



June 25, 2020 (Revised)
April 29, 2020 (Original)

Internet Connectivity Concerns on Tribal Lands: Guidance Document

Background

Across the nation, the majority of people have internet access readily available. However, there is a digital divide, also known as connectivity deserts, in states that are rural, and on Indian reservations where access to the internet is limited or nonexistent. [Research](#) describes the digital divide as, “...consumer disparities in access to information and communication technologies based on age, gender, race and socio-economic characteristics and geographic location.” The digital divide also includes having limited or no access to a device that has capabilities to connect to the internet, based on [research](#) from the State Educational Technology Directors Association (SETDA).

The ACT Center for Equity in Learning, a nonprofit organization committed to narrowing the achievement and equity gap, conducted the High School Students’ Access to and Use of Technology at Home and in School [survey](#) to determine students’ access to and use of technology for educational activities, both at home and in school. The survey found “the percentage of students with access to only one device at home is substantially higher for underserved populations, such as those students with the lowest annual family income.” Approximately 26 percent of Native American and African American families disclosed in the survey that they only had access to one device, while only eight percent of Caucasian and Asian families reported having access to one device. Additionally, the [findings](#) from the survey revealed: (1) 19 percent of students from underserved backgrounds report having access to only one device at home; (2) 56 percent of students who say they have access to only one device at home indicated that it was a smartphone; (3) 24 percent of students who self-report their annual family income is below \$36,000 also say they have access to only one device at home. That compared to 5 percent of students from families with annual family income of about \$100,000 who report having access to only one device; and (4) 24 percent of students who live in rural areas report having access to only one device, compared to 14 percent of those students who live in urban areas.

[Research](#) from the Pew Research Center noted that 17 percent of teenagers feel they are not able to complete homework assignments due to the fact that they do not have dependable access to a device. These teenagers who do not have access to a dependable internet service at home state they find other places to complete their homework, such as free public Wifi locations. Finally, a lack of access to the internet and a reliable device can hinder a student’s educational attainment. Some [research](#) indicates that students who have access to a home device such as a computer are more likely to graduate from high school than their peers who do not have a home computer.

The digital divide is further exacerbated in states like New Mexico, which has a large and rural land base, for individuals with lower incomes; for those who live far from urban areas, including in rural areas or on

Indian reservations; and for individuals who do not have access to devices, even though the individual has access to the internet in some capacity. According to a 2016 [report](#) by the Federal Communications Commission (FCC), “Many Americans still lack access to advanced, high-quality voice, data, graphics and video offerings, especially in rural areas and on Tribal lands.” Moreover, the report showed 41 percent of Americans living on tribal lands lacked access to internet speeds necessary to do things such as video conferencing. More than 430,000 people in the state – roughly 20 percent of the overall population and more than half of the state’s rural population, including most of the people living on tribal lands – lacked access to this level of advanced telecommunications capability or good internet service.

Specifically, 80 percent of people who live in Indian Country in New Mexico do not have consistent access to high-speed broadband internet, according to [information](#) obtained from U.S. Senator Martin Heinrich’s office. Internet service providers have long maintained it is not in the best interest of their companies to pursue expanding broadband services to tribal communities, who often times are sparsely populated, due to the high cost of infrastructure needs for a small number of end users. As a result, tribal communities have endured a long and arduous road to obtaining broadband services in their respective communities. Nonetheless, some tribes have been successful at advocating for their communities to obtain the funding and critical infrastructure needed to have access to the internet, including several Pueblos in the [Middle Rio Grande Consortium](#).

Home access to the internet is necessary for equitable access to educational resources. This guidance document provides details on the short-term, mid-term, and long-term solutions for tribal communities as they face uncertainties resulting from the current pandemic.

General Information

There are a few things to be aware of during the development of the current situation. First of all, the circumstances surrounding technology, along with many other aspects of daily life, are rapidly changing. The following are solutions to remedy the current state of affairs that is reflective of the information we have readily available now. Aspects of the following solutions may be subject to change. Moreover, the solutions mentioned in this guidance document are not all-inclusive and do not represent a formal or binding agreement requiring further action by the Public Education Department (PED). This guidance document represents directions that can be taken in each specified time period.

