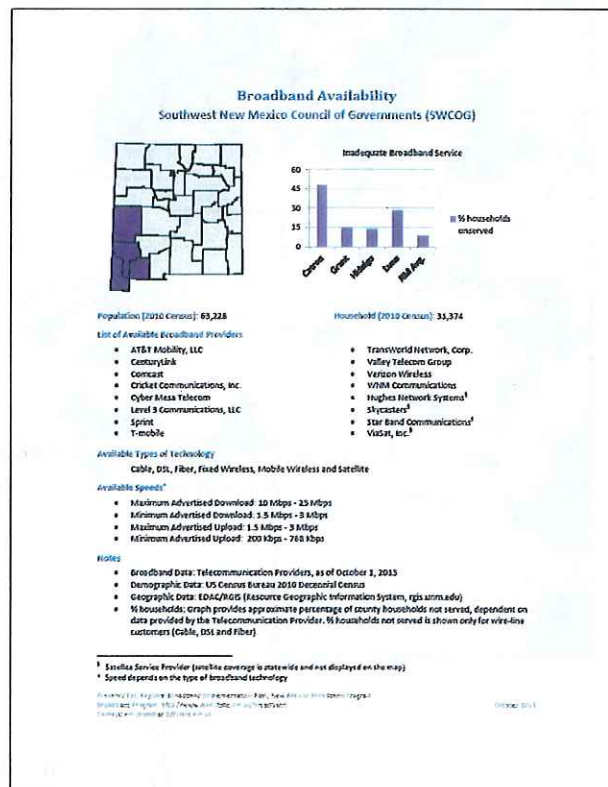
NEW MEXICO  
DEPARTMENT OF  
INFORMATION TECHNOLOGY



## MAP BOOK

### Southwest Council of Governments Regional Broadband Implementation Pilot

### New Mexico Broadband Program

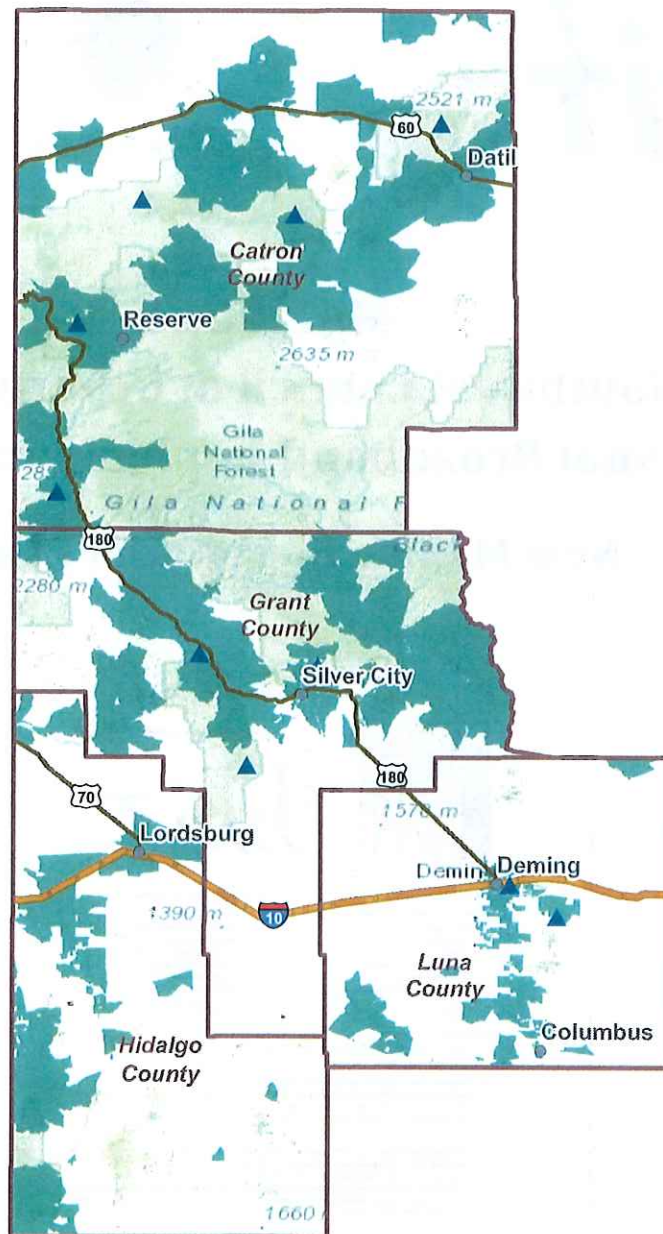


Prepared for:  
**Southwest Council of Governments**  
Regional Broadband Implementation Pilot

Prepared by:  
**New Mexico Broadband Program**  
Department of Information Technology  
<http://www.doit.state.nm.us/broadband/>

# DSL Broadband Availability

## Southwest New Mexico Council of Governments (SWCOG)



### Legend

- DSL Coverage Area
- State Telecom Site
- City/Town
- Interstate
- US Highway



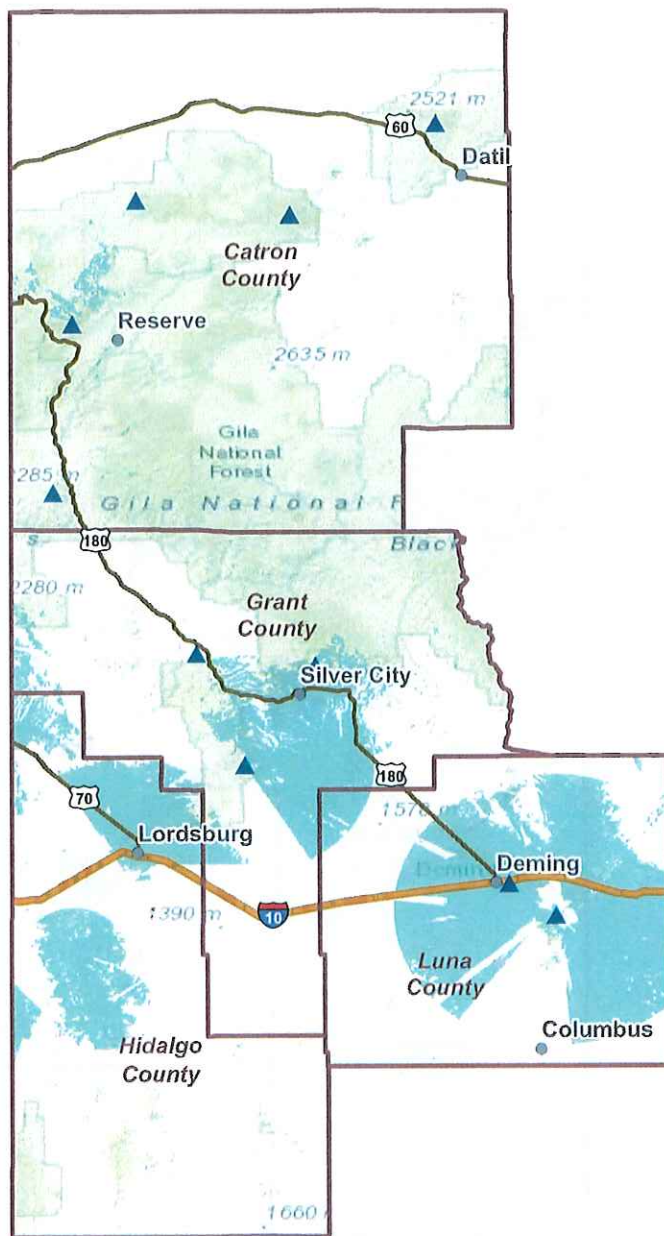
0 10 20 40 Miles

Prepared For: Regional Broadband Implementation Plan  
New Mexico Broadband Program  
Data: Telecom Providers, current as of October 1, 2013  
Broadband Program: <http://www.doit.state.nm.us/broadband>  
Contact: [nm.broadband@state.nm.us](mailto:nm.broadband@state.nm.us)



# Fixed Wireless Broadband Availability

## Southwest New Mexico Council of Governments (SWCOG)



### Legend

- Fixed Wireless Coverage Area
- State Telecom Site
- City/Town
- Interstate
- US Highway



0 10 20 40  
Miles

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New Mexico Broadband Program

Data: Telecom Providers, current as of October 1, 2013

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# Cable Broadband Availability

## Southwest New Mexico Council of Governments (SWCOG)



### Legend

-  Cable Coverage Area
-  State Telecom Site
-  City/Town
-  Interstate
-  US Highway



0 10 20 40  
Miles

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# Fiber Broadband Availability

## Southwest New Mexico Council of Governments (SWCOG)



### Legend

- Fiber Coverage Area
- State Telecom Site
- City/Town
- Interstate
- US Highway



0 10 20 40 Miles

Prepared For: Regional Broadband Implementation Plan  
New Mexico Broadband Program

Data: Telecom Providers, current as of October 1, 2013

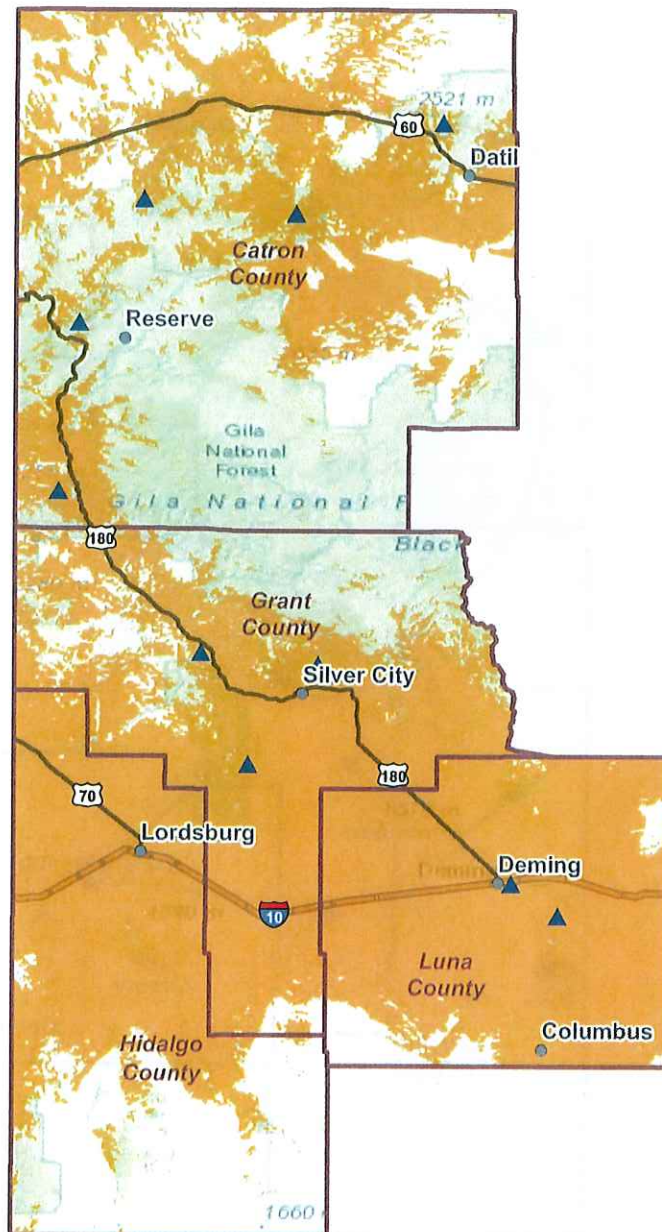
Broadband Program: <http://www.doit.state.nm.us/broadband>

Contact: [nm.broadband@state.nm.us](mailto:nm.broadband@state.nm.us)



# Mobile Wireless Broadband Availability

## Southwest New Mexico Council of Governments (SWCOG)



### Legend

- Mobile Wireless Coverage Area
- State Telecom Site
- City/Town
- Interstate
- US Highway



0 10 20 40 Miles

Prepared For: Regional Broadband Implementation Plan  
New Mexico Broadband Program

Data: Telecom Providers, current as of October 1, 2013

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

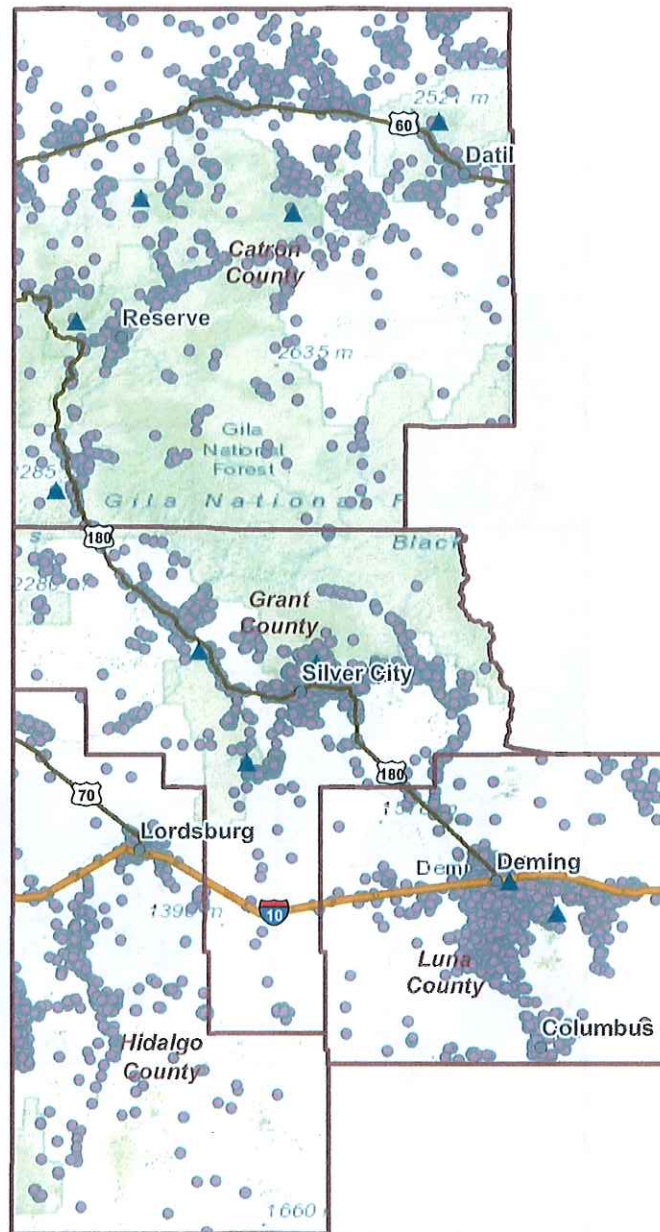
Contact: [nm.broadband@state.nm.us](mailto:nm.broadband@state.nm.us)





