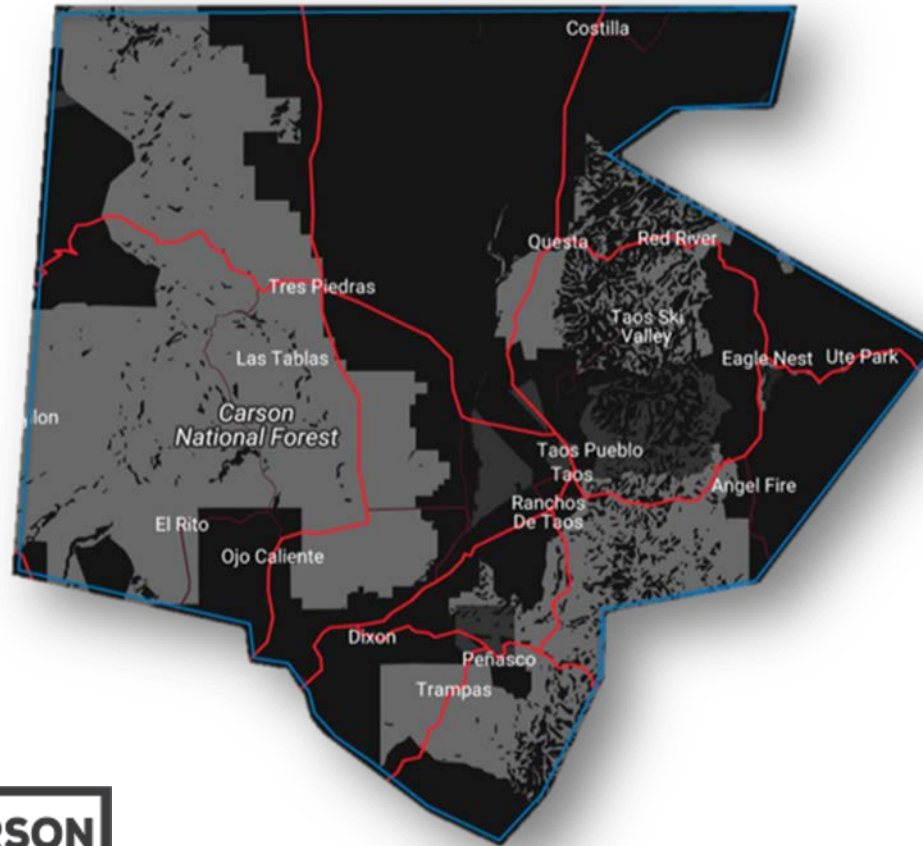**Luis A. Reyes, Jr., CEO,
Kit Carson Electric Cooperative
ISP's and Public Schools
Internet Access to Enable Distance Learning**

August 26, 2020

Where We Serve

Taos, Colfax and Rio Arriba counties in North Central New Mexico, six municipalities, two native American tribes, Pueblos -Taos and Picuris.