Internet services are available. It is just a matter of finding the right solution for each tribal community. One size does not fit all when it comes to finding the specific solution. There is assistance available to support in this effort to get tribal communities connected. It is crucial to determine the proper location and identify the internet provider for each community, as well as what equipment is needed. Moreover, the end-goal includes project management and adequate deployment planning, which means the short-term solutions are just as important as the long-term solutions. Once individuals on tribal land have access to the internet, it is imperative this also includes instructions about how to set up equipment, run certain applications (i.e. Zoom, Webex, Hangouts, etc.), and furnish technical support through a phone number, email, or a virtual help desk.

It is important to keep in mind Governor Lujan Grisham’s executive orders [2020-004](#), [2020-022](#), [2020-026](#), [2020-030](#), and [2020-036](#) when implementing these solutions, especially when students are using publically available Wifi. Most of the public Wifi that is available is “open,” thus it is important for parents or guardians to keep in mind that this open Wifi does not have filtering from the Children’s Internet Protection Act (CIPA), which is designed to protect children from harmful content on the internet.

Investment in these solutions is at the forefront, which provides the opportunity for tribal students to have access to internet services and devices in their tribal communities. Technology equity and inclusion are essential during this time.

Short-Term Solutions

The short-term period includes the next few weeks leading to the end of the 2019-2020 school year, which for the majority of schools across state is the end of May. Focusing on this time frame, we suggest the following solutions to fill the needs of tribal communities in the short term. The creative solutions used in the short term are necessary to fill the current needs, but are also required to have a life beyond the current closures of schools on tribal land.

First of all, it is important for tribal communities to take an inventory of what they currently have in terms of access to the internet and appropriate devices. They can identify all facilities with Wifi availability and request the Wifi to be on 24/7. These facilities may include schools, tribal libraries, chapter houses, tribal governmental buildings, clinics, etc. This also provides an instant opportunity for individuals to have access to the internet. During this inventory, identification of communities or areas of the community without internet or satellite broadband service access can also be recorded. These are prime areas that can be mobilized with temporary hotspots, assuming these are areas without terrestrial backhaul.

Additionally, there are a number of options in the short-term that tribes can pursue, including enabling Wifi on buses and providing mobile hotspots and devices to students. Some technology solutions such as mobile hot spots and certain devices have a high potential of being on back order, which means they would not be readily available; possibly not until later in the summer. If there is a shortage of mobile hotspots, CradlePoint technology can be utilized to deploy Wifi on school buses that can be parked in areas without internet access.

In the meantime, tribal students can be provided devices, including Chromebooks or laptops, to ensure their continuous learning amidst the COVID-19 pandemic. As of April 10, 2020, approximately 23,398 Native American students were in need of broadband capabilities and devices. This number includes Native American students in public schools, with the exception of Albuquerque Public Schools, Rio Rancho Public Schools, and Santa Fe Public Schools; and Native American students in Bureau of Indian Education (BIE) operated schools and tribally-controlled schools.

PED finalized an initial order for Chromebooks and hotspots during the week of April 13, 2020. For further information on the costs and associated device agreements, please contact the Indian Education Division.

Additionally, it is important to provide access to resources and training for teachers and students who are transitioning to online learning. Some resources, including webinars and videos to help teachers shift their instruction online, can include the following: (1) ensuring that the department's LCR curriculum is an integral part of the overall curriculum as students adapt to new teaching and instructional methods and technology; (2) information from the State Educational Technology Directors Association (SETDA) - a not-for-profit membership association launched by state education agency leaders in 2001 to serve, support, and represent their emerging interests and needs with respect to the use of technology for teaching, learning, and school operations – <https://www.setda.org/main-coalitions/elearning/>; (3) information from the Consortium for School Networking (CoSN) that empowers educational leaders to leverage technology to create engaging learning environments and provides the tools essential for their success – <https://www.cosn.org/>; (4) information from the Schools, Health & Libraries Broadband Coalition (SHLB) – a nonprofit advocacy organization that strives to close the digital divide by

promoting high-quality broadband for anchor institutions and their communities – <https://www.shlb.org/webinars>; and (5) the Navajo Nation Tribal Utility Authority (NTUAW) and Sacred Wind are building free Wifi access in key locations.