# New Mexico Structures

## Southwest New Mexico Council of Governments (SWCOG)



### Legend

- Structures
- ▲ State Telecom Site
- City/Town
- Interstate
- US Highway



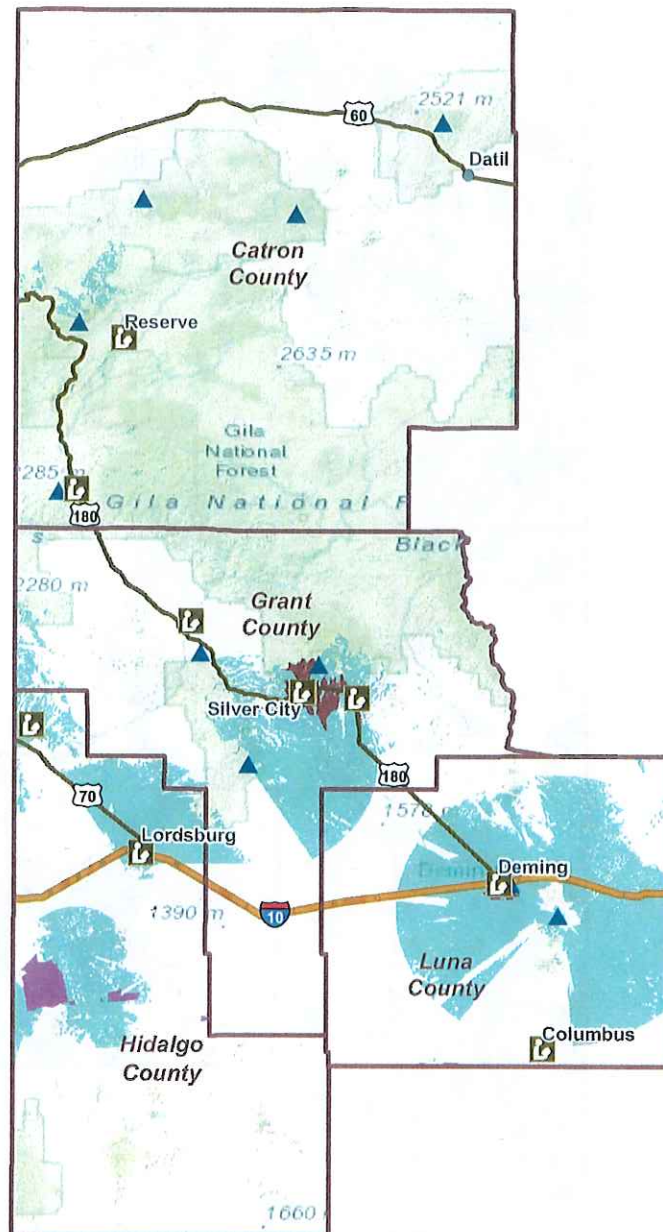
0 10 20 40  
Miles

Prepared For: Regional Broadband Implementation Plan  
New Mexico Broadband Program  
Data: NM Dept. of Finance & Administration, October 2013  
Broadband Program: <http://www.doit.state.nm.us/broadband>  
Contact: [nm.broadband@state.nm.us](mailto:nm.broadband@state.nm.us)











# Libraries

## Southwest New Mexico Council of Governments (SWCOG)



### Legend

-  Library
-  State Telecom Site
-  City/Town
-  Interstate
-  US Highway
-  Fiber Coverage Area
-  Cable Coverage Area
-  Fixed Wireless Coverage Area



0 10 20 40 Miles

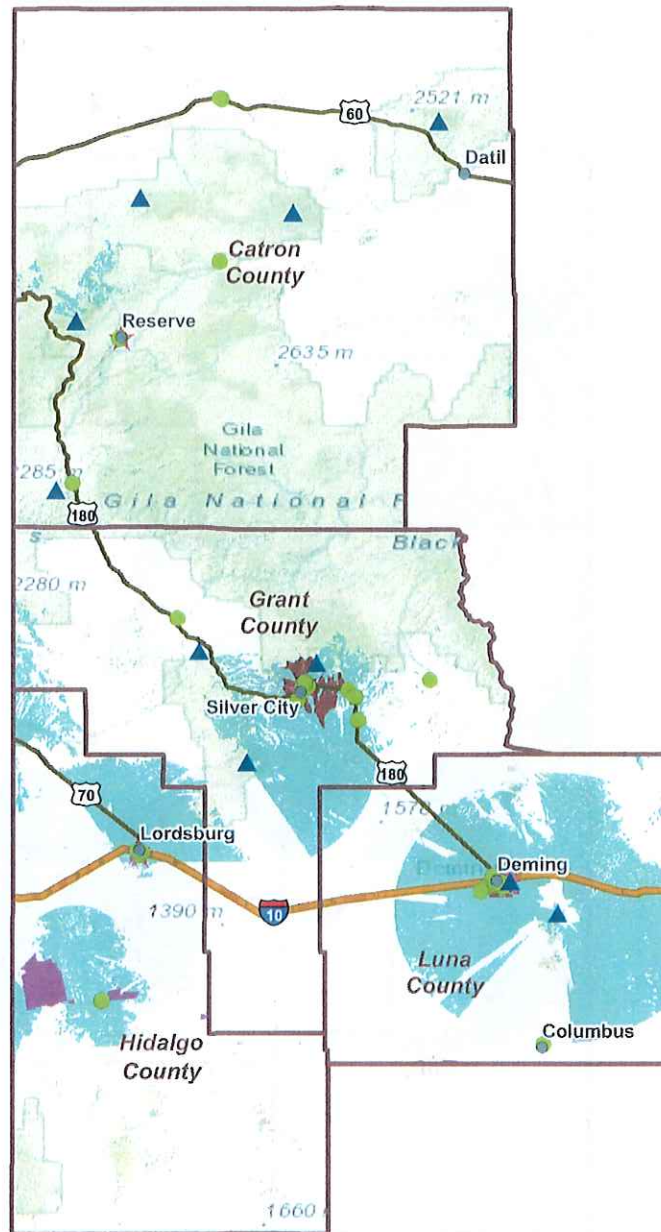
Prepared For: Regional Broadband Implementation Plan  
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 Contact: [nm.broadband@state.nm.us](mailto:nm.broadband@state.nm.us)





# Educational Institutions

## Southwest New Mexico Council of Governments (SWCOG)



### Legend

- Public Schools K-12
- ★ University
- Community College
- Other post-secondary Institution
- ▲ State Telecom Site
- City/Town
- Interstate
- US Highway
- Fiber Coverage Area
- Cable Coverage Area
- Fixed Wireless Coverage Area



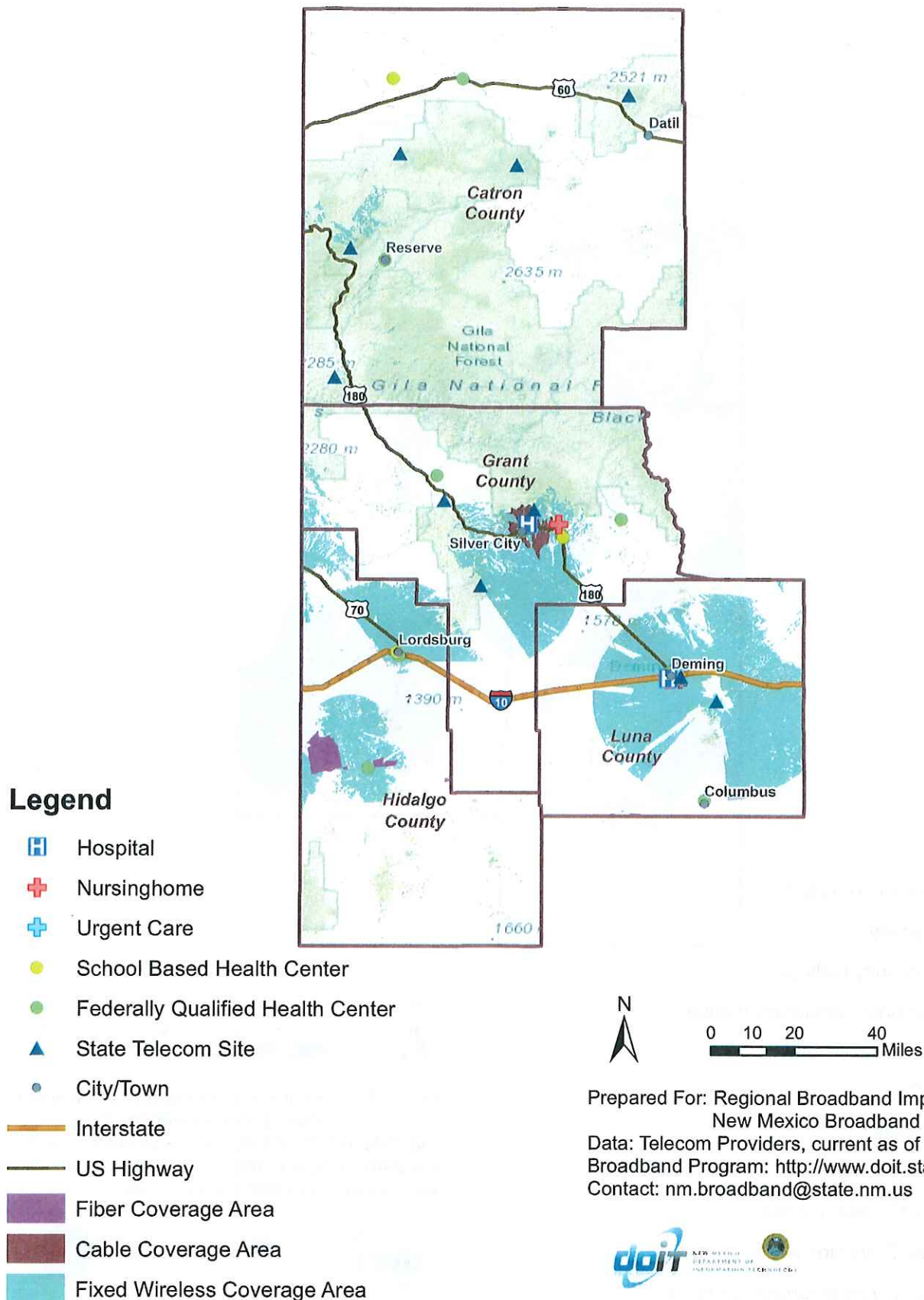
0 10 20 40 Miles

Prepared For: Regional Broadband Implementation Plan  
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 Contact: [nm.broadband@state.nm.us](mailto:nm.broadband@state.nm.us)



# Medical/Healthcare Facilities

## Southwest New Mexico Council of Governments (SWCOG)

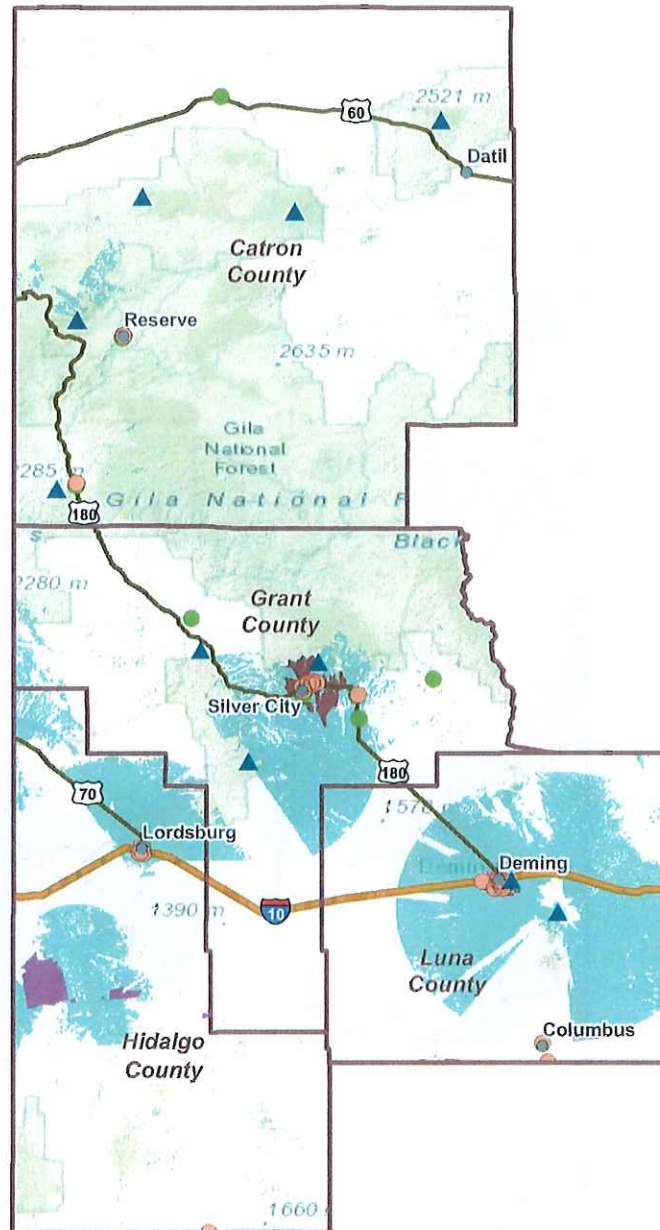


Prepared For: Regional Broadband Implementation Plan  
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 Data: Telecom Providers, current as of October 1, 2013  
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 Contact: [nm.broadband@state.nm.us](mailto:nm.broadband@state.nm.us)



# Government & Non Govt. Resources

## Southwest New Mexico Council of Governments (SWCOG)



### Legend

- State Govt Agency
- Other Govt / Community Support
- Non Government Resource
- ▲ State Telecom Site
- City/Town
- Interstate
- US Highway
- Fiber Coverage Area
- Cable Coverage Area
- Fixed Wireless Coverage Area



0 10 20 40 Miles

Prepared For: Regional Broadband Implementation Plan  
New Mexico Broadband Program

