Arizona Broadband Development Grant (ADBG) - Rural

Commnet - Southern Apache County Regional Broadband Network

Project Narrative

1. Project Description and Timeline

Nature of the Improvements

Commnet proposes to build a fiber network to connect more than 11,000 residents and 4,162 homes and businesses in eight communities to high-speed internet within the Southern Apache County Region. The eight communities in the proposed project are Alpine, Concho, Eagar, Greer, Nutrioso, Springerville, St. Johns and Vernon. The area defined for this project is extremely rural as it is 60 miles from the nearest retail center in the city of Show Low, Arizona. The project consists of 100% last mile build out of fiber to the home (FTTH) because of existing middle mile fiber owned by Commnet. The broadband project is competitively and technologically neutral in the deployment of fiber and will provide qualifying broadband service to the unserved and underserved communities. Apache County is partnering in this application and is looking forward to implementing a Wide Area Network (WAN) that will tie all their facilities together that will improve productivity, save cost and add sustainability.

The tribal nations and their communities located in the county are not included in this project because those communities have applied for funding under the NTIA Tribal Broadband Connectivity Program funding opportunity which awards are still pending. Although the tribal communities are not part of this proposal, Commnet, Apache County and the tribes will work closely to ensure the best desired outcome for all the communities and residents within the county.

To the maximum extent possible, Commnet will leverage existing infrastructure and assets for any aerial portions of the network and existing right of way for the buried portions of the network. By leveraging existing assets and the right of way Commnet intends to lower architectural fees and right of way appraisal fees. Additionally, Commnet will use its existing pole attachment agreement with Navapache Electric Cooperative to attach the proposed fiber to existing infrastructure and assets i.e., poles. Attaching fiber to existing poles will lower costs associated with site work and construction. Therefore, the primary costs associated with the project are for materials, equipment and construction relating to the installment of the fiber. The estimated costs for these items are reasonable as the basis for the projections are historical data and quotes from vendors. Given the rural nature of the proposed service area, costs have factored in transport costs for equipment, freight costs for materials and stipends for specialized labor.

The project plan is designed to run FTTH to 4,126 premises in the eight identified communities at a per premise average cost of [redacted]. A total of 80 miles of fiber will be built both aerial and buried for this project.

The total cost of the project is [redacted].

Network Design

The proposed project intends to utilize current existing middle mile fiber assets throughout the eight communities of Southern Apache County. Commnet has an extensive existing middle mile fiber that they will make available for the backbone of this project. This project consists of building Fiber To The Premise (FTTP) for businesses; county and state government facilities; community anchor institutions and as many residential homes as possible. **At least 100/100 Mb service will be included in the entire service area with optional 1 Gb services in fiber termination areas.** Commnet will also make available an optional lower cost plan for those customers that may choose a more economical plan. The project is designed to evolve, sustain and scale for future services that may be needed for the growth and advancement of the communities. Emerging technologies such as cloud technologies, artificial intelligence, telehealth and telemedicine, smart grid applications, Next Generation 911 and 5G technologies will all be available because of the robust future-proof fiber infrastructure proposed by this project.

Technical Overview

Along the middle mile route, Commnet will place multiple Ciena 5170 chassis using 40km/80km optics in a collapsed ring configuration providing electronics redundancy. Ciena system initially will be 100 Gbps with ability to grow to 400 Gbps with placement of additional cards in the future if necessary. Ciena 3928 will be used for large business customer and tower service delivery when needed.

