THE IMPACT OF BROADBAND ON ECONOMIC DEVELOPMENT

Plateau Telecommunications, Incorporated
Vince Tyson, Chief Operations Officer
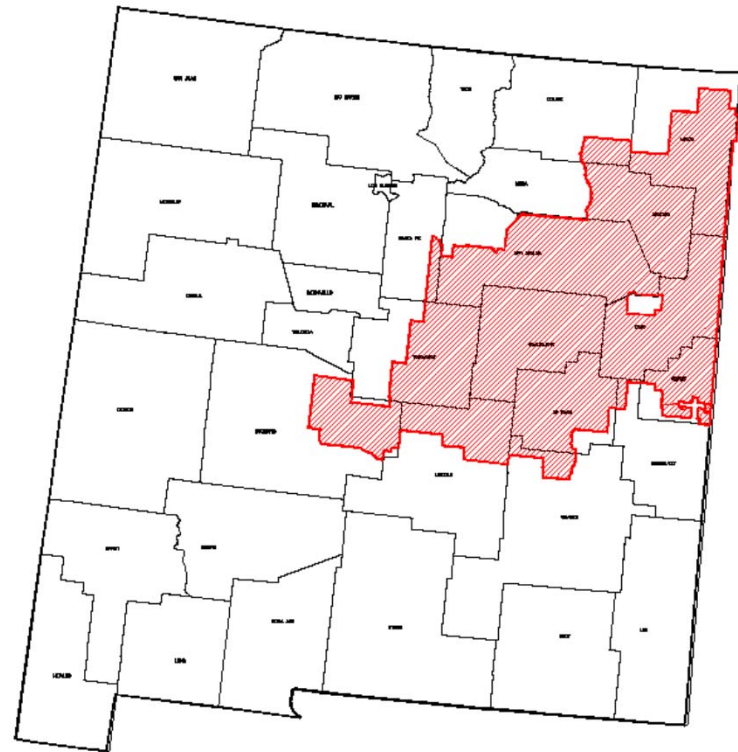July 26, 2017

Plateau Overview

- Plateau is the trademark name for two companies
  - E.N.M.R. Telephone Cooperative – Parent Company
    - Rural part of Plateau that services a large, low-density area of New Mexico and a part of west Texas
  - Plateau Telecommunications, Inc. – Subsidiary
    - Provides competitive services in more urban communities in competition to incumbent telecommunications providers

ENMR Overview

- Co-op founded in 1949
- Serving 25,000 sq. miles
- 1/3 member every sq. mile
- 95% coverage with DSL
- 27 communities with some fiber
- 10 communities overbuilt with fiber
- 1 community in construction
- Provides Voice, Data, Internet, Video, Private Line Transport, and other services

ENMR Cooperative Fiber/Broadband Statistics

Broadband Category	Members	Percentage
Fiber to the Premises Customers	3,797	47%
10+ Mbps DSL	2,181	27%
5 Mbps DSL	323	4%
1.5 Mbps	242	3%
No Broadband Service	1,536	19%*
Total	8,079	

Fiber Upgrade Highlights	
Communities Upgraded to FTTP	Santa Rosa
	Clayton
	Logan
	Ft. Sumner
	Farwell
	Corona
	Roy
	Mosquero
	Grady
	San Jon
	El Valle (in progress)
All ENMR/Plateau school districts are fiber fed	
Approximately 3,740 miles of total fiber (both distribution and transport)	
Approximately 900 of the 6,400 miles of distribution route miles of cable upgraded to fiber	
15 year plan to upgrade remaining copper to fiber with approximately $190 million investment	

*Customers choosing not to purchase broadband services

Plateau Telecommunications

- Wholly owned subsidiary of ENMR
- Providing services in CLEC markets throughout the state
- Internet, Voice, Video services using Fiber to the Premise and Fixed Wireless technology
- First residential Gigabit Service in the state