At the state level, PED, in collaboration with partner agencies, will continue to seek funding opportunities for short-term solutions and engage with internal and external experts on distance learning. Additionally, staff from the New Mexico Department of Information Technology (DoIT) received information from Viasat, which currently manages Wifi in New Mexico State Parks, regarding options in the near future to install free Wifi hotspots, principally for students, in low income areas. Viasat is currently working with other states, such as Nevada, to put Wifi in all school and library parking lots, using existing fiber, and is looking to convert school buses to become mobile Wifi hotspots, using both satellite and LTE cradle points.

UPDATE: The following is a list of the progress PED, in collaboration with its external partners, has achieved during the short-term period. PED's Indian Education Division purchased and distributed the following wireless technology devices and equipment: 700 residential hotspots (Navajo Nation); 101 CradlePoint fixed and mobile hotspots (for teacherages, chapter houses, inside buildings; buses; and indoor antennas) (all Tribes, Nations, and Pueblos); and 6,282 Chromebooks (all Tribes, Nations, and Pueblos and schools with a significant Native American student population).

PED staff delivered to or arranged for pickup of the Chromebooks with 23 Tribes, Nations, and Pueblos in the state. Additionally, PED staff worked in collaboration with SFIS staff and the Information Technology Disaster Resource Center, which is a non-profit organization charged with providing communities with the technical resources necessary to continue operations and begin recovery after a disaster, to assist with installation of the CradlePoints. By the end of July, it is anticipated that 18 of the Pueblos, the Navajo Nation, the Mescalero Apache Tribe, and the Jicarilla Apache Nation will have been provided assistance from the above mentioned individuals regarding the installation of the CradlePoints in their respective communities.

Moreover, PED has worked in collaboration with its external partners on distance learning, including collaboration with All4Ed and Future Ready Schools, and has communicated and collaborated with the United States Department of Education and other states on digital equity work.

Regarding external partners, DoIT staff have worked extensively on tribal and statewide broadband concerns. DoIT staff compiled the department's efforts to address concerns with information technology. See **Attachment 1** for details.

Additionally, Sacred Wind was able to purchase equipment to establish six Wifi hotspots on the Navajo Nation, which has positively impacted broadband accessibility for nearly 11,000 students and their families in rural areas of the state, including the following Navajo Nation Chapters: Huerfano; Iyanbito; Nageezi; Red Rock; To'hajiilee; and Upper Fruitland. NTUAW has set up hotspots in their parking lots, of which two sites are in New Mexico, including in Shiprock and on the Navajo Technical University campus in Crownpoint.

Finally, SFIS staff has compiled an extensive list of completed information technology milestones and future information technology projects in the works. Some of the milestones and future projects can be included in the mid-term and long-term solutions. See **Attachment 2** for details.

Mid-Term Solutions

The mid-term period includes the summer and the 2020-2021 school year. Focusing on this time frame, the following solutions are suggested to fill the needs of tribal communities in the mid-term.

Tribal communities can continue to identify students who still need access to broadband services and provide them with mobile hotspots or Wifi options. The installation of Wifi on buses deployed to areas of need will still need to take place during the mid-term time period. Additionally, tribal communities can begin a more extensive analysis that links students' needs to hotspots in designated provider service coverage areas while making assurances that the students have devices. Tribal communities can engage internet providers to deploy hotspots on existing infrastructure, including on towers, windmills, etc.; and/or mobile systems. Finally, the FCC is providing tribes with a 2.5 GHz rural tribal window, with priority given specifically to tribes through August 3, 2020. This window is a unique opportunity for tribes in rural areas to directly access unassigned spectrum over their tribal lands, subject to buildout requirements. The 2.5 GHz band is suitable for both mobile coverage and fixed point-to-point uses and is currently used to provide the broadband service by legacy educational licensees and commercial providers that lease the spectrum. Depending on tribal needs, the 2.5 GHz band can play an important role in the deployment of broadband and other advanced communications services on tribal land. Tribes can find more detailed information on how to apply at <https://www.fcc.gov/25-ghz-rural-tribal-window>.

Tribes and PED, in partnership with external partners or partner agencies, can do the following: (1) advocate for wider adoption of the Educational Broadband Spectrum and TV White Space opportunities where possible; (2) submit ex-parte letters to the FCC on proposed policy changes to ensure the long-term viability of the federal E-Rate program; (3) coordinate with other tribes across the state so that education, public safety needs, and health care needs can be addressed with increased broadband capacity; and (4) continue to work in collaboration with the BIE to improve connectivity at BIE schools in the state. The BIE would envision high-speed fiber networks, but is not willing to apply for special construction funding, as far as department staff is aware. In addition, a long-term goal would be the provision to provide at least 1 Gbps fiber circuits to each of the BIE schools. Moreover, additional research, including where feasible, alternative technologies (i.e. TV White Space, Education Broadband Spectrum, Digital Microwave, and Satellite) is needed.