FTTH

The Fiber To The Home (FTTH) communities each deploy a 10 Gigabit-capable Symmetric Passive Optical Network (XGS-PON) which is a point to multipoint technology that connects Optical Line Terminals (OLTs) to many Optical Network Terminals (ONTs) via passive splitters. Each community XGS-PON network is set up in a star configuration with the OLTs in a centralized outdoor cabinet located near an existing middle mile network outdoor cabinet. Each OLT has multiple 8 port connections with each port attached to a 32:1 passive splitter which in turn are connected to the ONTs. This architecture is capable of supporting up to 256:1 splitters but 32:1 was used for scalability. With the use of symmetrical 10Gbps XGS-PON and a 1:32 split the fiber to the premise networks proposed here will be scalable for decades to come. This design allows for future 10 Gb services and expansion by converting to larger splitters. The centralized OLT design will also reduce ongoing maintenance cost in comparison to having them distributed throughout the network area.

For small business and FTTX deployment, Commnet will utilize the XGS-PON capability of Adtran's TA5004 architecture. Initial FTTX offerings will have speeds up to 1Gb/1Gb and wireless offerings funded by Commnet will have speeds up to 100/100 Mb. The XGS-PON architecture is future proof at up to speeds of 10 Gb symmetrical per premise; the middle mile electronics are future proof at up to speeds of 400 Gb.

The ONTs at each home connects to service drop feeders/enclosures which are connected to splitter enclosures/feeders in service to unserved and underserved areas by actively providing speeds of 100/100 to intended beneficiaries at costs that are lower or substantially equal to urban areas.

Stated Commitment to Operate and Maintain the Network

Commnet has been a valued partner in Apache County for several years and is committed to providing quality products and services and will oversee all aspects of the project throughout construction. Commnet's in-house project manager will verify that all facets of work meet our quality control guidelines, by working closely with the contractor responsible for construction. Once construction has commenced Commnet will implement a maintenance plan. All aspects of the facilities undergo continuous inspections and are routinely monitored and evaluated to ensure optimal performance. Monitoring includes assessments of electronics, data collection and deficiency tracking. Commnet is committed to constructing, operating, and maintaining the proposed fiber optic network for a term of not less than 5-years upon completion of the project.

Timeline

The proposed project will be completed within two years of the award of grant funds. Because of the extensive middle mile already in place and most of the fiber installation is aerial, the project timeline can be completed within two years. Commnet AZ is an existing CLEC in Arizona and has an existing pole attachment agreement with Navopache Electric Cooperative (NEC,) the local Rural Electric Cooperative (REC) based in Pinetop, AZ. The project scope will also include getting franchise agreements within the various towns where applicable. Major activities include finalizing and approval of engineering designs including all civil and structural designs and fiber optic engineering; submission and approval of all right of way requests and permits; and actual construction of outside plant construction and FFTH fiber optic build out. A detailed project timeline is included as an attachment.

Match Contribution

The total cost of the project is [redacted] which includes a [redacted] match of [redacted] provided by Commnet. An additional [redacted] each is committed by Salt River Project (SRP) and Tucson Electric Power (TEP) for a total of [redacted] of private contributions to the project. Although not included in the match calculation, it is important to note that the project also is leveraging existing assets valued at [redacted] that Commnet is utilizing to support the project. Commnet also will pay for the cost on its own to bring wireless service to premises where it is not feasible to offer 100/100 but an option of for a plan less than 100/100 would still benefit those residents.

The total cash match committed to the proposed project is [redacted].

How the proposed project addresses the broadband needs of the area served

The proposed project includes eight very rural communities in Northeastern Arizona that otherwise would not have an opportunity for high speed reliable broadband because the communities are so small and remote, there is no return on investment for private investment in the area. The strong partnership of a carrier and local government with the support of government funding will provide reliable service so these communities can thrive and be

competitive in a digital environment. Reliable broadband service will also provide support to school children at home, medical facilities, public safety and local government facilities. In addition, the airports in St. Johns and Springerville as well as the University of Arizona Cooperative Extension are covered under this project.

The areas to be served are economically distressed and are located in Opportunity Zones. The area is also impacted by the impending closure of the coal power generating stations that will leave many of the working residents unemployed in the next two years. The broadband project will provide an opportunity for these communities to retrain these workers for high skilled jobs to replace the jobs lost.