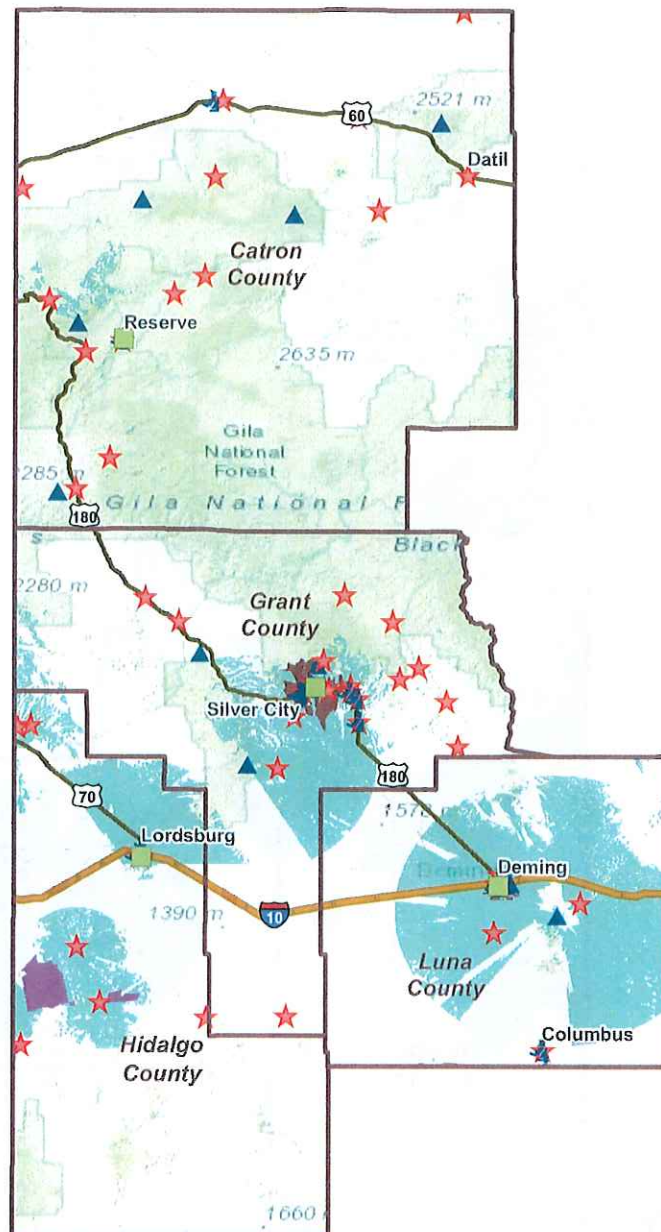
Data: Telecom Providers, current as of October 1, 2013  
Broadband Program: <http://www.doit.state.nm.us/broadband>  
Contact: [nm.broadband@state.nm.us](mailto:nm.broadband@state.nm.us)





# Public Safety Facilities

## Southwest New Mexico Council of Governments (SWCOG)



### Legend

- EOC
- ▲ Law Enforcement
- ★ Fire Station
- ▲ State Telecom Site
- City/Town
- Interstate
- US Highway
- Fiber Coverage Area
- Cable Coverage Area
- Fixed Wireless Coverage Area



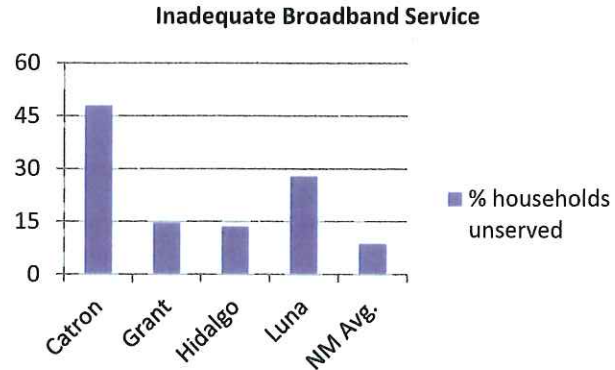
0 10 20 40 Miles

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# Broadband Availability

## Southwest New Mexico Council of Governments (SWCOG)



**Population (2010 Census):** 63,228

**Household (2010 Census):** 31,374

### List of Available Broadband Providers

- |                                |   |
|--------------------------------|---|
| • AT&T Mobility, LLC           | • TransWorld Network, Corp.             |
| • CenturyLink                  | • Valley Telecom Group                  |
| • Comcast                      | • Verizon Wireless                      |
| • Cricket Communications, Inc. | • WNM Communications                    |
| • Cyber Mesa Telecom           | • Hughes Network Systems <sup>§</sup>   |
| • Level 3 Communications, LLC  | • Skycasters <sup>§</sup>               |
| • Sprint                       | • Star Band Communications <sup>§</sup> |
| • T-mobile                     | • ViaSat, Inc. <sup>§</sup>             |

### Available Types of Technology

Cable, DSL, Fiber, Fixed Wireless, Mobile Wireless and Satellite

### Available Speeds\*

- Maximum Advertised Download: 10 Mbps - 25 Mbps
- Minimum Advertised Download: 1.5 Mbps - 3 Mbps
- Maximum Advertised Upload: 1.5 Mbps - 3 Mbps
- Minimum Advertised Upload: 200 Kbps - 768 Kbps

### Notes

- Broadband Data: Telecommunication Providers, as of October 1, 2013
- Demographic Data: US Census Bureau 2010 Decennial Census
- Geographic Data: EDAC/RGIS (Resource Geographic Information System, [rgis.unm.edu](http://rgis.unm.edu))
- % households: Graph provides approximate percentage of county households not served, dependent on data provided by the Telecommunication Provider. % households not served is shown only for wire-line customers (Cable, DSL and Fiber).

<sup>§</sup> Satellite Service Provider (satellite coverage is statewide and not displayed on the map)

\* Speed depends on the type of broadband technology





## Memorandum

Date: July 31, 2013

From: Joanne Hovis  
President / Director of Business Consulting

Andrew Afflerbach, Ph.D., P.E.  
Director of Engineering

To: Gar Clarke  
Broadband Program Manager  
Department of Information Technology  
State of New Mexico

Subject: *Pilot Area Supply and Demand Assessment*

The two Pilot Area regions that were selected comprise different population and landscape characteristics, and are served by different broadband technologies and providers. This memo provides an assessment of the available broadband technologies and demand challenges that exist in the Southwest and Northeast Regions.

### **Pilot Area Supply and Demand Assessment**

#### **Southwest Region**

The Southwest Region, comprising the SWNMCOG jurisdictions, presents a mixed broadband picture, largely dominated by DSL and wireless coverage. Although cable modem service is present in limited areas around the population centers of Deming and Silver City, the vast majority of the region's geography is served by DSL and/or wireless service only. Some areas of all four SWNMCOG counties have no broadband service at all, with the exception of satellite, which covers the entire state.

The National Broadband Map (NBM) provides data on broadband coverage for each jurisdiction in the country by population. Figure 1 summarizes wireline broadband coverage as a percentage of population for the four SWNMCOG counties by technology type. Figure 2 does the same for wireless broadband coverage. The providers operating facilities in each county are listed on the New Mexico Broadband Map (NMBM).

Comcast is the exclusive provider of cable modem service in the region. Multiple service providers offer DSL service across the region, including Cyber Mesa Computer Systems Inc.,



CenturyLink, Inc., WNM Communications, and Valley Telecom Group. TransWorld Network, Corp. provides fixed wireless service in limited areas.

**Figure 1: Wireline Broadband Availability in SWNMCOG Region**

Broadband Technology	County	% Population with Service Available <sup>1</sup>	Operates Facilities in County <sup>2</sup>
Fiber	Catron	0.0	N/A
	Grant	0.0	N/A
	Hidalgo	1.3	Level 3 Communications, LLC Valley Telecom Group
	Luna	0.0	N/A
Cable	Catron	0.0	N/A
	Grant	63.7	Comcast
	Hidalgo	0.0	N/A
	Luna	54.5	Comcast
DSL	Catron	55.8	WNM Communications
	Grant	76.3	Cyber Mesa Computer Systems Inc. CenturyLink, Inc. WNM Communications
	Hidalgo	81.6	Valley Telecom Group WNM Communications
	Luna	66.8	CenturyLink, Inc. Valley Telecom Group WNM Communications

<sup>1</sup> Data provided by the National Broadband Map, last updated June 30, 2012. <http://www.broadbandmap.gov/>, accessed June 27, 2013.

<sup>2</sup> Providers listed on the New Mexico Broadband Map, <http://nmbbmapping.org/mapping/>.





**Figure 2: Wireless Broadband Availability in SWNMCOG Region**

Broadband Technology	County	% Population with Service Available <sup>3</sup>	Operates Facilities in County <sup>4</sup>
Wireless (Mobile and Fixed)	Catron	36.6	AT&T (Mobile) TransWorld Network, Corp. (Fixed) Verizon Wireless (Mobile)
	Grant	95.4	AT&T (Mobile) Sprint (Mobile) T-Mobile (Mobile) TransWorld Network, Corp. (Fixed) Verizon Wireless (Mobile)
	Hidalgo	96.2	AT&T (Mobile) Sprint (Mobile) TransWorld Network, Corp. (Fixed) Verizon Wireless (Mobile)
	Luna	99.6	AT&T (Mobile) Sprint (Mobile) T-Mobile (Mobile) TransWorld Network, Corp. (Fixed) Verizon Wireless

The New Mexico Broadband Mapping Program provides maps of the service footprint of each broadband technology type by county. The following figures show broadband coverage by technology type for each of the four SWNMCOG counties.<sup>5</sup>

<sup>3</sup> Data provided by the National Broadband Map, last updated June 30, 2012. <http://www.broadbandmap.gov/>, accessed June 27, 2013.

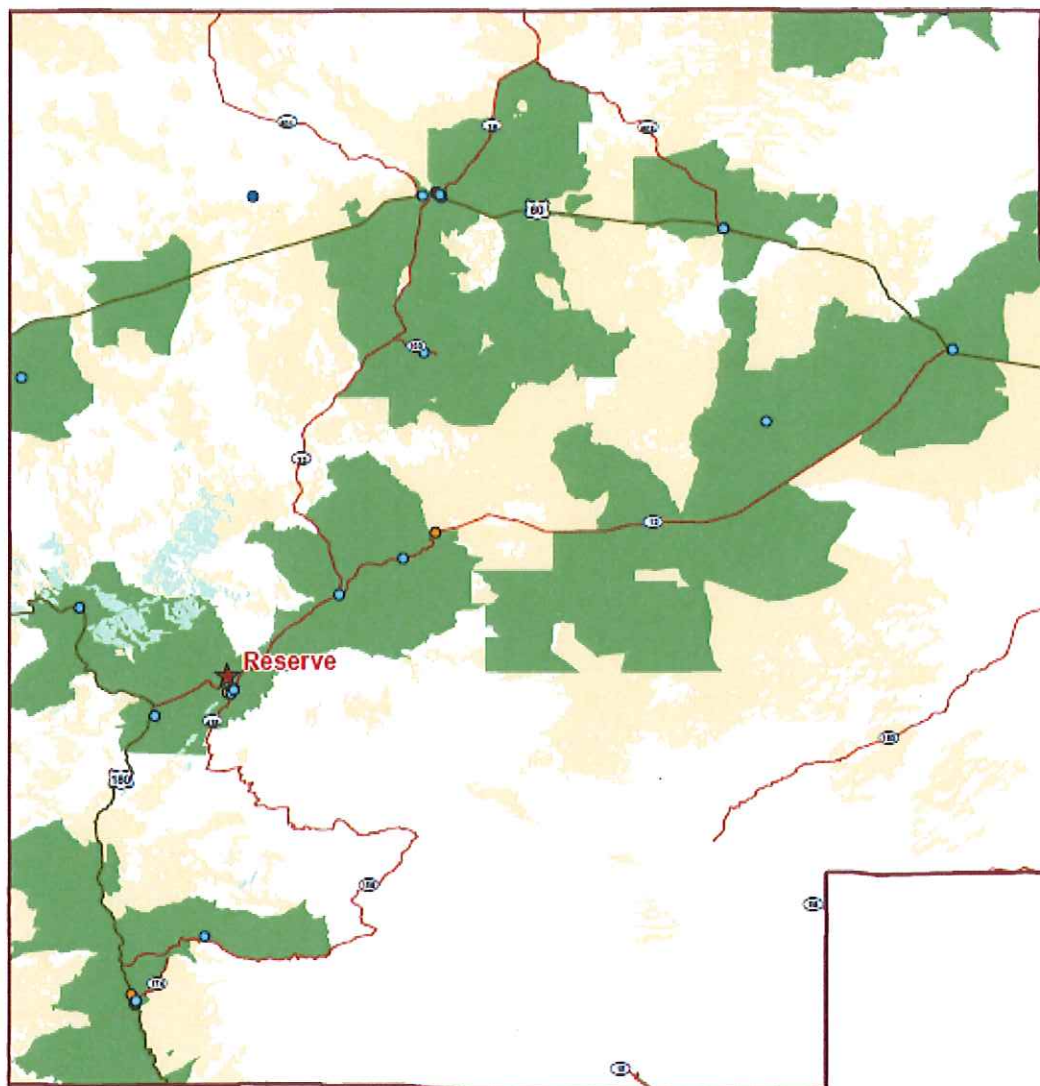
<sup>4</sup> Providers listed on the New Mexico Broadband Map, <http://nmbbmapping.org/mapping/>.

<sup>5</sup> Source: [http://www.doit.state.nm.us/broadband/map\\_county\\_availability.shtml](http://www.doit.state.nm.us/broadband/map_county_availability.shtml), June 27, 2013.