In addition, PED can focus on the development of a systematic approach to the digital divide and updates to the department's Educational Technology Plan. Additionally, the department can determine the professional development needs for educators using technology in education.

Generally, the following elements would need to be addressed in a comprehensive way in the state as a whole: (1) support for and the establishment of community wireless in tribal areas; (2) support policies at the federal level for improved mapping that does not use census blocks for defining connectivity; (3) Review and support (or not) federal policy changes that impact E-Rate funding and other funding streams for K-12 education; and (4) the development of a network of digital learning coaches using the Organization, Information, and Learning Sciences (OLIS) program in the Education Department at the University of New Mexico as a starting point to recruit volunteers. One of the focus areas of the program is distance learning for our rural and tribal areas.

UPDATE: SFIS staff has compiled an extensive list of completed information technology milestones and future information technology projects in the works. Some of the milestones and future projects can be included in the mid-term and long-term solutions. See **Attachment 2** for details.

Long-Term Solutions

The long-term period includes the months and years beyond the 2020-2021 school year. Focusing on this time frame, we suggest the following to fill the needs of tribal communities in the long-term. The creative solutions in this section are largescale and should be a collaboration between the tribal communities, PED, external agency experts, and other educational entities. We do recommend that DoIT collaborate with PED and tribal schools to roll out a cloud-based CIPA compliance solution.

As such, PED *may* focus on the following long-term solutions: (1) collaborate with DoIT to develop a tribal educational technology plan; (2) collaborate with the BIE to ensure high speed, scalable, and affordable broadband at every BIE and tribally controlled school in the state; (3) develop a plan to address connectivity opportunities for teacher housing in communities where there are tribal schools; and (4) coordinate with other state and federal agencies to obtain funding for excess fiber capacity to serve public safety and health care concerns.

Tribal communities, and those who choose to collaborate with them, *could* focus on the following long term solutions: (1) leverage existing federal programs with many requiring match funds that include E-Rate, Healthcare Connect, Lifeline, USDA/RUS, US EDA, NM PRC, NM DoIT, NM IAD/TIF, NM State Library, etc. E-Rate has been especially useful in providing fiber to six Pueblos and soon a \$30M fiber construction on Navajo Nation. In addition, fiber to all public schools, whether on tribal land or not and inclusive of libraries, has been completed. All Pueblos north of Santa Fe to Ohkay Owingeh have fiber.

External agencies and experts *could* focus on the following long term solution: (1) following the action strategy and deployment planning that will result from the “New Mexico Broadband Strategic Plan: Rural Assessment,” which will be inclusive of tribal lands in the state.

Finally, the Navajo Nation will submit an E-Rate application for special fiber construction for schools in the state for scalable, affordable, and stable bandwidth as far as the department is aware. The expected date for lighting the fiber is December, 2022. Any further questions on this project can be directed to John Chadwick at john.chadwick@state.nm.us.

UPDATE: SFIS staff has compiled an extensive list of completed information technology milestones and future information technology projects in the works. Some of the milestones and future projects can be included in the mid-term and long-term solutions. See **Attachment 2** for details.

Tribal Colleges

PED staff reached out to tribal colleges in the state regarding the tribal colleges’ efforts on internet connectivity at their respective institutions. As of April 3, 2020, the department received information from the Southwestern Indian Polytechnic Institute (SIPI) and the A:shiwí College & Career Readiness Center.

SIPI leadership noted all courses transitioned to online formats, including through Zoom and Brightspace. In addition, leadership are ensuring that students have the information technology equipment, including laptops and hotspots that the students need, with the prioritization being those students who have petitioned to graduate in spring 2020. SIPI staff is in the process of mailing out laptops and hotspots to students who requested the devices. If questions arise regarding the devices, students are urged to contact Jolene Aguilar in the Academic Support Center by calling (505) 346-2360, or through email at Jolene.aguilar@bie.edu. The SIPI campus is closed with all staff on telework status. The SIPI Student Support Services has also transitioned online and is available through email, Zoom, and Brightspace. If

students have additional needs or concerns, contact the appropriate staff member via their email.