This project is being supported by federal, state and county officials. Officials at all levels of government in Arizona understand the critical nature of this project and support bringing this project to fruition. This project is vital to the survival of the region because of its current poor economic conditions in the area and the pending closure of three coal power plants in the areas. High speed reliable broadband to residents and businesses will be a lifeline for the community to shift from reliance on its current industry to industry driven by technology.

According to the data compiled by the Center on Rural Innovation, 0% of homes and businesses in Apache County have fiber access and 0% have access to broadband upload speeds of ≥ 10Mbps. The NTIA Broadband USA Indicators of Broadband Need, show Apache County has 58.6% of households without internet access and a median M-Lab speed test of 2.94/0.87mbps. The Microsoft percentage of downloads completed over 25 Mbps or higher is only 5%. Apache County is one of the least connected communities in Arizona.

The poverty rate in Apache County is 35.5% which is more than three times the national poverty rate of 11.45% and state poverty rate of 11.25%. The unemployment rate is 6.6% which again is far above the national unemployment rate of 3.9% and the state unemployment rate of 4.1%. Apache county also ranks at the bottom for education achievement. There are 60 public schools in the county serving over 13,000 students – many of which are minorities including Native American. The average math proficiency score is 29% compared to the state average of 45% and the reading proficiency score of Apache County students is 26% compared to the state average of 44%. Schools in Apache County have an average ranking of 2 out of 10 which is in the bottom 50% of all Arizona public schools.

Apache County is the poorest county in Arizona and the third poorest in the United States. The 2020 census lists the per capita income in Apache County at $15,128 and median household income at $32,508. This is the lowest per capita and median household income in Arizona. In comparison, the statewide per capita income in Arizona is $30,694 and a household income of $58,945 while per capita income for all United States is $34,103 and median household income is $69,950. For example, 21% of Springerville and 7.4% of Eagar residents live below the federal poverty level for 2020 of $12,760 for a one-person household.

While these statistics are sobering, the impending closure of two major employers will add to the unemployment and economic distress in the area. The region has two large coal fired power

generating plants. The Salt River Project Coronado Generating Station and the Springerville Generating Station owned primarily by Tucson Electric Power have given notice that they intend to discontinue operation at the close of their current operational permits.

The Coronado Generating Station intends to close completely within 12 years. This closure will displace 200 employees and approximately 30 contractors. While the Springerville Generating Station intends to operate slightly longer, they intend to decrease operation by 50% within 12 years. Utilizing current employment figures, this would indicate displacement of an additional 200 employees and 20 to 30 more contractors.

With this closure looming on the horizon, it is clear, these communities must aggressively pursue new economic development opportunities to survive, let alone compete in the digital age. Without this investment, southern Apache County will fall even further behind with respect to the economic, educational, healthcare and social requirements of the modern digital age.

COVID-19 further exasperated the challenges in Apache County. Apache County has reported 20,383 cases and 571 deaths as of January 2022 with a current positivity rate of 27%. Although a small rural area, the region is impacted by business closures and significantly impact an already fragile economic environment. According to the local Chamber of Commerce, three businesses have permanently closed, and five businesses have indicated they will close as a direct result of the COVID-19 pandemic. The region depends on tourism which brings thousands of visitors to these small communities. These visitors bring outside dollars that support local businesses, restaurants, hotels and community arts & crafts festivals that are now severely impacted due to COVID-19.

When the rural communities needed to move to distance learning, many of the residents had no or very limited internet access even when the schools provided hotspots. Even for the students that had internet available at home, the service was unreliable and limited the student's ability to complete their schoolwork. When schools are able to be in-person, the problem of lack of reliable internet service still exists when the student goes home and is responsible for completing homework assignments that require internet access for research and other class assignments.