**Figure 3: New Mexico Broadband Mapping Program—Broadband Availability in Catron County**

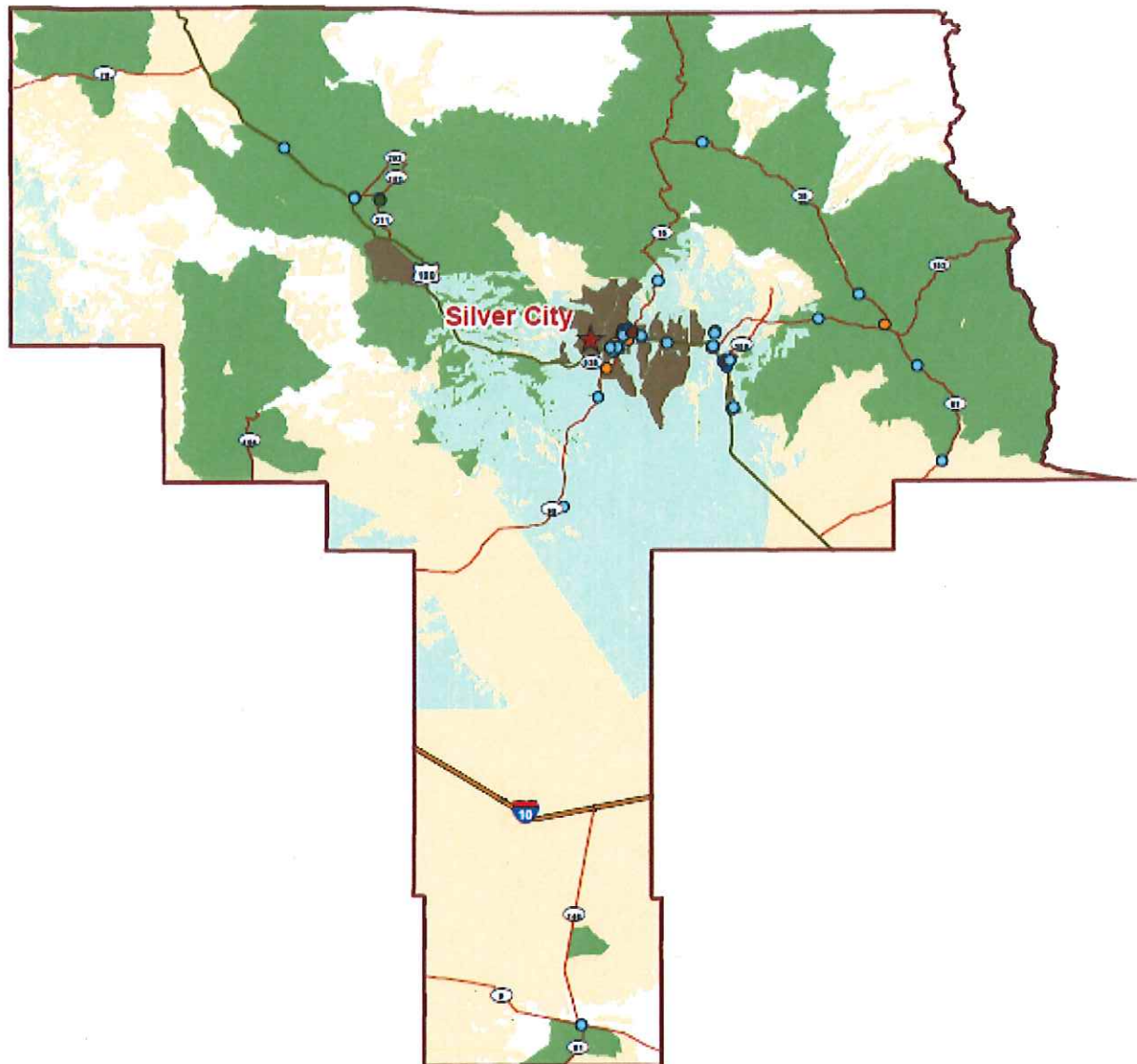


**Legend**

- |   |  |
|---|--|
| <span style="display: inline-block; width: 15px; height: 10px; background-color: green; border: 1px solid black;"></span> DSL Coverage  | <span style="display: inline-block; width: 10px; height: 10px; background-color: orange; border: 1px solid black;"></span> School - K through 12                   |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: lightblue; border: 1px solid black;"></span> Fixed Wireless Coverage                                 | <span style="display: inline-block; width: 10px; height: 10px; background-color: darkblue; border: 1px solid black;"></span> Library                               |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: yellow; border: 1px solid black;"></span> Mobile Wireless Coverage                                   | <span style="display: inline-block; width: 10px; height: 10px; background-color: lightblue; border: 1px solid black;"></span> Medical/healthcare                   |
| <span style="display: inline-block; width: 20px; border-bottom: 2px solid black;"></span> US Highway  | <span style="display: inline-block; width: 10px; height: 10px; background-color: mediumblue; border: 1px solid black;"></span> Public safety                       |
| <span style="display: inline-block; width: 20px; border-bottom: 2px solid red;"></span> State Highway   | <span style="display: inline-block; width: 10px; height: 10px; background-color: red; border: 1px solid black;"></span> University, college, other post-secondary  |
| <span style="display: inline-block; width: 0; height: 0; border-left: 5px solid transparent; border-right: 5px solid transparent; border-bottom: 10px solid red;"></span> County Seat | <span style="display: inline-block; width: 10px; height: 10px; background-color: darkbrown; border: 1px solid black;"></span> Other community support - Government |
|   | <span style="display: inline-block; width: 10px; height: 10px; background-color: pink; border: 1px solid black;"></span> Other community support - Non Government  |



**Figure 4: New Mexico Broadband Mapping Program—Broadband Availability in Grant County**



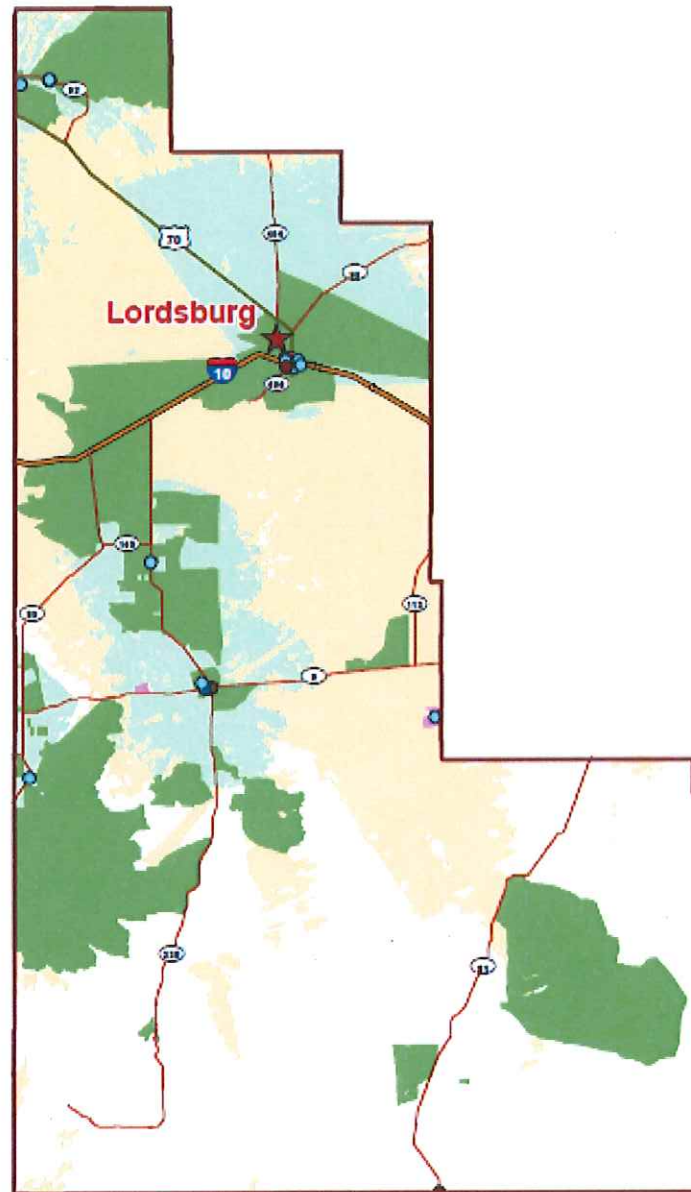
### Legend

- |                          |   |
|--------------------------|---|
| Cable Coverage           | County Seat                               |
| Copper Wire Coverage     | School - K through 12                     |
| DSL Coverage             | Library                                   |
| Fixed Wireless Coverage  | Medical/healthcare                        |
| Mobile Wireless Coverage | Public safety                             |
| Interstate               | University, college, other post-secondary |
| US Highway               | Other community support - Government      |
| State Highway            | Other community support - Non Government  |





Figure 5: New Mexico Broadband Mapping Program—Broadband Availability in Hidalgo County



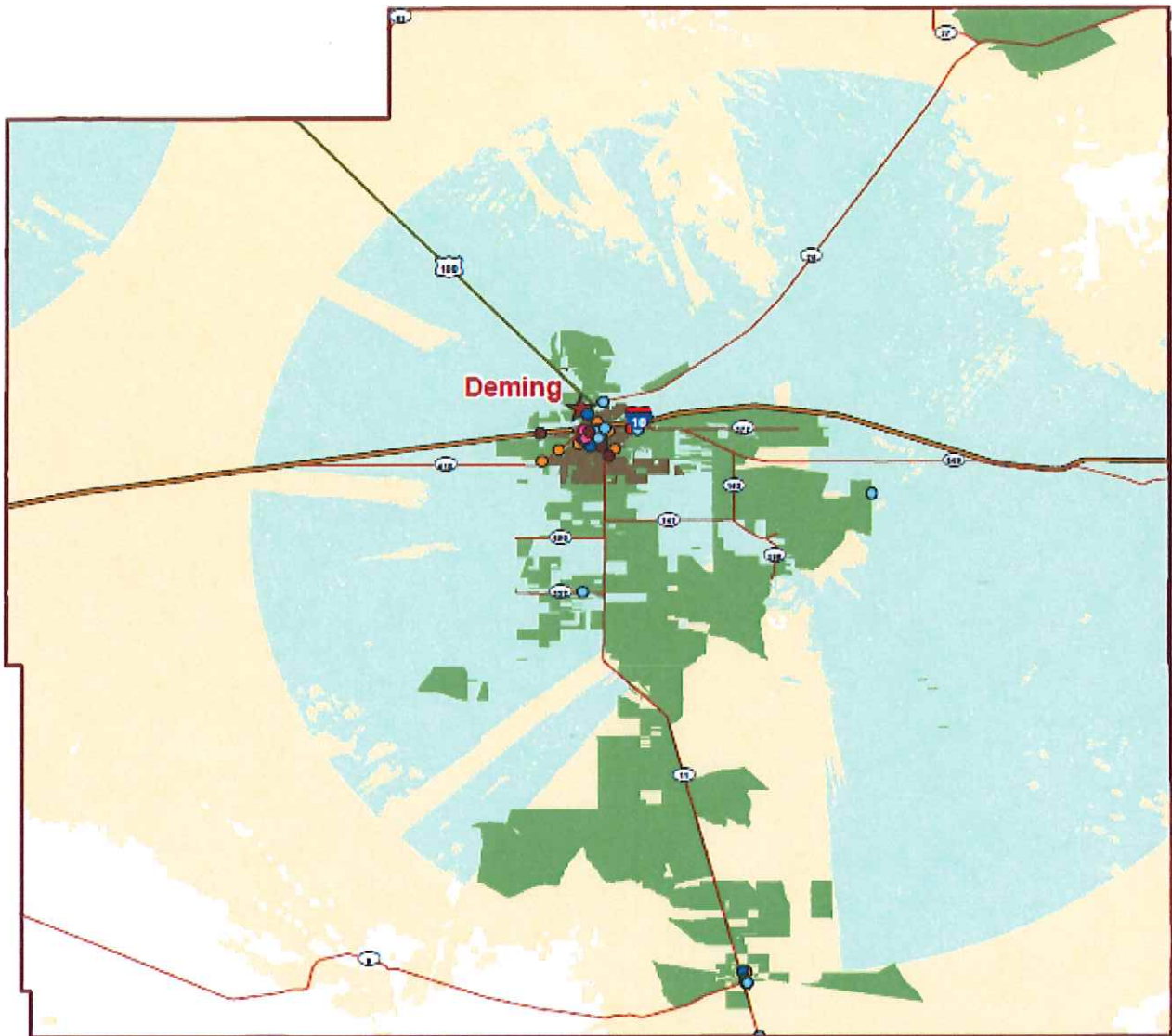
### Legend

- |   |   |
|---|---|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></span> DSL Coverage                | <span style="display: inline-block; width: 10px; height: 10px; background-color: orange; border: 1px solid black;"></span> School - K through 12                  |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: purple; border: 1px solid black;"></span> Fiber Coverage             | <span style="display: inline-block; width: 10px; height: 10px; background-color: darkgreen; border: 1px solid black;"></span> Library                             |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: lightblue; border: 1px solid black;"></span> Fixed Wireless Coverage | <span style="display: inline-block; width: 10px; height: 10px; background-color: blue; border: 1px solid black;"></span> Medical/healthcare                       |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; border: 1px solid black;"></span> Mobile Wireless Coverage   | <span style="display: inline-block; width: 10px; height: 10px; background-color: lightblue; border: 1px solid black;"></span> Public safety                       |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: brown; border: 1px solid black;"></span> Interstate                  | <span style="display: inline-block; width: 10px; height: 10px; background-color: red; border: 1px solid black;"></span> University, college, other post-secondary |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: brown; border: 1px solid black;"></span> US Highway                  | <span style="display: inline-block; width: 10px; height: 10px; background-color: darkred; border: 1px solid black;"></span> Other community support - Government  |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: red; border: 1px solid black;"></span> State Highway                 | <span style="display: inline-block; width: 10px; height: 10px; background-color: pink; border: 1px solid black;"></span> Other community support - Non Government |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: red; border: 1px solid black;"></span> County Seat                   |   |





**Figure 6: New Mexico Broadband Mapping Program—Broadband Availability in Luna County**



### Legend

- |                          |   |
|--------------------------|---|
| Cable Coverage           | County Seat                               |
| Copper Wire Coverage     | School - K through 12                     |
| DSL Coverage             | Library                                   |
| Fixed Wireless Coverage  | Medical/healthcare                        |
| Mobile Wireless Coverage | Public safety                             |
| Interstate               | University, college, other post-secondary |
| US Highway               | Other community support - Government      |
| State Highway            | Other community support - Non Government  |



These rural and sparsely populated counties show a pattern of broadband deployment consistent with many other underserved regions. The population centers, such as Deming and Silver City, include a variety of broadband offerings; in the more remote areas however, particularly within the mountainous regions, wireline broadband coverage is patchy, and carried on DSL circuits only. Wireless broadband is also inconsistent across the region. Fixed wireless service is available in limited zones in each county. Mobile wireless coverage is greater, but falls off in remote areas, and includes only a small amount of high end LTE service.