A:shiwi College & Career Readiness Center leadership noted the FCC's Wireless Telecommunications Bureau has granted an emergency Special Temporary Authority [request](#) filed by A:shiwi College & Career Readiness Center to use unassigned 2.5 GHz spectrum to provide wireless broadband service over the reservation of the Pueblo of Zuni in New Mexico in light of increased demand due to the current pandemic. A:shiwi College & Career Readiness Center is an instructional site of Navajo Technical University (NTU) with the support of the Pueblo of Zuni. Leadership also noted that the emergency request is an indication of the close collaboration with partners, including NTU, Northern Arizona University, Muralnet, and the leadership at the Pueblo of Zuni, as they collectively work to establish and extend broadband services to underserved populations during this time and to find innovative ways to provide broadband access to their communities.

If additional information is received from tribal colleges, the tribal guidance document will be updated as needed.

Additional Resources

The following is a list of resources that could provide additional information during the current situation:

- Main Page: <https://webnew.ped.state.nm.us/bureaus/safe-healthy-schools/covid-19-coronavirus/>
- ISP Offerings: https://webnew.ped.state.nm.us/wpcontent/uploads/2020/03/ISPsupportforhomeworkgap_v5.pdf
- eLearning: https://webnew.ped.state.nm.us/wp-content/uploads/2020/03/E-LearningandCovid-19_v3.pdf
- NM Broadband Program (NMBBP): <https://www.doit.state.nm.us/broadband/index.shtml>
- NMBBP Map: <https://nmbbmapping.org/mapping/>
- NMBBP Speed Test: <https://www.doit.state.nm.us/broadband/speedtest.shtml>
- NMBBP Reports: <https://www.doit.state.nm.us/broadband/news.shtml>

Additionally, a frequently asked questions (FAQs) document regarding state and federal funding opportunities for the proposed solutions will also be available.

*Special thanks to John Chadwick, PED; Heidi Macdonald, PED; Gar Clarke, DoIT; and Kimball Sekaquaptewa, SFIS for their assistance in creating and revising this guidance document. Special thanks to Deborah Martinez, PED, for her assistance with editing this guidance document.

BROADBAND ACTIVITIES

NM Broadband Program

Department of Information Technology

June 2020

The following is not a comprehensive list of Broadband Activities, yet does provide some understanding of the level of effort being provided directly to and/or statewide inclusive of Tribal Country. Of note, all of these activities have entailed a strong, passionate, collaborative structure among many agencies and individuals. The following list of activities are in no particular order except stratified by current, planned, and completed.

Current Activities

- NM Homework Gap Team (NM HGT): A group consisting of PED/IED, DCA/State Library, IAD, PSFA, SFIS, Navajo Nation, Community Learning Network (CLN), Regional Advocate, and DoIT was created to coordinate statewide activities in support of narrowing the Homework Gap. The initial step was to conduct a survey of public schools inclusive of tribal schools to ascertain their needs for devices. Due to the generosity of CLN the NM HGT has a website full of information.
 - NM HGT: <https://www.communitylearningnetwork.org/homework-gap-team.html>
- ITDRC Project Connect: As a result of CLN efforts New Mexico is graced with a team from the Information Technology Disaster Recover Center that is deploying Public WiFi Parking Lot Hotspots within the state. The ITDRC responds to disasters that normally involve hurricanes and wildfires, yet to have them in New Mexico is a fabulous honor. They deploy these hotspots at no cost and when they walk away, the facility owns the hardware. Additional information can be found at –
 - Hotspot Request: <https://survey123.arcgis.com/share/3b61c508459e42b8928574f99f7afcf>
 - FAQ: <https://docs.google.com/document/d/1ZjO5BM4ANyBIAQ-KKX2zXZ3W5VGCeSEpniCZN1M95t8/edit#>
 - ITDRC Info: <https://www.itdrc.org/>
- Devices: PED/IED allocated funds that resulted in the purchase of approximately 700 Residential Hotspots (Navajo - distributed), 102 CadlePoint (allocated to all tribes – in process with assistance from ITDRC) fixed and mobile (schools buses, vans, etc.) Hotspots, and 6200 Chromebooks (allocated to all tribes and schools with large tribal – in process).
- Device Analytics: To assist in the proper placement of these devices, the NMBBP conducted an overlay analysis of Mobile Wireless Services by Address Points for the entire state. The data informs by nearly one million addresses what type (2G, 3G, 4G, etc) of wireless service and from what Service Provider (T-Mobile, Verizon, AT&T, CellulareOne, etc) are available. These points were then subset by School District, pushed into a spreadsheet, and made available to the school in the placement of residential hotspots. In one case the points were subset by a county. These data are available to others.
- Hotspot Mapping: DoIT NMBBP reached out to internet service providers, schools, libraries, state agencies, local government, and other entities requesting the existence of Public WiFi “Parking Lot” Hotspots. The DoIT Broadband Program gathered this information and posted the locations with ancillary information onto their NMBBP Online Map. These sites each have a notation to “Practice Social Distancing” and “Please