A number of new business opportunities have contacted the community but due to lack of adequate internet have chosen to go elsewhere. Community survey responses identified that individuals would gladly relocate their businesses and home offices to the region if possible; however, current internet service is not sufficient for their needs.

Broadband Service Plans – Speeds and Pricing

Upon completion of the project, Commnet plans to make multiple offerings available throughout the proposed service area under the brand Choice Broadband. All offerings will be available at significantly lower prices than the national average prices for similar offerings as determined by the FCC's urban rate survey. Commnet is offering synchronis speeds rather than asynchronis speeds like most carriers.

All customers in the FTTH proposed service area will have at least 100 Mbps/100 Mbps available with 1 Gig available to homes and businesses with fiber. Customers will have several pricing and speed plans available to fit their individual needs and affordability.

[redacted]

Participation in federal programs that provide low-income subsidies

Commnet will also secure the required designations to offer Lifeline discounts to residential customers in the area. The monthly Lifeline discount for [redacted].

Commnet also participates in the National Emergency Broadband Benefit (EBB) program that was implemented earlier last year by the Federal Communications Commission (FCC). This program offers subsidies to low-income residents providing discounts up to [redacted] towards broadband service for qualifying eligible households. The EBB program is transitioning to the new long-term Affordable Connectivity Program (ACP). ACP will provide discounts up to [redacted] towards broadband service for qualifying eligible households and up to [redacted] for households on tribal lands. Commnet is committed to continued participation in the program to ensure rural customers have access to affordable broadband service.

Previous attempts to bring high speed broadband to the area

Several independent efforts to fund broadband infrastructure have been attempted in the Southern Apache County Region with limited success. The region has utilized E-Rate funding for schools and libraries and received a planning grant from the Arizona Commerce Authority(ACA) for both the St. Johns and Springville/Eagar area. However, a coordinated regional effort was not viable until recently when adequate funding has become available to support a regional effort. After reviewing the current community situation with the Community Broadband Consortium, the last mile delivery to the retail businesses, hospital, schools, and homes was identified as the priority. It was determined that the current land-based provider was not capable of meeting the minimum Federal Broadband requirement of 25/3 to the home. Therefore, the Southern Apache County Region stakeholders began to look at a long-term solution to provide high speed broadband to its residents and businesses.

Several attempts have been made to bring high speed broadband to the communities in Apache County with some success through E-Rate funding. County officials contacted other carriers in the area; however, were told that there was not a sufficient ROI for the company to expand in

Apache County. One carrier would only consider specific populated areas but no other areas. This "cherry picking" approach would certainly take away any chance of less populated areas getting broadband service.

The county also made attempts to seek federal grant funding from the Economic Development Agency (EDA); however, the federal requirements and match commitment made these sources not viable for the county. Apache County officials met with US Commerce Authority Economic Development Agency (EDA) regarding funding for this project. EDA funding is highly competitive and requires a 20% match. American Rescue Plan Act (ARPA) funding is not eligible to use as match and because of the current economic conditions in the region, there are no other resources available to meet the matching requirement. The EDA also requires professional economic and job growth data to support the requested infrastructure investment. With the financial support of SRP, Apache County is partnering with an economic consultant to produce an economic impact study of the region.

Commnet is the only carrier to offer to partner with Apache County to bring broadband to these communities.

Organizational Capability

Eligible Applicant – Commnet Wireless LLC

Commnet Wireless, LLC ("Commnet") has the operational experience, technical competency, financial stability and organizational capability to be a successful partner on the proposed project. Commnet has a wealth of experience building out rural middle mile and last mile broadband networks utilizing multiple technologies for over 20 years. Commnet's mission and focus has always been and continues to be connecting rural communities with less than a population of 2,500 with affordable, carrier grade communications networks to improve safety and quality of life and to promote economic development.