Kit Carson Electric Co-op (KCEC) by the Numbers

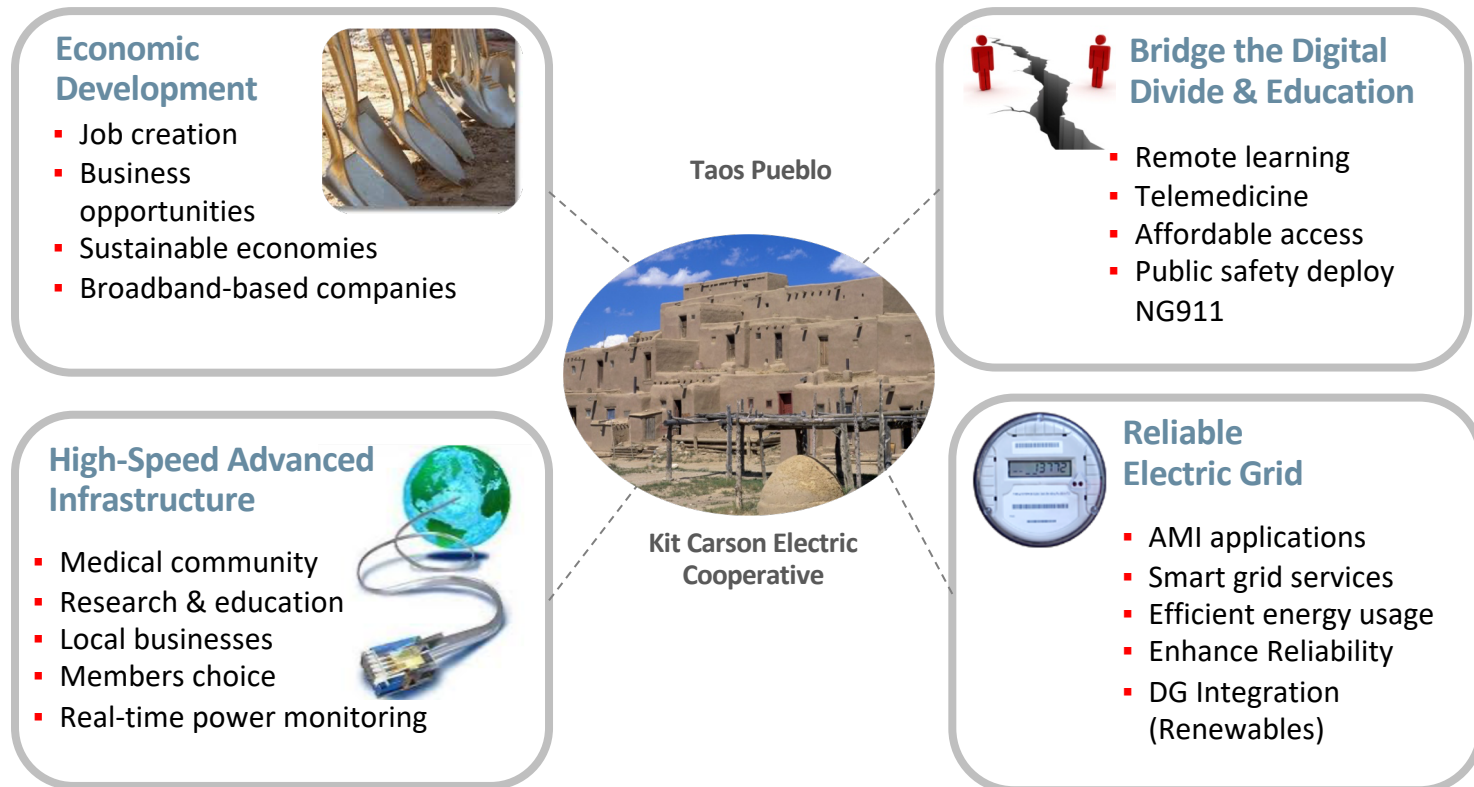|			
30,000 electric meters	9,000 broadband connections	3,300 propane customers	2,900 miles of electric and high-speed fiber optic lines
29 communities	24,961 households	4,304 businesses	183 critical facilities