There is no fiber-to-the-home service in the Southwest Region. Cable modem coverage is, for the most part, limited to the population centers in these counties. Comcast, which is the sole provider of cable modem service in the region, serves the municipalities of Silver City and Deming, the county seats of Grant and Luna counties respectively. These communities, where population density is highest, (albeit still quite low), are outliers in an otherwise underserved part of the state. These population centers, almost exclusively, account for the cable modem availability in the region.

The following table shows the advertised download speeds and costs of home broadband services in the City of Deming for fixed wireless, DSL, and cable services. Since these services reflect availability in one of the few population centers throughout the four counties, this information reflects a best case scenario of service availability for a residential user in the region. Most users throughout the Southwest Region would not have all of these service options available, and many would receive DSL service from different telephone companies (listed above).

**Figure 7: Residential Broadband Offerings in Deming<sup>6</sup>**

Max. Download	Monthly Cost (Without discounts or modem rental)
<b><u>Fixed Wireless – TransWorld Network, Corp.</u></b>	
512 Kbps	\$39.95
2 Mbps	\$43.95
4 Mbps	\$59.95
6 Mbps	\$75.95
6 Mbps with increased upload speeds	\$86.95
<b><u>DSL – CenturyLink</u></b>	
1.5 Mbps	\$40

<sup>6</sup> Sources:

<http://wi-power.com/rates-plus.html>

<http://www.centurylink.com/home/internet/>

<http://www.comcast.com/internet-service.html>

Based on searches for service availability in zip codes 88030, June 27, 2013.





Max. Download	Monthly Cost (Without discounts or modem rental)
7 Mbps	\$45
12 Mbps	\$50
<b><u>Cable – Comcast<sup>7</sup></u></b>	
3 Mbps	\$39.95
6 Mbps	\$49.95
20 Mbps	\$42.95 to \$64.95
50 Mbps	\$74.95

Comcast's cable service options in Deming are comparable to those in larger urban areas, though some jurisdictions offer higher download speed tiers, and slightly more competitive prices. The following table shows cable service offerings in different jurisdictions for comparison.

**Figure 8: Cable Modem Service Offerings in SWNMCOG Region<sup>8</sup>**

Max. Download	Monthly Cost (Without discounts or modem rental)
<b><u>Deming, NM: Comcast</u></b>	
3 Mbps	\$39.95
6 Mbps	\$49.95
20 Mbps	\$42.95 to \$64.95
50 Mbps	\$74.95
<b><u>Denver, CO: Comcast</u></b>	
3 Mbps	\$39.95
6 Mbps	\$49.95
20 Mbps	\$42.95 to \$64.95
50 Mbps	\$74.95
105 Mbps	\$114.95
<b><u>Tucson, AZ: Cox Communications</u></b>	
5 Mbps	\$41.99
25 Mbps	\$55.99
50 Mbps	\$67.99
150 Mbps	\$99.99

<sup>7</sup> Comcast modem rental is \$7 per month; various discounts are available when bundled with TV and voice service.

<sup>8</sup> Sources:

<http://www.comcast.com/internet-service.html>

<http://ww2.cox.com/residential/arizona/internet/internet-packages.cox?campcode=gntile r internet preferred>

Based on searches for service availability in zip codes 88030, 80219, 85716, June 27, 2013.



DSL service is far more prevalent in the region. However, the quality of DSL signal strength varies greatly, and diminishes in remote regions where central offices are farther from end users. In some cases, the signal degrades to the point where service is no longer truly available, though the provider's footprint may show availability that is reflected in the state's broadband mapping efforts. As a result, the true coverage of DSL in the Southwest Region is likely somewhat narrower than shown in the maps above. Finally, although DSL service is slower and less reliable than cable modem service, its price is often comparable to that of cable. It is, therefore, a wireline broadband service that typically only makes sense where no other option is available. The following table shows the advertised pricing for DSL services in the Southwest region.

**Figure 9: DSL Service Offerings in SWNMCOG Region<sup>9</sup>**

<b>Max. Download</b>	<b>Monthly Cost (Without discounts or modem rental)</b>
<b><u>DSL – CenturyLink (Deming)</u></b>	
1.5 Mbps	\$40
7 Mbps	\$45
12 Mbps	\$50
<b><u>DSL – Cyber Mesa (Silver City)</u></b>	
1.5 Mbps	\$35
3 Mbps	\$45
7 Mbps	\$59
<b><u>DSL – WNM Communications - Residential (Silver City)</u></b>	
256 Kbps	\$42.95
512 Kbps	\$52.95
756 Kbps	\$34.95
1.5 Mbps	\$62.95
<b><u>DSL – WNM Communications - Business</u></b>	
256 Kbps	\$42.95
512 Kbps	\$57.95
1.5 Mbps	\$72.95
<b><u>DSL – Valley Telecom</u></b>	
3 Mbps, bundled with phone	\$64.95
5 Mbps, bundled with	\$74.95

<sup>9</sup> Sources:

<http://www.centurylink.com/home/internet/>

<http://www.cybermesa.com/Standalone.htm>

<http://www.wnmc.com/hspeed>

<http://www.vtc.net/page.php?page=internet>

Based on availability in zip codes 88030, 80219, and 85716, June 27, 2013.





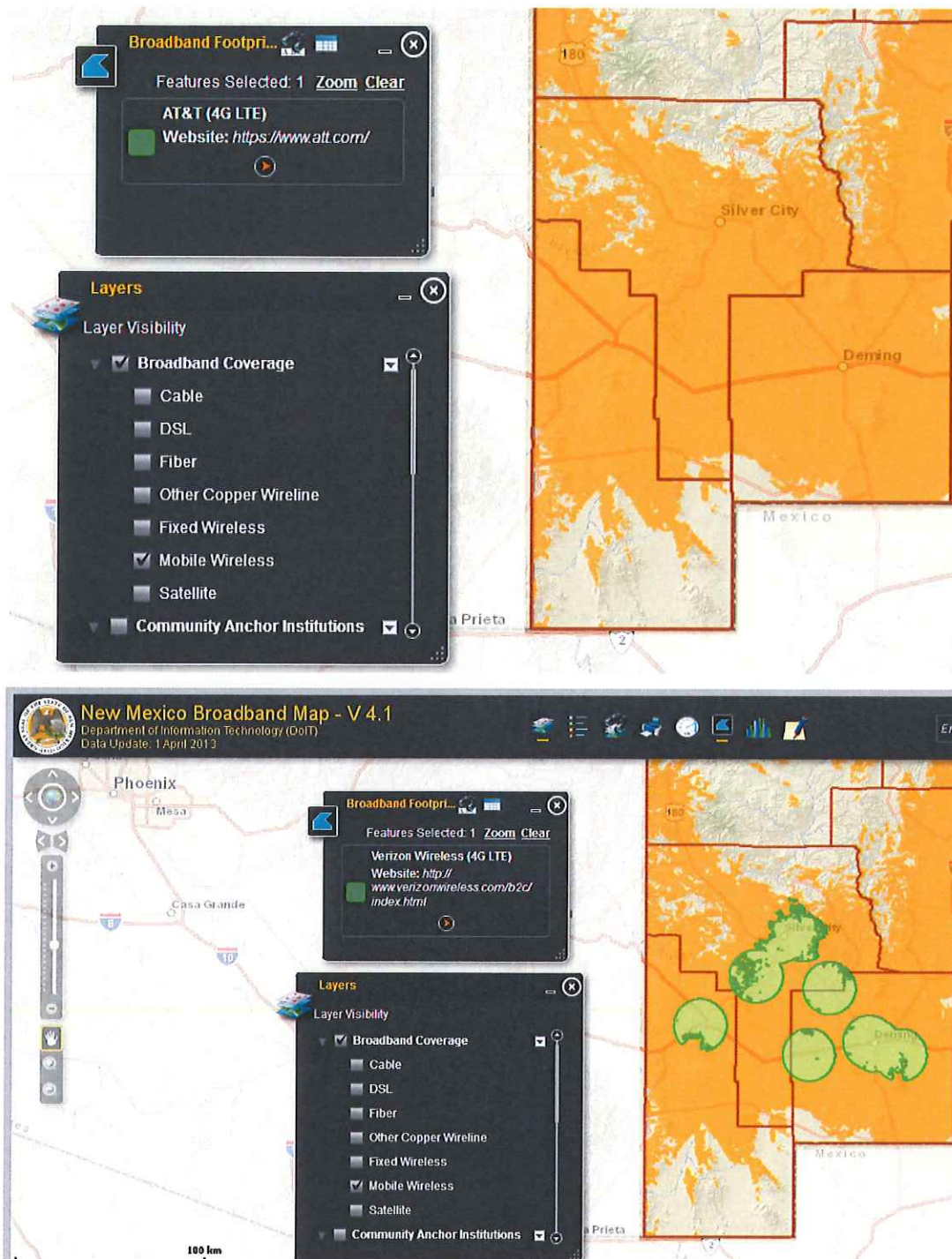
<b>Max. Download</b>	<b>Monthly Cost (Without discounts or modem rental)</b>
phone	

The service offerings listed in the figures above reflect broadband Internet service only. Discounts and price points vary for services when bundled with TV and voice service.

On the mobile wireless side, most of the region does not have access to 4G LTE service, the most high end mobile service currently available on the commercial market. Only AT&T and Verizon offer 4G LTE service in New Mexico. The following figures show the 4G LTE footprint of AT&T and Verizon within the Southwest Region. LTE coverage is shown in green, and all mobile wireless coverage is shown in orange. AT&T offers no 4G LTE service in the region, while Verizon offers limited coverage.



Figure 10: AT&T and Verizon 4G LTE Coverage in SWNMCOG Region<sup>10</sup>



<sup>10</sup> Source: <http://nmbbmapping.org/mapping/>, July 1, 2013.



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1. The first part of the report discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud.

2. The second part of the report focuses on the role of internal controls in ensuring the accuracy and reliability of financial information. It outlines the key components of an effective internal control system, including segregation of duties, authorization, and monitoring.

3. The third part of the report addresses the challenges faced by organizations in implementing and maintaining robust internal controls. It identifies common weaknesses and provides practical recommendations for strengthening the control environment, such as regular training and ongoing monitoring.

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## Northeast Region

The Northeast Region comprises the NEEDO jurisdictions. This region is highly rural, and due to its sparse population and expansive, mountainous topography, has large areas that are entirely unserved by wireline broadband. There are, however, a few small swaths of fiber-to-the-premises service availability, provided by local telephone companies. Cable modem and fixed wireless services are also available only in small zones, while DSL service is offered more widely, though still with large areas unserved. Several areas within the region have no broadband service at all, with the exception of satellite, which covers the entire state.

The National Broadband Map (NBM) provides data on broadband coverage for each jurisdiction in the country by population. Figure 11 summarizes wireline broadband coverage as a percentage of population for the seven NEEDO counties by technology type. Figure 12 does the same for wireless broadband coverage. The providers operating facilities in each county are listed on the New Mexico Broadband Map (NMBM).

Comcast is the exclusive provider of cable modem service in the region, but has a very small service footprint. (Note that in San Miguel County, while Comcast does show a few small coverage areas, the NBM reports that 0.0 percent of the population of the county has cable modem service). Multiple service providers offer DSL service across the region, including CenturyLink, Inc., Plateau Telecommunications, Inc., and Sierra Communications.<sup>11</sup> MegaPath apparently offers T-1 circuits for businesses in a small portion of San Miguel County, though the population served is very small.

**Figure 11: Wireline Broadband Availability in NEEDO Region**

Broadband Technology	County	% Population with Service Available <sup>12</sup>	Operates Facilities in County <sup>13</sup>
Fiber	Colfax	0.3	Baca Valley Telephone Company, Inc. Plateau Telecommunications, Inc.
	Guadalupe	0.0	N/A
	Harding	0.0	N/A
	Mora	6.1	La Jicarita Rural Telephone Cooperative (via Northern New Mexico Telecom) <sup>14</sup>

<sup>11</sup> Panhandle Telephone Cooperative, Inc., though it is listed as a provider on the NMBM, advertises service only in Texas and Oklahoma, which is corroborated by the NBM. <http://www.broadbandmap.gov/about-provider/panhandle-telephone-cooperative-inc./nationwide/#>, July 3, 2013.

<sup>12</sup> Data provided by the National Broadband Map, last updated June 30, 2012. <http://www.broadbandmap.gov/>, accessed June 27, 2013.

<sup>13</sup> Providers listed on the New Mexico Broadband Map, <http://nmbbmapping.org/mapping/>.

<sup>14</sup> <http://www.lajicarita.com/services/internet-services/>, July 2, 2013.



Broadband Technology	County	% Population with Service Available <sup>12</sup>	Operates Facilities in County <sup>13</sup>
	Quay	28.2	Plateau Telecommunications, Inc.
	San Miguel	0.0	Plateau Telecommunications, Inc. (Appears on the NMBM, but NBM shows 0.0 percent of the population served).
	Union	44.4	Baca Valley Telephone Company, Inc. Plateau Telecommunications, Inc. Level 3 Communications, LLC <sup>15</sup>
Cable	Colfax	0.1	Comcast
	Guadalupe	0.0	N/A
	Harding	0.0	N/A
	Mora	0.0	N/A
	Quay	0.0	N/A
	San Miguel	0.0	Comcast (Appears on the NMBM, but NBM shows 0.0 percent of the population served).
	Union	0.0	N/A
DSL	Colfax	68.2	CenturyLink Plateau Telecommunications, Inc. Sierra Communications
	Guadalupe	91.9	Plateau Telecommunications, Inc.
	Harding	58.7	Plateau Telecommunications, Inc.
	Mora	43.6	La Jicarita Rural Telephone Cooperative
	Quay	75.3	CenturyLink Plateau Telecommunications, Inc.
	San Miguel	69.0	CenturyLink Plateau Telecommunications, Inc.
	Union	77.2	Sierra Communications
Other Copper	Colfax	0.0	N/A

<sup>15</sup> The NBM indicates that Level 3 offers service to a total population of 19 throughout the entire state. Actual availability in the region appears to be negligible. Source: <http://www.broadbandmap.gov/about-provider/level-3-communications-llc/in-state-of-new-mexico/>, July 2, 2013.