Gigabit Cities

- Plateau Telecommunications is a wholly owned subsidiary of ENMR and is a licensed CLEC in New Mexico
- Plateau offers Gigabit data plans to residential customers in the following cities
  - Clovis (First to Market)
  - Roswell
  - Tucumcari
  - Las Vegas
  - Edgewood
  - Moriarty
  - Estancia
  - Mountainair
  - Belen
  - Los Lunas
- Please go to the following website for more details
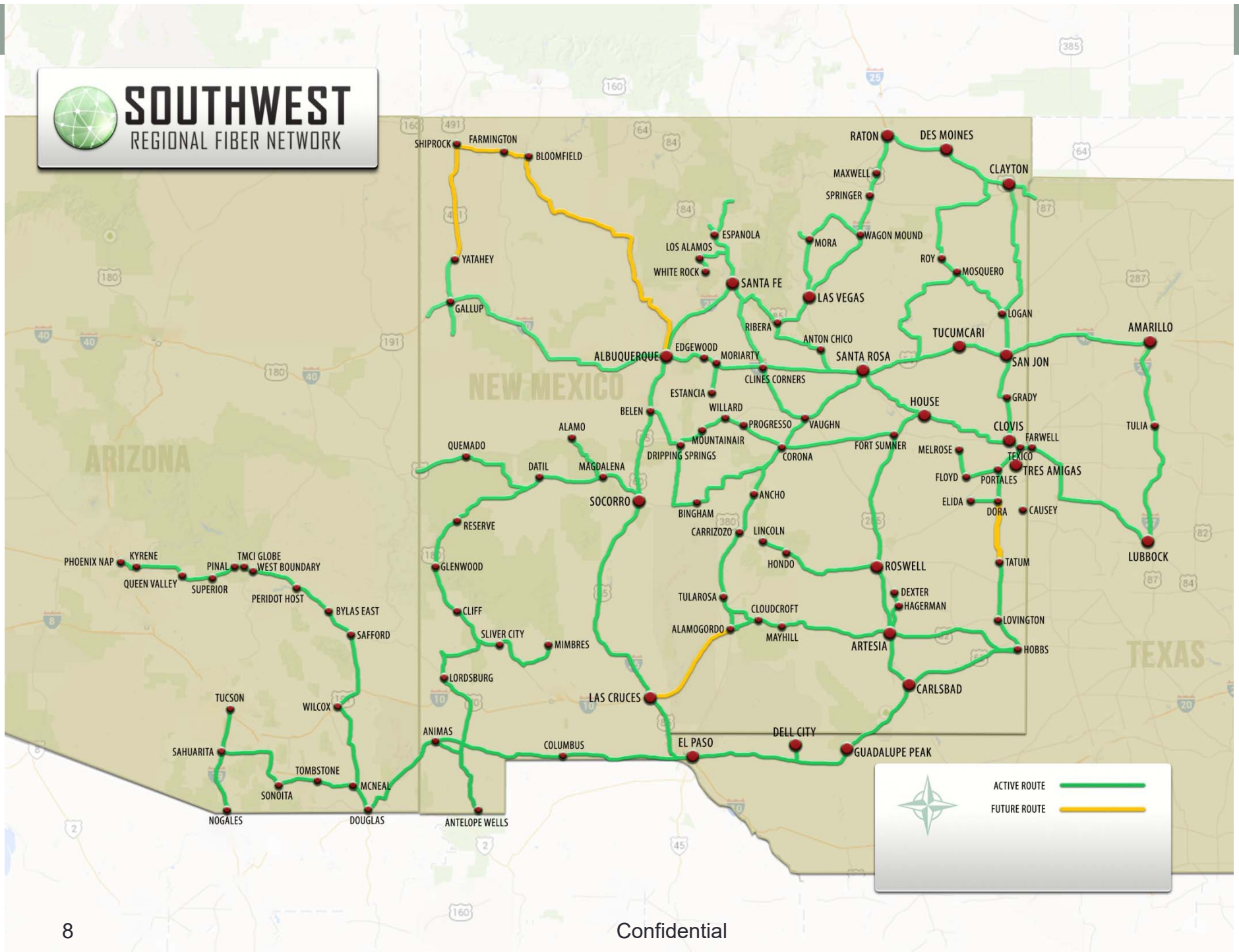 - Gigabit City
    - www.plateaufiber.com