KIT CARSON Electric Cooperative • Internet • Propane
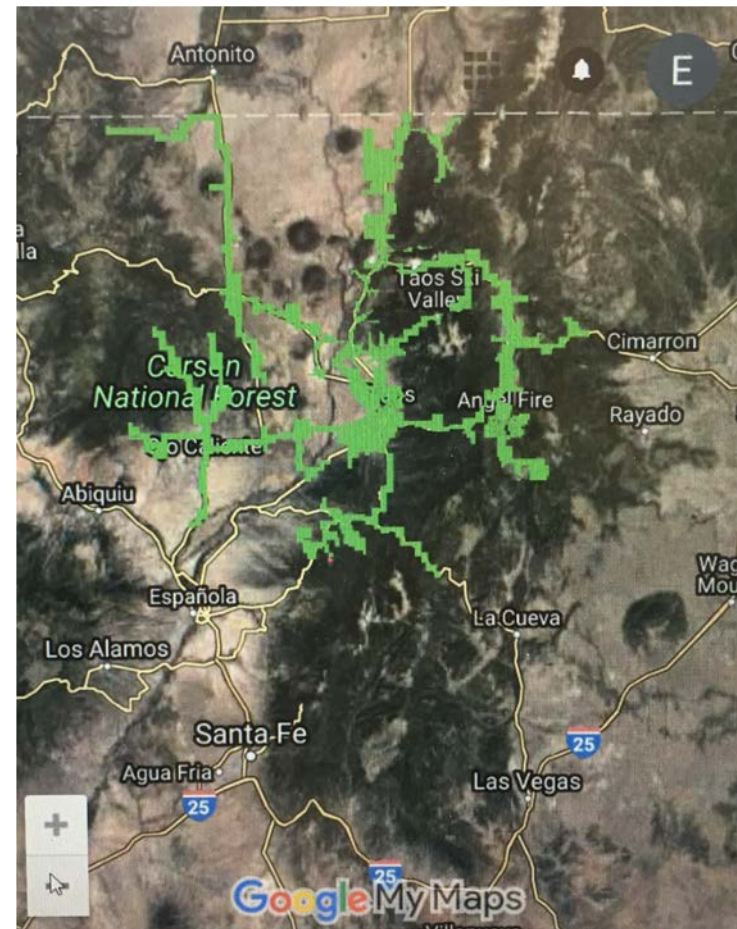
The Case for Broadband

Broadband serve multiple purposes; it generates multiple revenue streams. The financial incentives line up with the social and economic development goals. It support residents, businesses, communities and anchor institutions. Rural communities depend on this for economic viability. The case for implementing broadband ensures that competing providers will be incented to keep value high and keep costs low in order to attract and keep customers.

Economic Development

- Job creation
- Business opportunities
- Sustainable economies
- Broadband-based companies

Bridge the Digital Divide & Education

- Remote learning
- Telemedicine
- Affordable access
- Public safety deploy NG911

High-Speed Advanced Infrastructure

- Medical community
- Research & education
- Local businesses
- Members choice
- Real-time power monitoring

Reliable Electric Grid

- AMI applications
- Smart grid services
- Efficient energy usage
- Enhance Reliability
- DG Integration (Renewables)

Taos Pueblo

Kit Carson Electric Cooperative

Kit Carson Internet - Broadband is Essential

The Carrier Class FTTH Network

❖ Core network is expanding to 40 GB

❖ New equipment has the capacity to upgrade to 100 GB

❖ KCI can currently supply customers with 1 GB service to the Home or Business

❖ KCI will be able to supply residential and business customers with up 10 GB by 4Q 2020

❖ KCI leases and maintains dark fiber

❖ KCI has multiple redundant broadband paths for resilience and reliability

❖ Just because a home has a connection doesn't mean they have broadband

❖ KCI is both a Competitive Local Exchange Carrier (CLEC) and Eligible Telecommunications Carrier (ETC)

KCI currently has three redundant broadband paths for resilience and reliability

Cell Carriers Served

- KCI provides reliable backhaul bandwidth to the major cellphone carriers:

- KCI's robust broadband infrastructure, throughout the service territory, allows cellphone carriers to provide better service to area with enhanced Services.

- KCI currently serves approximately 30 cell tower sites. The sites are located in Taos, Angel Fire, Questa, Eagle Nest, El Rito West, Red River, Penasco, Taos Ski Valley, Costilla.

Student Connect 100 % Remote Learning Program

- Kit Carson Internet (KCI) is working with the 5 local School districts , SMU, UNM–Taos, NNMC , Taos Pueblo and Picuris Pueblos and all Charter Schools in connecting with Fiber Optic to the home all students within our service territory focusing on low- and moderate-income families but not leaving any students behind.

- The 5 school districts that KCI serves are Taos, Questa, Mesa Vista, Penasco and Cimarron as well as the institutions of higher learning mentioned above.