Broadband Technology	County	% Population with Service Available <sup>12</sup>	Operates Facilities in County <sup>13</sup>
(T-1)	Guadalupe	0.0	N/A
	Harding	0.0	N/A
	Mora	0.0	N/A
	Quay	0.0	N/A
	San Miguel	0.0 <sup>16</sup>	MegaPath Corporation
	Union	0.0	N/A

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<sup>16</sup> NBM reports MegaPath serves a total population of seven in San Miguel County. Source: <http://www.broadbandmap.gov/about-provider/platinum-equity-llc/serving-san-miguel-county-in-new-mexico/>, June 28, 2013.



**Figure 12: Wireless Broadband Availability in NEEDO Region**

Broadband Technology	County	% Population with Service Available <sup>17</sup>	Operates Facilities in County <sup>18</sup>
Wireless (Mobile and Fixed)	Colfax	79.2	AT&T (Mobile) Kit Carson Electric (Fixed) T-Mobile (Mobile) Verizon Wireless (Mobile)
	Guadalupe	85.1	AT&T (Mobile) Sprint (Mobile) T-Mobile (Mobile) Verizon Wireless (Mobile) Southwestern Wireless (Fixed)
	Harding	85.5	Sprint (Mobile) T-Mobile (Mobile) Verizon Wireless (Mobile)
	Mora	20.8	AT&T (Mobile) CNSP, Internet (Fixed) Kit Carson Electric (Fixed) T-Mobile (Mobile) Verizon Wireless (Mobile)
	Quay	96.9	AT&T (Mobile) Plateau Telecommunications, Inc. (Fixed) Southwestern Wireless (Fixed) Sprint (Mobile) T-Mobile (Mobile) Verizon Wireless (Mobile)
	San Miguel	87.0	AT&T (Mobile) CityLink Fiber Holdings, Inc. (Fixed) CNSP, Internet (Fixed) Plateau Telecommunications, Inc. (Fixed) TransWorld Network Corp (Fixed) Verizon Wireless (Mobile)
	Union	89.5	AT&T (Mobile) T-Mobile (Mobile) Verizon Wireless (Mobile)

<sup>17</sup> Data provided by the National Broadband Map, last updated June 30, 2012. <http://www.broadbandmap.gov/>, accessed June 27, 2013.

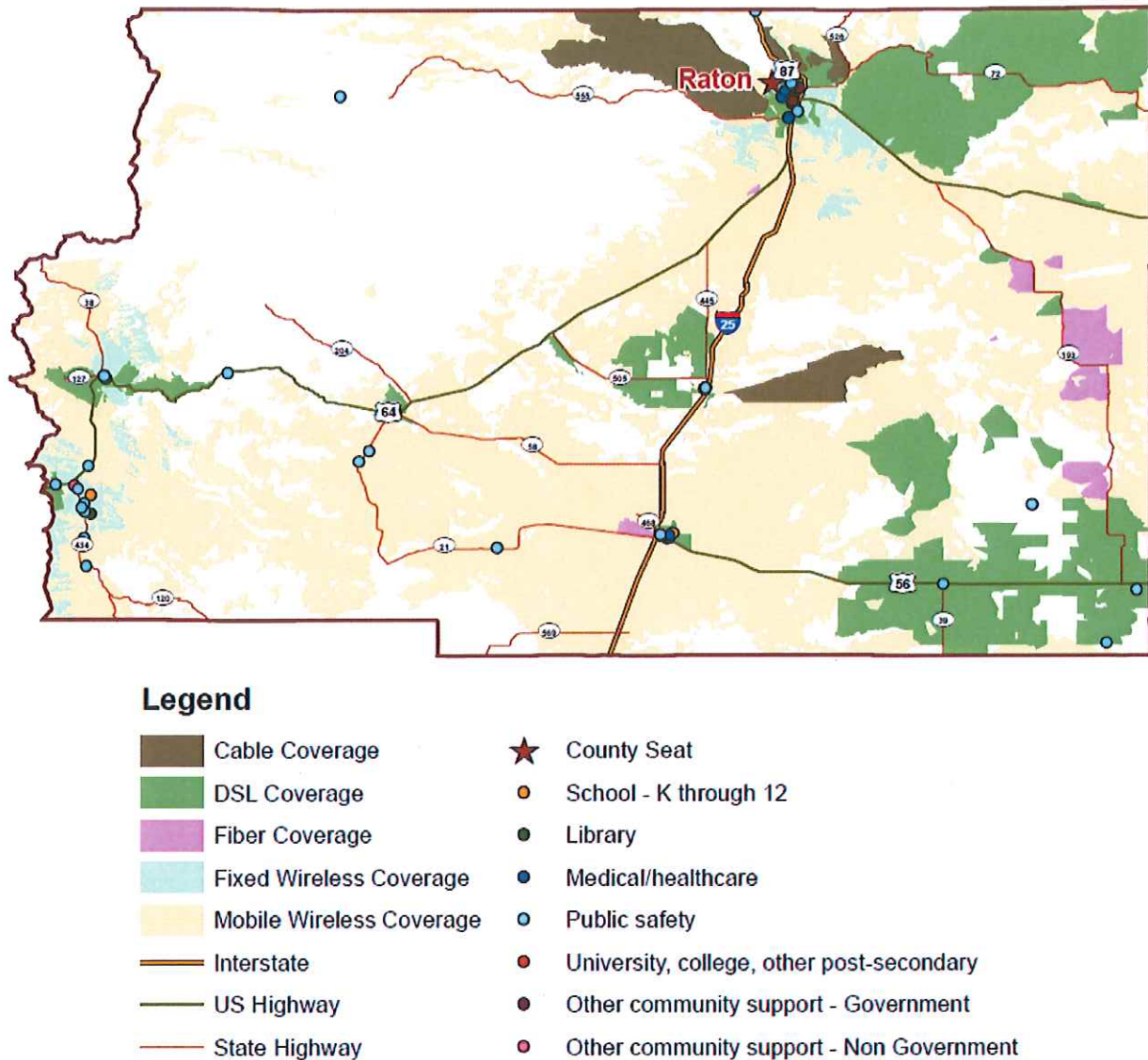
<sup>18</sup> Providers listed on the New Mexico Broadband Map, <http://nmbbmapping.org/mapping/>.





The New Mexico Broadband Mapping Program provides maps of the service footprint of each broadband technology type by county. The following figures show broadband coverage by technology type for each of the seven NEEDO counties.<sup>19</sup>

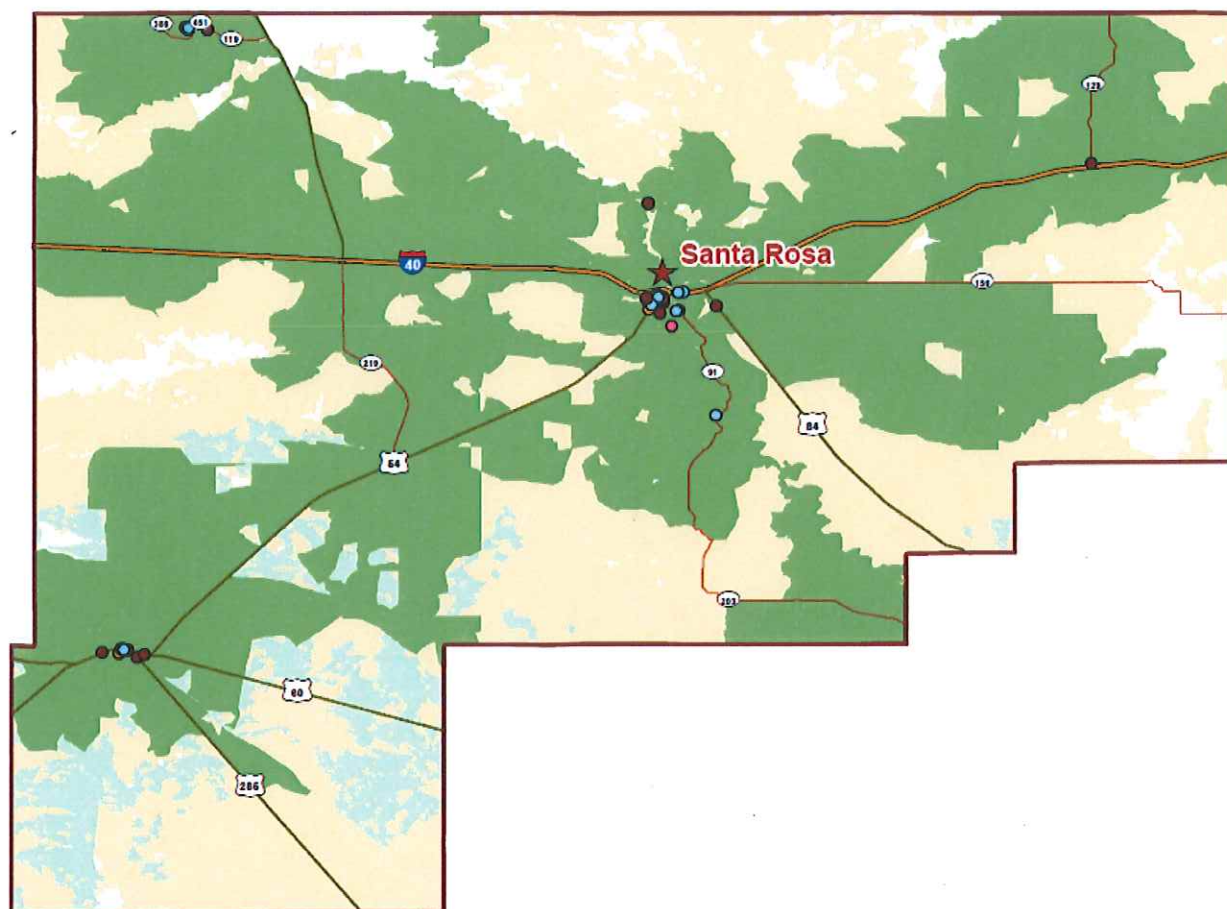
**Figure 13: New Mexico Broadband Mapping Program—Broadband Availability in Colfax County**



<sup>19</sup> [http://www.doit.state.nm.us/broadband/map\\_county\\_availability.shtml](http://www.doit.state.nm.us/broadband/map_county_availability.shtml), June 27, 2013.



Figure 14: New Mexico Broadband Mapping Program—Broadband Availability in Guadalupe County



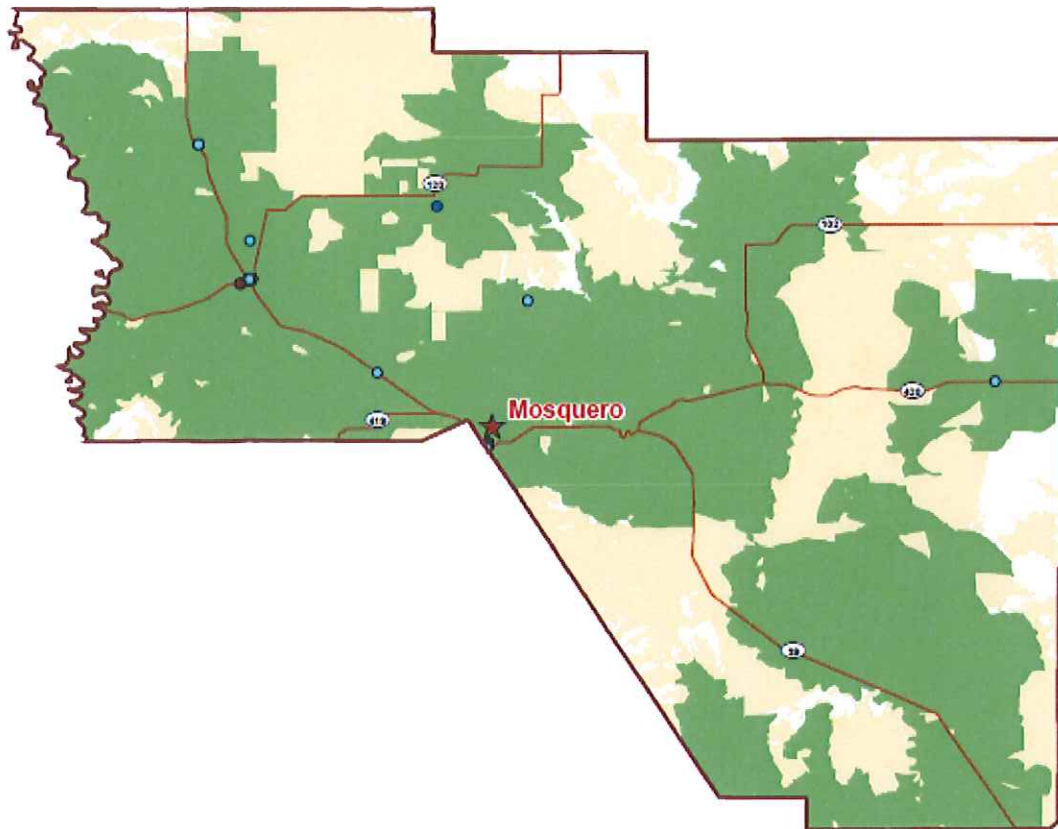
### Legend

- |  |  |
|--|--|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></span> DSL Coverage                   | <span style="display: inline-block; width: 10px; height: 10px; background-color: orange; border: 1px solid black;"></span> School - K through 12                   |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: lightblue; border: 1px solid black;"></span> Fixed Wireless Coverage    | <span style="display: inline-block; width: 10px; height: 10px; background-color: darkgreen; border: 1px solid black;"></span> Library                              |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; border: 1px solid black;"></span> Mobile Wireless Coverage      | <span style="display: inline-block; width: 10px; height: 10px; background-color: blue; border: 1px solid black;"></span> Medical/healthcare                        |
| <span style="display: inline-block; width: 15px; border-bottom: 2px solid brown; margin-bottom: 2px;"></span> Interstate                                 | <span style="display: inline-block; width: 10px; height: 10px; background-color: lightblue; border: 1px solid black;"></span> Public safety                        |
| <span style="display: inline-block; width: 15px; border-bottom: 1px solid brown; margin-bottom: 2px;"></span> US Highway                                 | <span style="display: inline-block; width: 10px; height: 10px; background-color: red; border: 1px solid black;"></span> University, college, other post-secondary  |
| <span style="display: inline-block; width: 15px; border-bottom: 1px solid red; margin-bottom: 2px;"></span> State Highway                                | <span style="display: inline-block; width: 10px; height: 10px; background-color: darkbrown; border: 1px solid black;"></span> Other community support - Government |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: red; clip-path: polygon(50% 0%, 50% 100%, 0% 50%);"></span> County Seat | <span style="display: inline-block; width: 10px; height: 10px; background-color: pink; border: 1px solid black;"></span> Other community support - Non Government  |