Complete your Census Survey” Those located on Tribal Lands will state – “For Tribal Members Only”.

- NMBBP Map: <https://nmbbmapping.org/mapping/>
- Navajo Water Settlement: A water pipeline build funded by the U.S. Bureau of Reclamation from Farmington to Yah ta Hey that includes 96 strands in supporting a smart pipeline system with extra strands being apportioned to Navajo Tribal Utility Authority and City of Gallup (Aprx \$1.1B)
- Pueblo Connect: The Pueblos of Santa Clara, Pojoaque, Tesuque, and Ohkay Owingeh have been selected to receive equipment and training towards the implementation of TVWS technology that will provide WiFi access into their communities. This \$1.3M National Science Foundation (NSF) Grant currently has a pilot constructed in Santa Clara Pueblo.
- TVWS for Tribal Libraries: Another similar project targeting the tribal libraries of Acoma, Torreon, Mescalero, and Jicarilla that will provide TVWS converted to WiFi spectrum at “Kiosk” sites that can be accessed by the community. Currently Torreon is up and running. This is an approximately \$300K grant funded by the Institute of Museums and Library Services (IMLS).
- BIE Schools: Meeting with BIE, and their GSA awarded telecom contractor, Verizon to include their subcontractor CellularOne, in providing affordable and reliable broadband to BIE Schools. They are under a different set of requirements that we (PED/SFIS/DoIT) are attempting to discover solutions. They are close to connecting Jemez Day School.
- Libraries: The State Library received \$1M, hired an E-Rate coordinator, and is in the process of lighting up public libraries. In addition, they are applying for grants to support distant learning and support services for libraries.
- Covid Response: Engaging primarily Verizon in deploying MCT (Mobile Cellular on Trailer) WiFi Hotspots to Tribal Areas. Currently there are units in San Felipe and Jemez that are targeting Covid19 Response Teams inclusive of healthcare and other support services.
- WiFi Spectrum: The FCC has released to tribes the availability of WiFi Spectrum, that is normally licensed, as part of an “auction” that closes in August. The application process is rather simple and an important offering that all NM Tribes who qualify are urged to apply. The SFIS can provide detail, yet the DoIT NMBBP is offering their mapping services to assist those tribes with that part of the application process. The spectrum is a broadcast type, equipment inexpensive, and can be constructed very quickly. Zuni is up and running and other tribes are applying. Some are using consultant services to push together the application. Whether used now or later, an important asset to secure now.
- Support Data: The NMBBP Mapping project continues to collecting facility data, residential locations, mobile services, federal/state broadband grant awards (CAF/RDOF/PRC/ReConnect, etc), infrastructure, technology coverage by ISP to assist in proper placement of hotspots within communities. A note was sent out to all NM ISP (150+) noting these data are available and can be used to assist in their grant application requirements.
 - NMBBP Map: <https://nmbbmapping.org/mapping/>
- Legislation: [Senate Bill 10](#) requesting \$25M from the Covid Relief Fund to NM DoIT to provide matching grant funding to public entities.

Planned Activities

- Navajo Nation: The DoIT NMBBP is aggressively securing allocated funds of \$3M to support in match the NM side of an approximately \$55M E-Rate funded fiber project.