- Coordination of those students, teachers and support personnel that are lacking in broadband connectivity with Schools Superintendent's and IT professionals at each school to develop lists of those who require service.

- Program consists of fiber optic drop to each home at no cost to homeowner. If a router is required for students, a router is supplied.

- KCI has created low income and school broadband rates

- Goal of connecting all school districts and installations of higher learning

- Broadband speeds for students start at 25/3 Mbps at $24.95, 25/25 Mbps at $29.95 and 50/50 Mbps at $49.90

- Creation of Educational Enrichment Hubs (Partnership with Inspire)

- Collaboration with Taos Education Collaborative (TEC) in creating approximately 80 community hotspots and continuing moving forward to 100% remote learning goal

Schools Currently on KCI Network

- UNM-Taos (100/100 Mbps)
- Northern NM College (El Rito, NM) (150/150 Mbps)
- SMU-Taos Branch (250/250 Mbps)
- Taos Municipal Schools (Taos, NM) (250/250 Mbps)
- Penasco Municipal Schools (Penasco, NM) (10 Gbps/10 Gbps)
- Questa Municipal Schools (200/200 Mbps)
- Moreno Valley High School (100/100 Mbps)
- Vista Grande High School (100/100 Mbps)
- Taos Charter School (100/100 Mbps)
- Taos Integrated School of the Arts (100/100 Mbps)
- Taos Pueblo Day School (200/200 Mbps)
- Anasazi Day Charter School (100/100 Mbps)
- Eagle Nest Elementary School (100/100 Mbps)
- Red River Elementary School (100/100 Mbps)
- Roots & Wings Community (100/100 Mbps)

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KCI Caring for Students

- KCI has installed more than 200 students with broadband with a special monthly discount since March 2020 or start of Pandemic. KCI has invested over $323,692 for student internet connections (fiber drop and router). School supplies devices for third party devices.

- There are more than 1,300 students that lack the adequate internet speeds to participate fully in distance learning curriculum.

- 800 students currently on waiting lists for connections (made application and approved)

- KCI has invested and installed 22 community Wi-Fi hotspots: $38,060

- Multi-family homes will require larger amounts of bandwidth. KCI offers affordable high bandwidth rates.

- Rural students without a broadband connection will not have the same opportunities or benefits as broadband connected students.

Costs of Program

Special Student Monthly Pricing
25/3 Mbps -$24.95
25/25 Mbps -$29.99
50/50 Mbps – $49.90

Li-Heap Monthly Pricing
25/3 Mbps - $ 24.95

Price per Fiber Drop (Router Included)
Aerial - $693.33/per install
Underground - $1,354/per install
Hybrid - $1,157/per install

Total Underserved Students 1,300
50% Aerial = 650 Students
40% Underground = 520 Students
10% Hybrid = 130 Students

Total Estimated Cost for Student Completion

$1,305,154 (Estimated Projection Cost)

Cost of of each new KCI Community Wi-Fi hotspot
$785 for installation and $135/month for bandwidth

Investment for Educational Hubs
4 new community sites
$250,000

Cost & Potential Funding Sources

Cost Funding Sources

CoBank (Loans) - CoBank is one of the largest private providers of credit to the rural economy, delivering loans, leases and other financial services to agribusiness and rural infrastructure in all 50 states.

USDA/RUS (Loans and Grants) - Loans are made to cooperatives, corporations, states, territories, subdivisions, municipalities, utility districts and non-profit organizations.

CFC (Loans): Broadband Communications Investment

Potential Cost Funding Sources (Applications Made)