Figure 15: New Mexico Broadband Mapping Program—Broadband Availability in Harding County

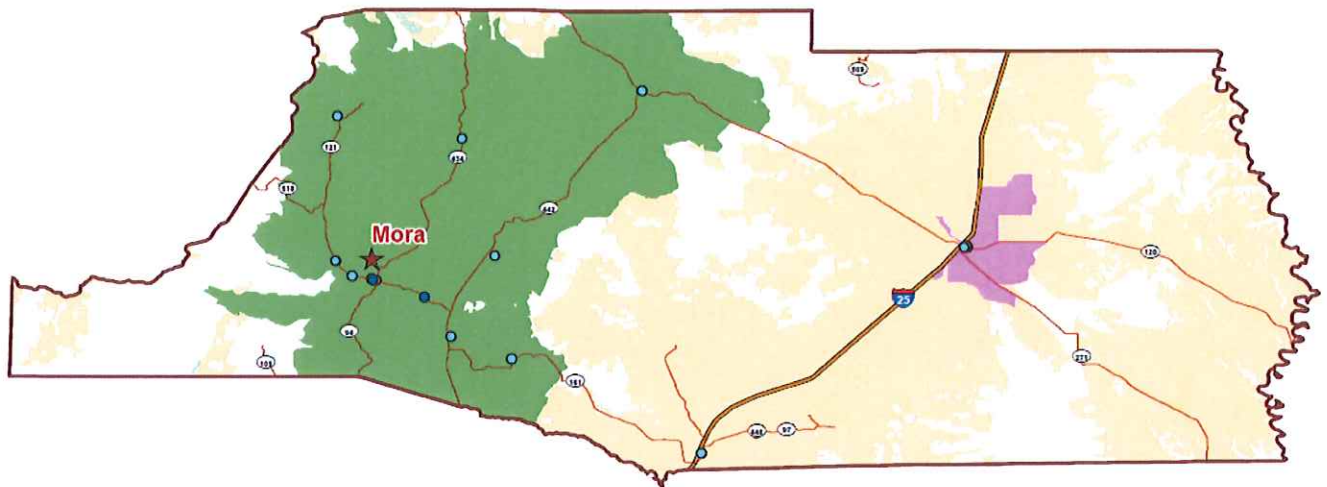


### Legend

- DSL Coverage
- Fiber Coverage
- Mobile Wireless Coverage
- State Highway
- County Seat
- School - K through 12
- Library
- Medical/healthcare
- Public safety
- University, college, other post-secondary
- Other community support - Government
- Other community support - Non Government



**Figure 16: New Mexico Broadband Mapping Program—Broadband Availability in Mora County**



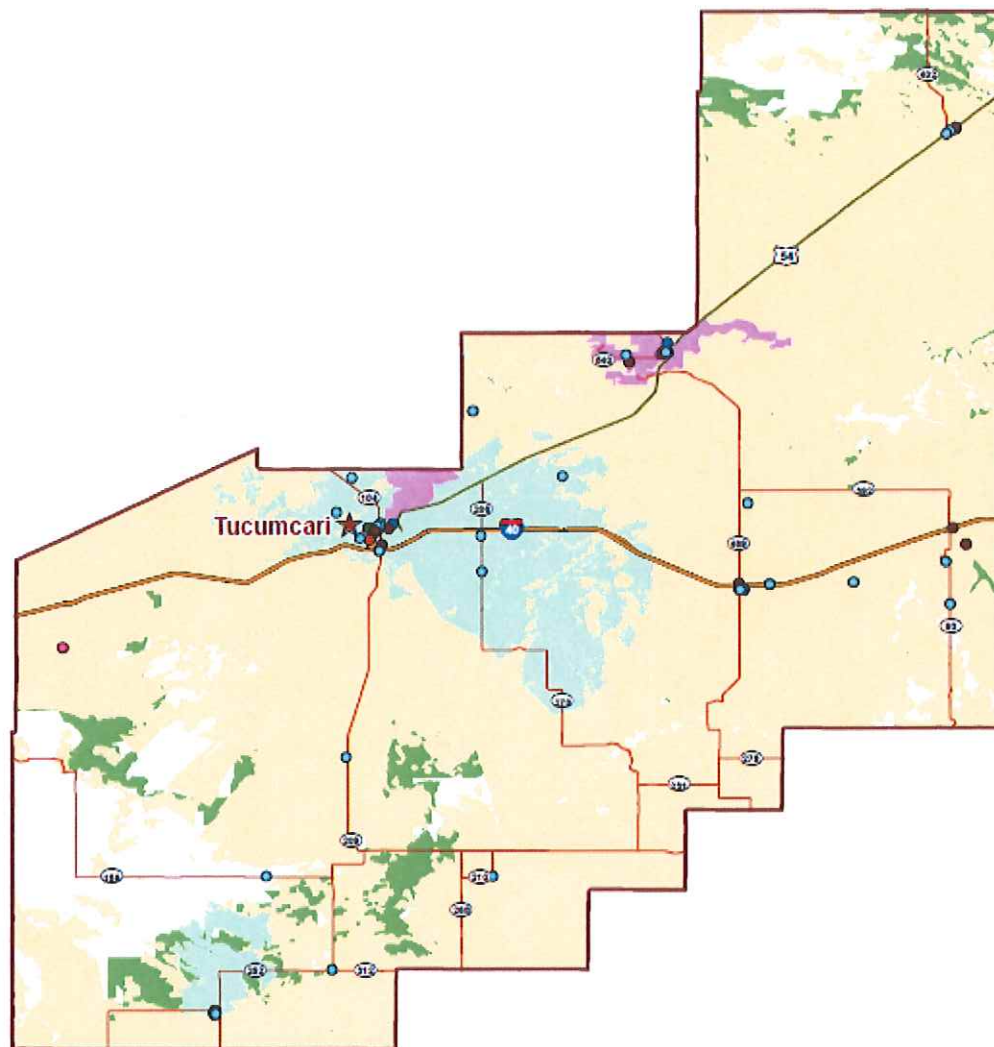
### Legend

- |   |   |
|---|---|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></span> DSL Coverage                        | <span style="display: inline-block; width: 10px; height: 10px; background-color: orange; border: 1px solid black;"></span> School - K through 12                  |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: purple; border: 1px solid black;"></span> Fiber Coverage                     | <span style="display: inline-block; width: 10px; height: 10px; background-color: black; border: 1px solid black;"></span> Library                                 |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: lightblue; border: 1px solid black;"></span> Fixed Wireless Coverage         | <span style="display: inline-block; width: 10px; height: 10px; background-color: blue; border: 1px solid black;"></span> Medical/healthcare                       |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; border: 1px solid black;"></span> Mobile Wireless Coverage           | <span style="display: inline-block; width: 10px; height: 10px; background-color: lightblue; border: 1px solid black;"></span> Public safety                       |
| <span style="display: inline-block; width: 20px; border-bottom: 2px solid black;"></span> Interstate  | <span style="display: inline-block; width: 10px; height: 10px; background-color: red; border: 1px solid black;"></span> University, college, other post-secondary |
| <span style="display: inline-block; width: 20px; border-bottom: 1px solid red;"></span> State Highway   | <span style="display: inline-block; width: 10px; height: 10px; background-color: darkred; border: 1px solid black;"></span> Other community support - Government  |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: red; border: 1px solid black; transform: rotate(45deg);"></span> County Seat | <span style="display: inline-block; width: 10px; height: 10px; background-color: pink; border: 1px solid black;"></span> Other community support - Non Government |





Figure 17: New Mexico Broadband Mapping Program—Broadband Availability in Quay County

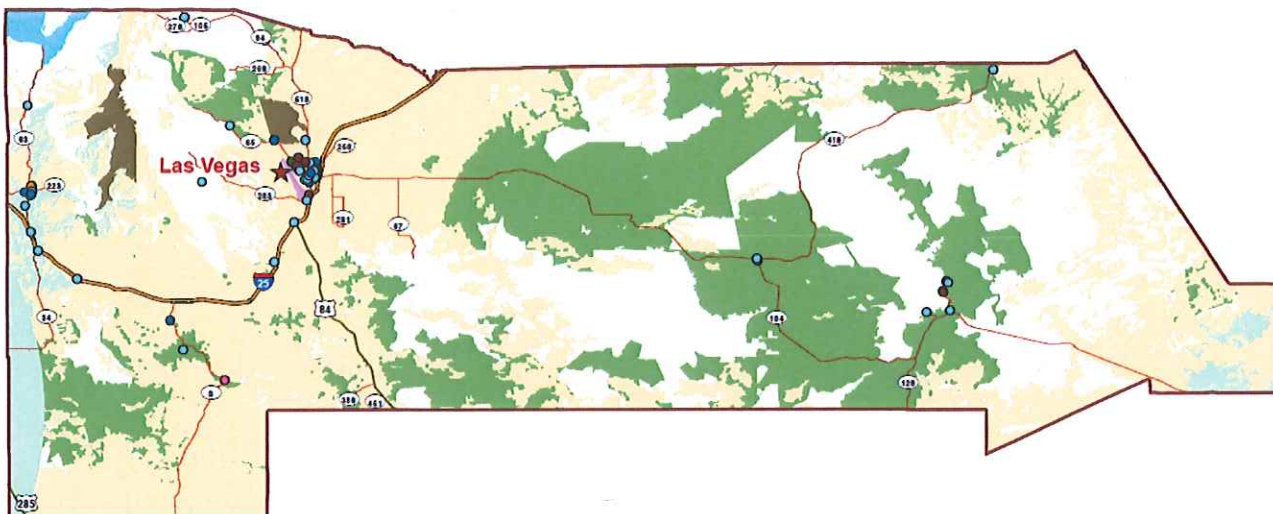


### Legend

- |   |   |
|---|---|
| <span style="display: inline-block; width: 15px; height: 10px; background-color: green; border: 1px solid black;"></span> DSL Coverage  | <span style="display: inline-block; width: 10px; height: 10px; background-color: black; border-radius: 50%; border: 1px solid black;"></span> Library                                 |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: lightblue; border: 1px solid black;"></span> Fixed Wireless Coverage   | <span style="display: inline-block; width: 10px; height: 10px; background-color: blue; border-radius: 50%; border: 1px solid black;"></span> Medical/healthcare                       |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: yellow; border: 1px solid black;"></span> Mobile Wireless Coverage   | <span style="display: inline-block; width: 10px; height: 10px; background-color: brown; border-radius: 50%; border: 1px solid black;"></span> Other community support - Government    |
| <span style="display: inline-block; width: 15px; border-bottom: 2px solid brown; margin-bottom: 2px;"></span> Interstate  | <span style="display: inline-block; width: 10px; height: 10px; background-color: pink; border-radius: 50%; border: 1px solid black;"></span> Other community support - Non Government |
| <span style="display: inline-block; width: 15px; border-bottom: 2px solid green; margin-bottom: 2px;"></span> US Highway  | <span style="display: inline-block; width: 10px; height: 10px; background-color: lightblue; border-radius: 50%; border: 1px solid black;"></span> Public safety                       |
| <span style="display: inline-block; width: 15px; border-bottom: 2px solid red; margin-bottom: 2px;"></span> State Highway   | <span style="display: inline-block; width: 10px; height: 10px; background-color: orange; border-radius: 50%; border: 1px solid black;"></span> School - K through 12                  |
| <span style="display: inline-block; width: 0; height: 0; border-left: 5px solid transparent; border-right: 5px solid transparent; border-bottom: 10px solid red; margin-bottom: 2px;"></span> County Seat | <span style="display: inline-block; width: 10px; height: 10px; background-color: red; border-radius: 50%; border: 1px solid black;"></span> University, college, other post-secondary |