Commnet is a wholly-owned subsidiary of ATN International, Inc. ("ATN"). ATN is a publicly traded company with a sound financial standing and a strong shared services organization that can be leveraged by its subsidiaries for ongoing operations. Additionally, ATN understands the value of and promotes local management and employees at the subsidiary level. Commnet has been a subsidiary of ATN since 2005. Since its acquisition by ATN, Commnet has continued to grow and continues to evolve with developments in telecommunications technology, while continuing its mission of specializing in delivering service to rural and remote areas that are neglected by the major wireless and broadband internet companies.

Commnet operates over three hundred (300) cell sites and several hundred miles of fiber-based networks. Commnet provides retail voice and broadband mobile wireless service, fixed wireless broadband service and broadband services over fiber networks under brands "Choice Wireless" and "Choice Broadband". Commnet and its subsidiary companies serve over 20,000 retail mobile and fixed broadband subscribers including almost 10,000 Lifeline subscribers under the Universal

Service low-income program. Commnet is extremely familiar with the challenges of building networks in rural America; therefore, has extensive knowledge and experience working with grant funding opportunities.

Commnet AZ, LLC

To complete the fiber deployments of the proposed project, Commnet will engage its subsidiary Commnet AZ, LLC ("Commnet AZ"). Commnet AZ is a Competitive Local Exchange Carrier (CLEC) certified by the Arizona Corporation Commission. Commnet AZ was formed in 2016 to build and operate fiber networks in rural Arizona.

Commnet responsibilities in the covered partnership will include design of the last mile network that connects to the existing middle mile infrastructure; coordinate and arrange connections between the network and wider internet; retain contractors and create workforce training plans including customer care and retail outlet training. Commnet will also be responsible for overall project management of the construction project including developing and adhering to the construction timeline; environmental compliance; mapping of service areas; sustainability plan; and facilitating the provision of Lifeline service and other subsidies to eligible end users. Commnet will provide advance funding to ensure adherence to the project timeline pending grant reimbursement from ACA.

The following are examples of fiber projects that Commnet AZ has completed or are in the process of completing in the state of Arizona:

1. Commnet's affiliate NTUA Wireless, LLC (NTUAW) was awarded a contract by the Apache County Schools Business Consortium ("ACSBC") to construct a 170-mile fiber network that connects member schools and libraries to a high-speed broadband network. Commnet AZ was contracted to construct and operate a substantial part of this network (*i.e.*, the portion outside the Navajo Nation), enabling fiber-based service to be delivered to rural towns such as St Johns, McNary, Vernon, Concho, Greer and Round Valley. This fiber build was completed in June 2019.
2. Commnet AZ was awarded an Arizona Commerce Authority Grant to construct a fiber network in the City of Page. Commnet AZ constructed and deployed approximately 15 miles of new fiber – consisting of both aerial and buried fiber – in the city of Page, AZ to connect anchor institutions, businesses and towers in the area. All last mile connections along the fiber build are connected via fiber. All other last mile connections are over fixed wireless technology. The completed project provides a 100% fiber-based network from Phoenix, AZ to Page, AZ for the first time. The project was completed at the end of 2021.
3. Commnet AZ was awarded an E-Rate Special Construction award to construct a fiber network capable of delivering 10GB to the Alpine Elementary School and Public Library in Apache County. Construction is estimated to be completed by July 1, 2022.

2. Project Description and Timeline – Development

The proposed project will have the ability to scale over time for greater capability and is designed to serve the largest number of premises and residents in an eligible service area; however, because of the limited funding other areas that could not fit in the scope of the project were included in the project design. However, the project was designed with these premises in mind and the network can be scaled and expanded at a later date when adequate time and resources are available to service these premises. The service area maps identifies these areas and additional resources will be sought to cover the areas. The proposed network is designed for greater capabilities and scalability to ensure the project can be built upon in the future.

Type of construction to be undertaken (aerial or underground)

Any proposed future development in the area will leverage existing infrastructure and will consist of both aerial and underground depending on terrain, access and utility pole availability.