- **State of New Mexico**
  - **NM DoIT: New Mexico Department of Information Technology**
- **NMPRC**
  - **NM State Broadband Fund (Pending request of $700k)**
- **Submitted an EDA Cares Act Recovery Assistance Application**
- **Guzman Energy**
- **Grow NM**
- **Federal Communications Commission (FCC)**
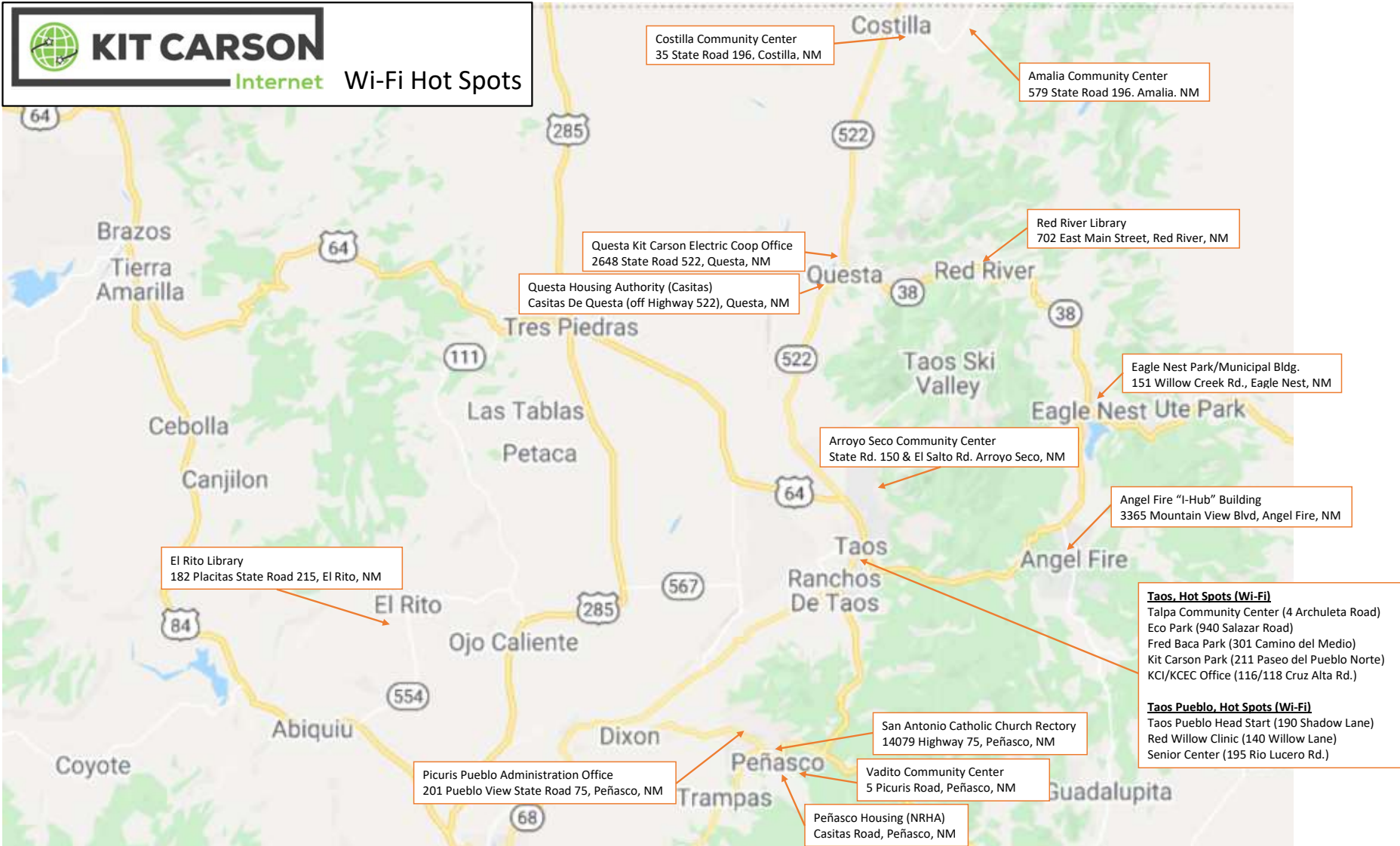
Current KCI Community & Educational Hot Spots