Middle Mile Network

- Plateau has built a high capacity middle mile network
  - Deployed state-of-the-art DWDM (Dense Wave Division Multiplexing) equipment for high capacity long haul fiber circuits
  - Deployed MPLS (Multi-Protocol Label Switching) service routers for advanced services
  - Presence in major POP's such as Albuquerque, Santa Fe, El Paso, Amarillo and Lubbock
  - 672 anchor institutions connected with fiber
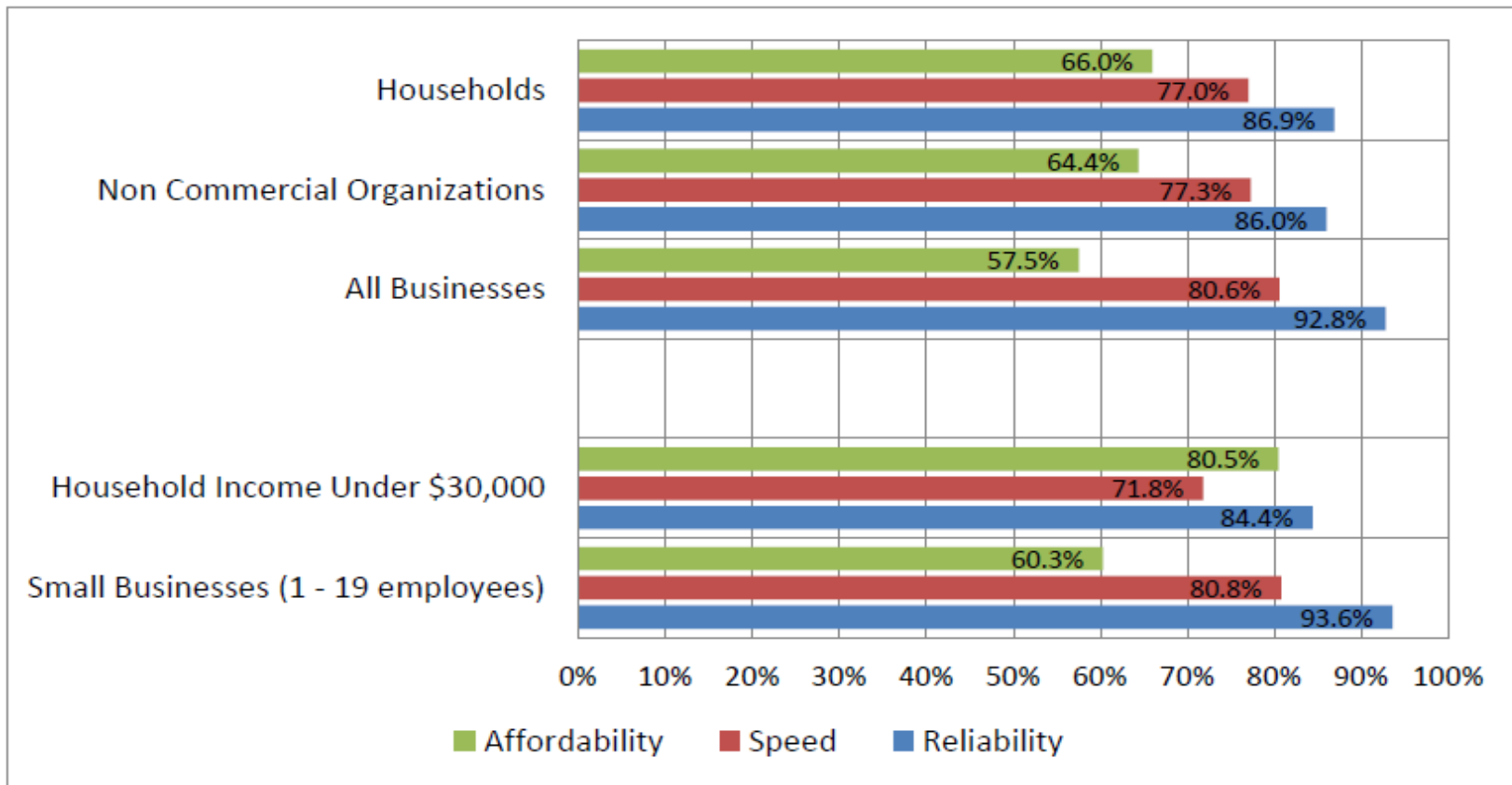 - Fiber interconnections to multiple 3rd parties

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Value of Fiber

- Tennessee Broadband Study
  - Priorities Rated High by Internet Consumers

N: households =16,654; businesses = 3,676; other orgs = 1,377; low income households = 1,562; small businesses = 2,413

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Value of Fiber

- Tennessee Broadband Study
  - Respondent Satisfaction by Type of Connection (Businesses)

	Reliability	Value for Price
	Frequent or Occasional Problems	Poor value or below expectations
Fiber	9.1%	11.1%
T1	35.7%	38.7%
Cable	37.5%	32.0%
Fixed Wireless	40.6%	33.6%
DSL	48.4%	42.4%
Mobile Wireless	53.0%	54.7%
Satellite	73.8%	69.4%

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The Internet of Things & Edge Computing

- Gartner Research says 8.4 billion connected "Things" will be in use in 2017, up 31 percent from 2016 and predicts over 20 billion by 2020. Intel Corporation expects the number to be much greater.