**Figure 18: New Mexico Broadband Mapping Program—Broadband Availability in San Miguel County**

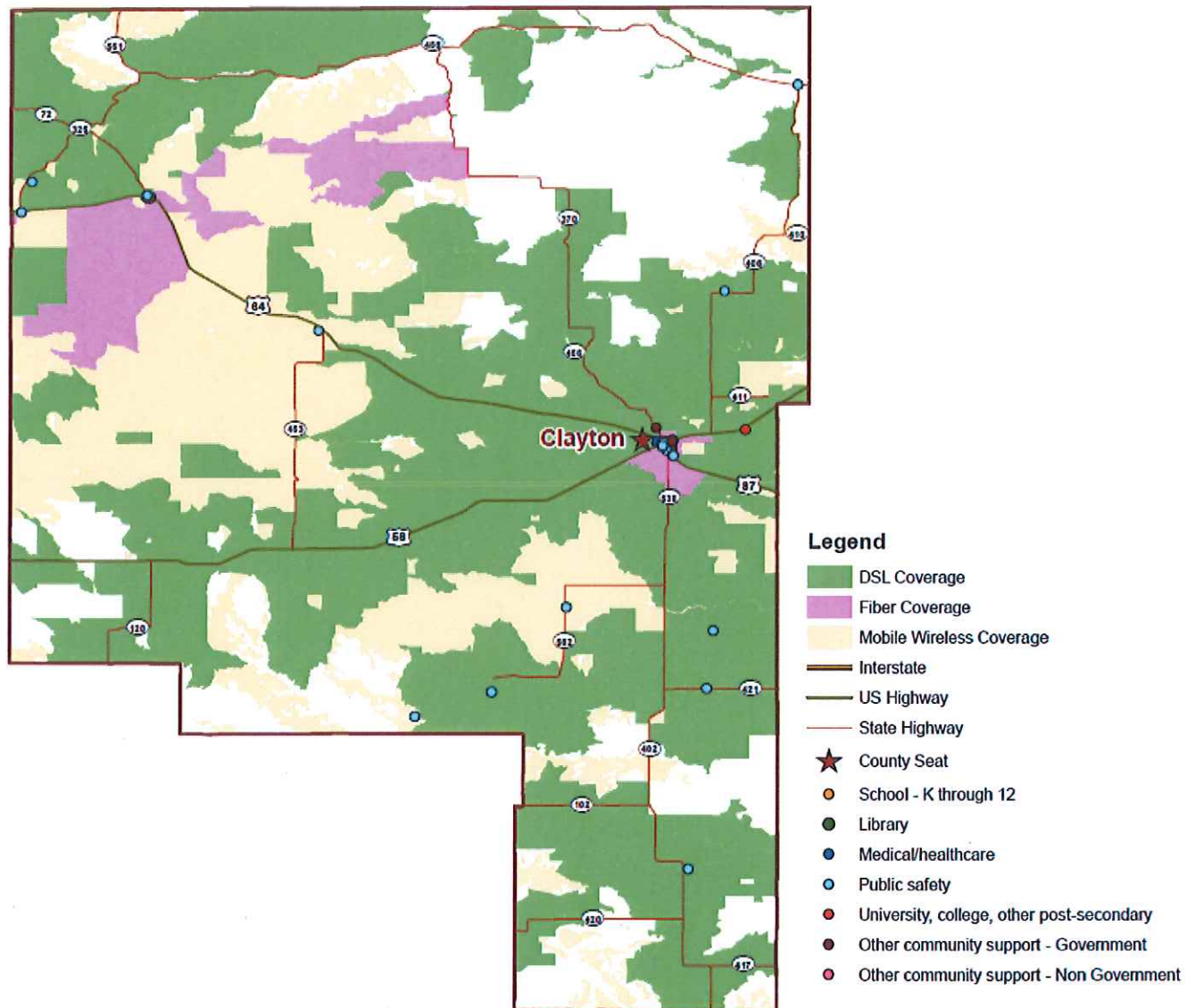


### Legend

- |                          |   |
|--------------------------|---|
| Cable Coverage           | County Seat                               |
| Copper Wire Coverage     | Library                                   |
| DSL Coverage             | Medical/healthcare                        |
| Fiber Coverage           | Other community support - Government      |
| Fixed Wireless Coverage  | Other community support - Non Government  |
| Mobile Wireless Coverage | Public safety                             |
| Interstate               | School - K through 12                     |
| US Highway               | University, college, other post-secondary |
| State Highway            |   |



**Figure 19: New Mexico Broadband Mapping Program—Broadband Availability in Union County**



These rural and sparsely populated counties show a pattern of broadband deployment consistent with many other underserved regions. The region does contain a few population centers, including Clayton, Las Vegas, Raton, and Tucumcari, which include a variety of broadband offerings; in many of the more remote areas however, particularly within the mountainous regions, wireline broadband coverage is patchy, and exclusively carried on DSL circuits. Wireless broadband is also inconsistent across the region. Fixed wireless service is mostly unavailable in the region; a number of providers do offer service, but the service footprint is quite limited and peripheral to the region as a whole. Mobile wireless coverage is greater, but falls off in remote areas, and includes only a small amount of high end LTE service. Fiber-to-the-home service is mostly unavailable in the Northeast Region; however, local telephone companies offer fiber service to a minority of the populations of Mora, Quay, Union





counties, and to a lesser extent, Colfax County. Fiber availability is scattered, but is generally concentrated in the small areas of greater population density, such as Las Vegas and Clayton. Nor does fiber serve all residents of these communities. The most comprehensive coverage appears to be in Clayton, where the NBM reports 70.3 percent access to fiber.<sup>20</sup> These communities, where population density is highest, (albeit still quite low), are outliers in an otherwise underserved region.

There is even less cable modem coverage. Comcast, which is the sole provider of cable modem service in the region, shows a service footprint in Colfax and San Miguel Counties, but the NBM shows that a negligible number of residents are served in those jurisdictions. Cable modem service is essentially not deployed in the Northeast Region.

The following table shows a sample of advertised download speeds and costs of home broadband services for fixed wireless, DSL, and fiber services. These offerings are based on advertised availability in Tucumcari, one of the better served communities in the region. Different services often do not overlap with each other in their specific coverage areas in this region. Most users throughout the Northeast Region would not have all of these service options available, and many would receive service from different providers (listed in Figure 11 and Figure 12 above).

**Figure 20: Residential Broadband Offerings in Tucumcari<sup>21</sup>**

Max. Download	Monthly Cost (Without discounts or modem rental)
<b><u>Fixed Wireless – Plateau</u></b>	
384 Kbps	\$24.95
1.5 Mbps	\$34.95
2.0 Mbps	\$59.95
<b><u>DSL – CenturyLink</u></b>	
1.5 Mbps	\$40
7 Mbps	\$45
12 Mbps	\$50
<b><u>Fiber – Plateau</u></b>	
3 Mbps	\$29.95
5 Mbps	\$39.95
10 Mbps	\$49.95
20 Mbps	\$69.95

<sup>20</sup> Source: <http://www.broadbandmap.gov/summarize/state/new-mexico/census-places/clayton>, accessed July 1, 2013.

<sup>21</sup> Sources:

[http://www.plateautel.com/internet\\_plans.asp?ServiceType=Tucumcari](http://www.plateautel.com/internet_plans.asp?ServiceType=Tucumcari)

<http://www.centurylink.com/home/internet/>

Based on searches for service availability in zip code 88401, July 1, 2013.



The following table shows service offerings from fiber Internet providers La Jicarita Rural Telephone Cooperative and Plateau Telecommunications, Inc. in the Northeast Region. For comparison, Verizon FiOS fiber optic service offerings are displayed for the community of Colleyville, Texas. These offerings include greater speeds, and lower cost-to-speed ratios than those in the Northeast Region.

**Figure 21: Fiber Broadband Offerings in Northeast Region<sup>22</sup>**

Max. Download	Monthly Cost (Without discounts or modem rental)
<b>Fiber and DSL – La Jicarita - Residential<sup>23</sup></b>	
256 Kbps	\$19.95
1.5 Mbps	\$39.95
3 Mbps	\$59.95
6 Mbps	\$79.95
15 Mbps	\$99.95
<b>Fiber and DSL – La Jicarita - Business<sup>24</sup></b>	
1.5 Mbps	\$99.90
3 Mbps	\$139.95
6 Mbps	\$199.95
15 Mbps	\$299.95
<b>Fiber and DSL – La Jicarita - Preferred Business (Symmetrical Download/Upload)<sup>25</sup></b>	
5 Mbps	\$400.00
10 Mbps	\$800.00
<b>Fiber – Plateau - Residential</b>	
3 Mbps	\$29.95
5 Mbps	\$39.95
10 Mbps	\$49.95
20 Mbps	\$69.95
<b>Fiber – Plateau - Business</b>	
3 Mbps	\$39.95

<sup>22</sup> Sources:

[http://www.plateautel.com/internet\\_plans.asp?ServiceType=Tucumcari](http://www.plateautel.com/internet_plans.asp?ServiceType=Tucumcari)

[http://www.plateautel.com/business\\_internet\\_fiber\\_clovis.asp](http://www.plateautel.com/business_internet_fiber_clovis.asp)

<http://www.nnmt.net/hsi.shtml>

<https://www22.verizon.com/home/shop/shopping.htm>

<http://www.verizon.com/smallbusiness/bundleOverview.jsp?smbReferenceValue=SMBBundlesRef#>

Based on searches for service availability in zip codes 88401, 76034, July 1 and 2, 2013.

<sup>23</sup> Includes DSL rates as well (listed offerings do not distinguish by technology type). Additional \$95 setup fee applies.

<sup>24</sup> Id.

<sup>25</sup> Setup fee is \$60 per hour for Preferred Business.





Max. Download	Monthly Cost (Without discounts or modem rental)
8 Mbps	\$69.95
10 Mbps	\$129.95
20 Mbps	\$259.95
<b><u>Fiber – Verizon FiOS – Colleyville, TX (2-year contract)<sup>26</sup> – Residential</u></b>	
15 Mbps	\$69.99
50 Mbps	\$79.99
75 Mbps	\$89.99
<b><u>Fiber – Verizon FiOS – Colleyville, TX (2-year contract)<sup>27</sup> - Business</u></b>	
15 Mbps	\$69.99
50 Mbps	\$79.99
75 Mbps	\$99.99
150 Mbps	\$169.99
300 Mbps	\$259.99

DSL service is far more prevalent in the region. However, the quality of DSL signal strength varies greatly, and diminishes in remote regions where central offices are farther from end users. In some cases, the signal degrades to the point where service is no longer truly available, though the provider's footprint may show availability that is reflected in the state's broadband mapping efforts. Therefore, the true coverage of DSL in the Northeast Region is likely somewhat narrower than shown in the maps above. Finally, although DSL service is slower and less reliable than fiber service, its price is often comparable to that of cable modem or fiber service. It is, therefore, a wireline broadband service that typically only makes sense where no other option is available. The following table shows the advertised pricing for DSL services in the Northeast Region. (Note: DSL offerings from La Jicarita Rural Telephone Cooperative are listed in Figure 21, as they are listed together with fiber offerings. Sierra Communications, Inc., an affiliate of Baca Valley Telephone Company, Inc., resells CenturyLink DSL service at unadvertised prices.<sup>28</sup>)

<sup>26</sup> Higher rates for no contract plans.

<sup>27</sup> Id.

<sup>28</sup> <http://www.bacavalley.com/highspeed.htm>, July 3, 2013.



**Figure 22: DSL Service Offerings in NEEDO Region<sup>29</sup>**

Max. Download	Monthly Cost (Without Discounts)
<b><u>DSL – CenturyLink (Raton)</u></b>	
1.5 Mbps or 3 Mbps	\$29.95
<b><u>DSL – Plateau - Residential</u></b>	
1.5 Mbps	\$34.95
3 Mbps	\$39.95
6 Mbps	\$59.95
10 Mbps	\$99.95
<b><u>DSL – Plateau – Business</u></b>	
3 Mbps	\$39.95
6 Mbps	\$59.95
10 Mbps	\$99.95
15 Mbps	\$149.95
24 Mbps	\$189.95

The service offerings listed in the figures above reflect broadband Internet service only. Discounts and price points vary for services when bundled with TV and voice service.

On the mobile wireless side, the region has virtually no access to 4G LTE service, the most high end mobile service currently available on the commercial market. Only AT&T and Verizon offer 4G LTE service in New Mexico. The following figures show the 4G LTE footprint of AT&T and Verizon within the Northeast Region. LTE coverage is shown in green, and all mobile wireless coverage is shown in orange. AT&T offers no 4G LTE service in the region; Verizon's 4G LTE coverage extends very slightly across the southernmost border of Quay County, but no further.

<sup>29</sup> Sources:

<http://www.centurylink.com/home/internet/>

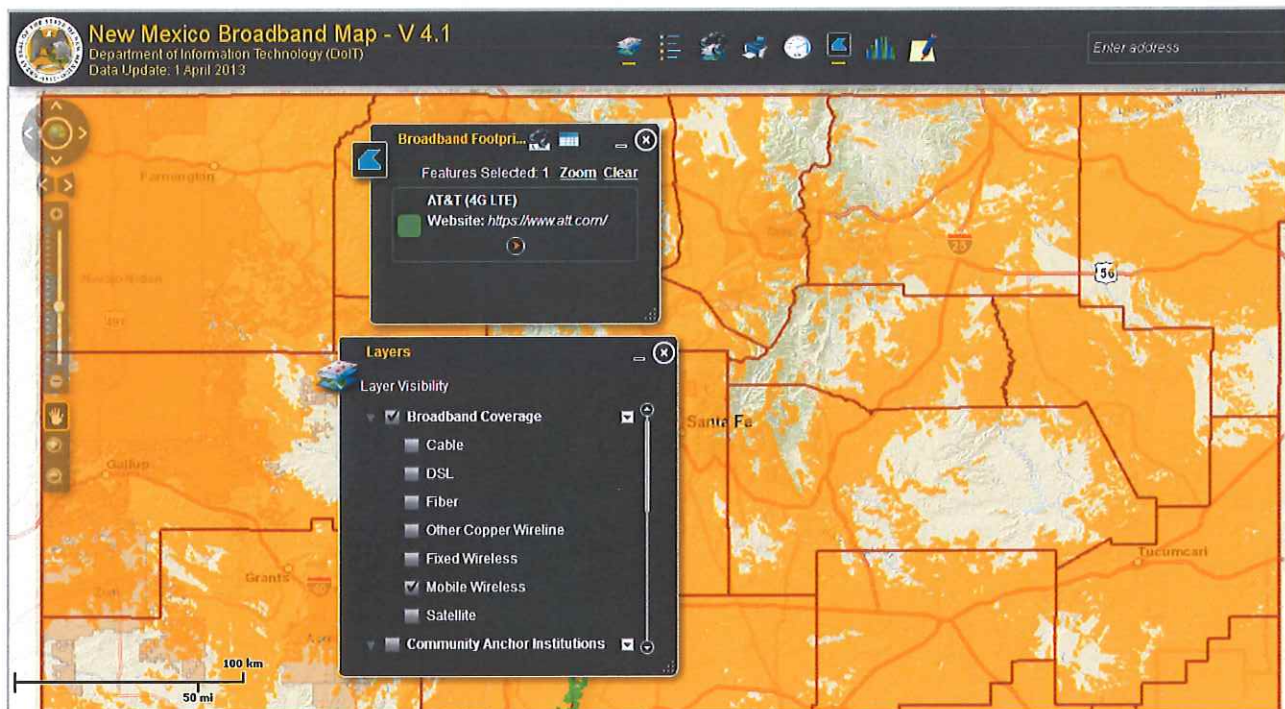
[http://www.plateautel.com/internet\\_plans.asp?ServiceType=coop](http://www.plateautel.com/internet_plans.asp?ServiceType=coop)

<https://www22.verizon.com/home/shop/shopping.htm>

Based on searches for service availability in zip code 87740, July 3, 2013.



Figure 23: AT&T and Verizon 4G LTE Coverage in NEEDO Region<sup>30</sup>



<sup>30</sup> Source: <http://nmbbmapping.org/mapping/>, July 1, 2013.