Access is Free to Students and Public

- **Amalia Community Center (**100/100 Mbps)
- **Costilla Community Center** (100/100 Mbps)
- **Questa Kit Carson Office** (100/100 Mbps)
- **Questa Housing Authority** (100/100 Mbps)
- **Red River Library** (100/100 Mbps)
- **Kit Carson Park (Adjacent)** (100/100 Mbps)
- **Fred Baca Park (Adjacent)** (100/100 Mbps)
- **Eco Park** (100/100 Mbps)
- **Talpa Community Center** (100/100 Mbps)
- **Penasco - San Antonio de Padua Catholic Church** (100/100 Mbps)
- **Penasco Housing (NHRA)** (100/100 Mbps)
- **Angel Fire Ihub Bldg** (100/100 Mbps)
- **Eagle Nest Park** (100/100 Mbps)
- **El Rito West Library** (100/100 Mbps)
- **Kit Carson CO-OP Parking Lot** (100/100 Mbps)
- **Vadito Community Center** (100/100 Mbps)
- **Questa Housing Authority** (100/100 Mbps)
- **Picuris Pueblo Administration Office** (100/100 Mbps)
- **Arroyo Seco Community Center** (100/100 Mbps)
- **Taos Pueblo Red Willow Clinic** (100/100 Mbps)
- **Taos Pueblo Senior Center** (100/100 Mbps)
- **Taos Pueblo Head Start** (100/100 Mbps)

A CONNECTED COMMUNITY
IS A SUCCESSFUL COMMUNITY

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Internet

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Kit Carson Free Student Hotspots

KIT CARSON Internet — Wi-Fi Hot Spots

Costilla Community Center
35 State Road 196, Costilla, NM

Amalia Community Center
579 State Road 196. Amalia. NM

Red River Library
702 East Main Street, Red River, NM

Questa Kit Carson Electric Coop Office
2648 State Road 522, Questa, NM

Questa Housing Authority (Casitas)
Casitas De Questa (off Highway 522), Questa, NM

Eagle Nest Park/Municipal Bldg.
151 Willow Creek Rd., Eagle Nest, NM

Arroyo Seco Community Center
State Rd. 150 & El Salto Rd. Arroyo Seco, NM

Angel Fire "I-Hub" Building
3365 Mountain View Blvd, Angel Fire, NM

El Rito Library
182 Placitas State Road 215, El Rito, NM

Taos, Hot Spots (Wi-Fi)
Talpa Community Center (4 Archuleta Road)
Eco Park (940 Salazar Road)
Fred Baca Park (301 Camino del Medio)
Kit Carson Park (211 Paseo del Pueblo Norte)
KCI/KCEC Office (116/118 Cruz Alta Rd.)

Taos Pueblo, Hot Spots (Wi-Fi)
Taos Pueblo Head Start (190 Shadow Lane)
Red Willow Clinic (140 Willow Lane)
Senior Center (195 Rio Lucero Rd.)

San Antonio Catholic Church Rectory
14079 Highway 75, Peñasco, NM

Picuris Pueblo Administration Office
201 Pueblo View State Road 75, Peñasco, NM

Vadito Community Center
5 Picuris Road, Peñasco, NM

Peñasco Housing (NRHA)
Casitas Road, Peñasco, NM

Taos Education Collaborative Partnership

❑ The Taos Education Collaborative (TEC) is the call to action by a local group of educators and community members to address the lack of home Internet for students across Taos County. We strive to fill the access gap and to keep Taos kids and adults learning and engaged in their education.

❑ Partners include: Town of Taos, TMSD and area charter schools, Kit Carson, UNM-Taos, Taos Education and Career Center, Taos Hive, Taos Chamber of Commerce, Comcast, and diverse area business (Aurafitness, Gutter Bowling Alley, Albertsons, Smiths and others are adding to our growing list)

• **Goal 1:** Identify up 100 free Internet access points across Taos County to serve as a "safety net" to keep students learning during virtual/remote, hybrid, and face-to-face learning. We are currently approaching 80 identified access points

• **Goal 2:** Establish "Educational Enrichment Hubs" locations throughout Taos County where students can access Internet, devices for learning, and academic support on a drop-in, flexible basis