- This growth will be driven by applications such as smart cities, smart homes, industrial sensors, connected manufacturing machines, fitness devices and autonomous cars to name a few.

- These devices will drive up the demand for low latency, high speed, symmetrical access to broadband, and the need for these devices to be constantly "connected" will push computing deeper into the edge of the network.

- Only one technology will satisfy this ever growing demand for bandwidth, and that technology is Fiber!

Major Industries in New Mexico

- Key industries in New Mexico that are driving the demand for better broadband.
  - Agriculture
  - Traditional and Renewable Energy
  - Aerospace & Defense
  - Food Processing
  - Distribution, Logistics, & Transportation
  - Advance Manufacturing
  - Digital & Emerging Media
  - Tourism
  - Back Office & Technical Support
- In order to compete in a global market, these industries will require the symmetrical, high speed, low latency bandwidth provided by Fiber.

Impact of Broadband on Rural Economic Development

- Broadband is critical to the economic development and sustainability of rural areas. The following are examples of this need:
  - Education – Broadband is critical to education especially with the growing demand for STEM students.
  - Telehealth – Access to healthcare is a growing concern in rural communities. Telehealth will be critical to meeting the healthcare needs in rural communities in the future.
  - Telecommuting – More people are working from home and this allows people to remain in rural communities where good broadband is available.
  - Agriculture Technology (AgTech) – To meet the growing demand for food with limited natural resources, farms, dairies, and ranches will require greater amounts of technology, all of which will need good access to broadband.

Example: AgTech

- Due to limited resources and growing demand, Agriculture is increasingly using technology to become more effective and efficient.

- An article on AgWeb cites that AgTech startups have raised three times the investment in 2017 than during the same period in 2016, and this growth is expected to continue.
  - Sensors that can capture soil and water conditions, yield mappings, and livestock biometrics, in addition to providing access to smart fertilization and irrigation systems
  - Robotics to automate tasks such as milking cows
  - Farm management software to efficiently manage all aspects of the operation
  - Drones to provide monitoring of livestock and imaging of crops

- All of these AgTech applications that require access to reliable broadband and rural broadband providers such as Plateau are working to satisfy this demand by pushing fiber deeper into their networks.

Impact of Agriculture in Eastern Central New Mexico (NMSU 2012 Study)

EAST CENTRAL	DIR. EMPL. IMPACT	TOT. EMPL. IMPACT	OUTPUT DIRECT $ IMPACT	OUTPUT TOTAL $ IMPACT	$ RANK
AG PRODUCTION	**3,906**	**5,396**	**934,627,904**	**1,309,814,598**	**1**
FOOD PROCESSING	**757**	**1,219**	**517,217,038**	**838,138,919**	**2**
Federal Govt. Military	3,325	4,398	494,559,692	654,100,491	3
State & Local Govt. Education	4,429	6,353	229,376,236	328,975,393	4
Rail Transport	456	638	145,506,287	203,533,634	6
Food & Drinking Places	2,715	3,624	137,187,393	183,122,544	7
Banking, Credit Unions	413	612	120,942,459	179,087,187	8
Oil & Natural Gas Extraction	1,027	1,204	137,688,232	161,476,759	9
State & Local Govt. Non-education	1,684	2,415	90,673,416	130,031,583	10

Takeaways

- Plateau and other rural broadband providers have built a great deal of fiber throughout their serving areas and continue to expand their fiber networks.

- Community anchor institutions are connected to fiber and have excellent choices for services.

- Plateau offers an unmatched triple play (voice, video, and data).

- Plateau offers additional services such as Phone Systems, Hosted Services, and cabling and is working to provide additional services in the future.

- Plateau continues to work with 3rd parties such as Telco's, Power Companies, Universities, Non-Profits, Communities, etc. to expand the network and provide better service in New Mexico.

Senate Bill 308

- Allows for New Mexico Universal Service Fund reform.

- Permits the Public Regulation Commission to update the antiquated funding formula.

- Emphasizes the fund's use for broadband in un-served and underserved areas of the State.

- Provides at least $5 million annually for broadband infrastructure.

- Extremely important to rural economic development/sustainability.

House Bill 113

- Provides for the New Mexico Department of Information Technology to coordinate the development of a statewide broadband network.

- Will allow the State to efficiently upgrade broadband throughout New Mexico.

- Calls for collaboration between the State and telecommunications providers.

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Questions?

- Plateau
  - www.plateautel.com