- Cochiti Pueblo: The DoIT NMBBP is in the process of allocating funds to the Pueblo of Cochiti to bring fiber to their residential communities (Aprx \$2.875M).
- Sierra County: The DoIT NMBBP is allocating funds to Sierra County to enhance broadband access and capacity (Aprx \$102K).
- Plateau/XTO: The DoIT NMBBP is allocating funds to Plateau/XTO to expand broadband in areas east of Carlsbad to southern Jal. (Aprx \$1.1M)
- ENMR/Plateau: Plateau was granted a USDA Reconnect grant of \$19.2M to expand broadband into patches within Central/East NM.
- PVT: Penasco Valley Telephone Cooperative was awarded \$3.2M to expand broadband in SE NM.
- Acoma Pueblo: The Pueblo of Acoma was recently awarded nearly \$1M from the USDA Reconnect Grant to connect their residential community.
- NCNMEDD: “Pass Through” legislated funds from NM DoIT to North Central NM Economic Development District for broadband expansion (Aprx \$260K).
- Funding: The DoIT NMBBP in cooperation with Senator Udall’s Office has scheduled webinars to educate local and state governments in the availability of federal funds. In addition, a similar hosting to ISPs regarding FCC RDOF/Auction 904 (Rural Development Opportunity Funds) applications.
 - RDOF ISP Application Process Webinar: 26 June 2020
 - Federal Broadband Offerings: 8 July 2020

Completed Activities

- NMBBP Study: DoIT has just completed the update of the New Mexico Broadband Strategic Plan that includes a Rural Area Assessment. To download a copy –
 - NMBBP Plan: https://www.doit.state.nm.us/broadband/reports/nmbbp_strategic_plan-20200616.pdf
- NMBBP BB4E: After nearly three years essentially all public schools inclusive of public schools on tribal lands have been connected with fiber using primarily E-Rate funding. Currently NM has received over \$65M that has cost the State approximately \$5M. A collaboration with PED, State Library, PSFA, and DoIT.
- MRGTC: The Middle Rio Grande Tribal “Broadband” Consortium connected with fiber the Pueblos of Santa Ana, San Felipe, Santo Domingo, and Cochiti by accessing Library E-Rate Funds and matching with State Library Go-Bonds. Collaborators included the Four Pueblos, Amerisk, State Library, PED, PSFA, and DoIT.
- Jemez-Zia Consortium: Similar model that connected the MRGTC Fiber with the Pueblos of Jemez and Zia using Library funds as match. Collaborators included the Two Pueblos, Amerisk, State Library, PED, PSFA, and DoIT.

Considerations

- Community Connectivity: Though in many areas there is fiber readily available yet the big lift is getting the capacity into the homes and businesses. However our Anti-Donation Clause limits direct behavior, yet there are a number of mechanisms that can be used and are being used that include alternative technologies and creative funding strategies.
- ROW: Right of Way permitting is a huge issue. Sometimes can take over a year and meantime funding is lost or contractors move on. The need to streamline this process is very important. During the ARRA Stimulus days, the DoIT NMBBP sped up the Right of Way process by providing all land stewards with the project design and scope, invited everyone into one room to provide an overview and etch out issues, define each requirement in that there be no surprises during the review process, and schedule or

estimate when permits will be awarded. This was never formalized, yet proceeded in a collaborative manner due to the “shovel ready” nature of these projects.

- Match Funds: Given the funding there are a number of avenues to provide additional capacity. The easiest is to leverage federal funds that provide a competitive space and a nod towards ISPs winning those awards to expand their business while riding public dollars, not a P3. There are a number of instruments we can use to move public funds: E-Rate, Healthcare Connect, USDA (Distance Learning/Telemedicine/ReConnect/etc.), EDA, IMLS, and so on. Small study awards to companies such as Electric Cooperatives to get into the business. Grant writing support to smaller companies who do not have the capital to proceed.
- Policy: Besides ROW and P3 legislation there is a ton of small stuff that the State can legislate to speed up the game. They include dig once, climb that pole once, cap on private ROW fees, cooperative requirements for existing pole use, alternative funds to toss in extra conduit during an E-Rate project, and so on. Be good to investigate these.
 - Policy Considerations:
https://www.doit.state.nm.us/broadband/reports/BB4B_CTC_Report_Policy_Considerations-final20170117.pdf