KCI & Taos Community Cares Project: Educational Enrichment Hubs

Purpose of Educational Enrichment Hubs (Applications made with EDA):
- Strong foundation in social emotional learning (care)
- Comprehensive community support services
- Educational support for remote learning
- Project based integrated learning that supports common core standards for each age group (expeditionary learning)
- Health and nutrition meal program
- Reflective supervision for educators and TCC staff
- Access to behavioral health services for children and families

Benefits
- Local job creation and retention
- Safe student working environment
- Educational supplies and technology needed for student
- High-speed internet connectivity for student distant learning
- Coaching and training for student development
- Support for young student entrepreneurs
- COVID precautionary outdoor structures

Educational Enrichment Hubs Cost

Locations: Taos Community Centers- Llano Quemado, Penasco, Arroyo Seco, Talpa

Enrichment Hub Costs
Employee Certification Program - $15,000
Reflective Coaching Training - $20,000
Furniture and Equipment - $20,000
COVID Outdoor Structures- $50,000
Office Supplies - $40,000
Educational Supplies - $20,000
Additional Inventory for Small Business Support- $20,000
Printing and Photographic Marketing- $15,000
High-Speed Internet Connections to Community Centers- $30,000
Technology Costs to Support Remote Work -$20,000

Total Cost of Enrichment Hubs - $250,000

Taos Community Cares: Educational Enrichment Site Locations

Taos Community Cares: Educational Enrichment Site Locations:

Taos County Community Centers:
Llano Quemado
Talpa,
Arroyo Seco
Penasco

Taos Ski Valley:
Rio Hondo Learning Center
multiple event spaces and additional community space (Tbd)

Inspire and Taos Behavioral Health Collaboration:
Des Georges Mall
El Torreon
Taos Christian Academy

Taos Land Trust

ADDITIONAL SITES TBD

Distance Learning Opportunities

- KCEC is working with the local University to be able to deliver 1GigE, significantly upgrading the University's bandwidth capabilities and reducing its current circuit bandwidth costs.
- Enhances access to quality education via distance learning programs i.e. via online learning modules and the ability of relevant content from any location
- School districts in our territory have taken advantage of fiber. It will enhance elementary, middle, high school and colleges to enable on-demand e-textbooks for students.
- Improves the effectiveness of instruction and enhanced learning by allowing student to engage in interactive activities
- Encourages innovation on how education is delivered
- Enables a wider array of professional development opportunities for educators and learners
- Broadband expands access to educational resources for teachers, creates efficiencies in the administration of education, and bolsters efforts to collect and analyze student performance data

Solutions – Short Term and Long Term

Short Term Solutions:

- Temporary broadband connections
- Utilizing internet access from a relative, friend or Enrichment Hubs.
- Financial aid for broadband services
- Hotspots

Long Term Solutions

- Broadband access for every student in KCI's service territory
- Construction of more cell towers for increased reliability and resilience
- Clear and transparent analytical data of broadband access
- Affordable and fair pricing
- Permanent wireless hotspots at schools, libraries, parks and other places that encourage social distancing
- Continue to create critical infrastructure for students to have a path for distance learning, for working from home, for telemedicine and to stay in touch with loved ones
- Equipping school buses with Wi-Fi and then parking them in rural communities
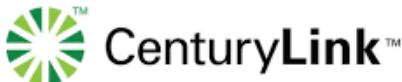
Recommendations

- Stronger statewide strategic plan on implementation of broadband infrastructure and its many uses

- Clearly identify how internet access data is aggregated and utilized (better data)

- Accurate reporting of the difference between "internet access" and broadband

- More detailed data on rural broadband service

- Improve the way rural areas without high-speed internet access are mapped to qualify for federal dollars.

- Understand the importance of broadband capabilities : Education, business entrepreneurship, work from home, tele-medicine, 911, live-streaming and other essential services.

- Covid-19 pandemic reinforced the transparent need for broadband capabilities.

Partners

And many more including schools, anchor institutions etc…

THANK YOU

Luis A. Reyes Jr.
CEO- Kit Carson Electric Cooperative Inc,