Qualifications of the vendors/contractors

Commnet will go to bid for construction contracts and only use well-established fiber optic contractors for the project. Commnet will require the contractor and any sub-contractors and vendors are licensed and bonded in accordance with Arizona laws and have sufficient experience designing and constructing fiber networks. All federal funding and procurement requirements will be followed as outlined in the grant announcement.

Engineering analysis

Engineering analysis will be completed by Commnet staff or contracted with a trusted engineering partner.

Number of households, businesses and anchor institutions served

The proposed project includes as many households as feasible for FFTH deployment. An expansion project will build out fiber to premises where feasible and will utilize other technologies to support the remaining homes in these communities.

Ways in which the project will improve redundancy and reliability if any

Although the proposed project is a last mile community solutions, it sets the stage for a Phase II middle mile project focusing on a diverse redundant path for the eastern side of Arizona. Focusing on a regional project involving Apache, Greenlee and Graham counties, an extension from the Alpine area portion of this project down Hwy 191 to Greenlee county and connecting to existing Valley Telecom fiber in the Clifton area that currently runs through Safford and on to I-10. From the St. Johns side of the ATNI network, a middle mile leg would be extended to I-40. This project would be coordinated with the ongoing ADOT I-40 Arizona's Smart Highway Corridors project to create a complete eastern Arizona ring that would greatly enhance redundancy in the region.

3. Other Project Outcomes

The proposed project will deploy approximately 100 miles of fiber to bring fiber to the premise for the homes and businesses in the proposed service areas. Upon completion of the project, over 11,000 residents in the communities of Alpine, Concho, Greer, Nutrioso, Springerville, Eagar St.

Johns and Vernon will be served with high speed internet at a minimum of 100M bps/100 Mbps speed at a cost that is far below the national average for broadband. These eight (8) communities are extremely rural and would not have access to high speed reliable broadband without this project. Over 200 businesses, many of which are small family owned businesses, will have access to high speed internet that will provide opportunity for economic growth and allow them to be competitive in the digital marketplace. In addition to residents and businesses, the state and county government offices in the county seat of St. Johns will be serviced by this project. Several U.S. Post Offices, two branches of Northland Pioneer College, local fire districts, the regional medical center, and the municipal airport will have Gigabit speeds available. The proposed project will also include 32 community anchor institutions including schools, hospitals and public buildings.

A key finding in a recent economic study by Round Consulting, Inc. determined that "expanding broadband in Apache County will create approximately 1,060 new jobs in the region over the next decade." The report also states that each year, the projected new activity resulting from broadband will increase Apache County's economic output (i.e., the total volume of goods and services produced) by $185.5M, add $86.8M in labor income (i.e., employee-earned wages), and generate $3.2M in state and local tax revenues.

Leverage existing assets in the community:

Through the E-rate program, Apache County has successfully connected the schools and libraries with the necessary broadband. During the E-rate project, although separately funded, additional fiber capacity was put in place by ATNI/Commnet to meet the future needs of the region, thus leveraging the investment made possible by this grant and providing the region with a state of the art project at a much lower cost. As challenging as this task is, it is important to note that the communities are not starting from square one.

Commnet intends to submit a proposal for two current Arizona Department of Education Final Mile Project RFPs in Vernon and St. Johns. Commnet will leverage any new awards to bring the best possible solution to these communities.

Disclosure of Pending Application

There is currently a pending application to the NTIA Broadband Infrastructure Program to partially fund the Southern Apache County Region communities. This is a partnership between Commnet and Apache County. The NTIA application focuses on Non-RDOF areas as required by the grant guidelines and includes a wireless deployment of 100/20Mbps in certain areas. NTIA intends to announce funding after the deadline for the ACA grant application. If NTIA funds the application as submitted, Commnet and Apache County will work with ACA to ensure that an ACA award extends and enhances broadband infrastructure and connectivity to residents and does not duplicate efforts.