Source: DoIT Staff

Tribal Connectivity Milestones			
Beneficiary	Technology	Funding	Public/Private Partners
Tribal Library Parking Lot Wi-Fi (Almost all 16 tribal libraries in NM provided this to support students)	Wi-Fi	Tribal Libraries	NM State Library
Jicarilla Tribal Library	Fiber Optic Internet	E-rate	NM Broadband for Education
Zuni Tribe FCC Special Temporary Authorization for 2.5 Ghz Spectrum	EBS	Facebook, MuralNet	Ashiwi College, MuralNet
Jemez Tribal Library	Zoom Tutoring	N/A	Jemez Dept of Ed
Navajo Nation Higher Education FCC Special Temporary Authorization for 2.5 Ghz Spectrum	EBS	N/A	FCC, NTU, Dine College
Taos Pueblo (Senior Center, Red Willow, Head Start)	Public Wi-Fi	Kit Carson	Kit Carson
Picuris Pueblo (Picuris Pueblo Administration Office)	Public Wi-Fi	Kit Carson	Kit Carson
Taos Pueblo High School Seniors	Free Home Internet	Kit Carson	Kit Carson
Torreón Tribal Library	Fiber backhaul TVWS	E-rate, NSF	NM State Library, DoIT
City of ABQ (21 locations)	Wi-Fi	City/APS	City of ABQ, APS
Hopi and Navajo (27 locations)	Wi-Fi	NAU	NTUA
Alamo Chapter Verizon Connectivity Trailer	LTE	Verizon	Verizon
Navajo Chapter Houses (Red Rock, To'hajillee, Nageezi, Huerfano, Upper Fruitland, Iyanbito)	Towers on Wheels Wi-Fi	Microsoft AirBand	Sacred Wind
San Felipe Pueblo Verizon Cellular on Wheels	LTE	Verizon	SFIS
101 LTE CradlePoint Community Hotspots in 16 Pueblos, Jicarilla, and the Navajo Nation	LTE	NM PED IED	NM PED IED, SFIS, BPS, Navajo Dept. of Education

ATTACHMENT 2

700 T-Mobile Hotspots - Navajo Nation	LTE	NM PED IED	NM PED IED, NM DoIT, Navajo Dept. of Education
Outdoor Tribal Wireless Access Points	Wi-Fi	ITDRC	ITDRC, SFIS, NAVA Education Project, NM TechWorks
Jicarilla Nation Tribal Hotspot Locations (6 Parking Lots: Tribal Admin North, Dulce Athletic Complex, Vietnam Veterans Gymnasium, Dulce Elementary, JANPA)	Wi-Fi	JANPA	JANPA, Dulce Schools
Acoma Pueblo	Middle Mile Fiber/Wireless	USDA ReConnect	Acoma Pueblo
Zuni, Los Lunas, Bernalillo Public School Bus-WiFi	LTE	Districts	
Cochiti Pueblo	Network Infrastructure	2019 NM Capital Outlay	NM DoIT
Jemez Pueblo	Network Infrastructure	2019 & 2020 NM Capital Outlay	Jemez Pueblo
2.5 Band EBS Tribal Priority Window Applicants: Pueblos of San Ildefonso, Nambe, Santa Ana, Ohkay Owingeh, Mescalero, Jicarilla	Spectrum for Wireless Networks	Free	Varies, includes Mural Net
Pending - In planning or submitted applications			
Navajo Nation E-rate Application	Fiber to the Schools/Libraries	E-Rate	NM Broadband for Education
RediNet ReConnect Application	Fiber to the Home	USDA ReConnect	
Tribal Libraries Distance Learning and Telecommunications Grant	Online Tools	USDA RUS DLT Grant	NM State Library
Santa Fe Indian School FCC COVID-19 Telehealth Grant Application	Chromebooks/Hot Spots	FCC	
Shiprock Schools Bus Wi-Fi (Non-COVID, long bus routes)	LTE	BIE Wi-Fi Bus RFP	BIE

ATTACHMENT 2

FCC, NTU, Dine College	EBS		FCC
Jicarilla Tribal Library TV Whitespace	Fiber backhaul TV Whitespace	E-rate, NSF, San Jose State	NM State Library, DoIT
Tribal Libraries: Mescalero, Zia, Santa Clara Outdoor E- rate Applications	Wi-Fi/Equipment Upgrades	E-Rate	NM State Library
Emergency Networks: At least 9 Pueblos engineering emergency networks	Unlicensed/Licensed Spectrum	Varies	Varies

Source: SFIS Staff