Arizona Broadband Development Grant - Rural

Commnet - La Paz County Western Regional Broadband Network

Project Narrative

1. Project Description and Timeline

Nature of the Improvements

Commnet proposes to build out a fiber-optic network which would enable Commnet to sell internet services to Southern La Paz County residents and businesses in five communities – Parker, Quartzsite, Bouse, Salome and Wenden. The proposed backbone infrastructure is comprised of constructing approximately 89 miles of backbone fiber infrastructure and 38 miles of last-mile fiber infrastructure. Unlike other areas in the state, La Paz County has no middle-mile fiber backbone so providing high speed last mile service is not possible. This project proposes to construct the necessary middle-mile fiber backbone and build last-mile fiber to the most unserved and underserved communities in the county. The open access network will be available to interconnect to any eligible last mile provider to provide low latency, collapsed redundant ring for high capacity broadband to these communities. Total proposed new fiber infrastructure constructed is 127 miles comprised of both aerial and buried fiber construction.

The total cost of the project is [redacted].

Network Design

The network design includes a 144-count optical fiber cable and incremental fiber build from Yarnell in Yavapai County to the eastern edge of La Paz County along Hwy 60. Fiber already exists in Yarnell, AZ to Phoenix; therefore, this project will connect La Paz County back to Phoenix which does not exist today. The project includes additional construction of 89 miles of middle mile fiber through the five highest need communities and includes the Hwy 95 corridor from Quartzsite to Parker. This corridor can be extended to Yuma and lays the foundation for a Western Arizona regional ring that can connect Yuma, La Paz and Mohave counties in the future and will provide much needed redundancy to the area. This proposed ring is identified by the green line on the attached map.

In addition to the last mile to the communities, the proposed project includes fiber laterals to all county buildings in the specified project area. This includes the government campus in the center of Parker, county court buildings, Public Works facilities, Sheriff's Office headquarters as well as remote substations for the Sheriff and Public Works in Salome. In total, fourteen county buildings will be connected by fiber allowing for a Wide Area Network (WAN) for the county's use. In addition to the county buildings, the project will connect the Quartzsite government buildings with fiber to allow the town their own WAN.

The proposed fiber infrastructure is both aerial and underground. The project will utilize both new and existing infrastructure to complete the fiber construction. Commnet has an existing

pole attachment agreement with Arizona Public Service (APS); therefore, will use APS Distribution lines where available. Utilizing the APS poles significantly reduces costs and construction time for this project.

The intended use of ABDG-Rural grant funding is for actual construction costs and equipment necessary to construct the network.

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. Commnet is offering synchronis speeds rather than asynchronis speeds like most carriers.

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 than 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.

For small business and FTTX deployment, Commnet will utilize the XGS-PON capability of Adtran's TA5004 architecture. Initial grant FTTX offerings will have speeds up to 1Gb/1Gb and wireless offerings funded by Commnet (not using grant funds) will have speeds up to 100/20 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.

Stated Commitment to Operate and Maintain the Network

Commnet has been a valued partner in other rural areas of Arizona 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 the company's 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 at the specified grant speeds for a term of not less than 5-years upon completion of the project.

Timeline

Upon notification of the grant award, Commnet would file for all necessary permits for the project and place orders for materials. Once permits and materials are received, Commnet would secure contractors by competitive bid and begin construction of the project. It is anticipated that project completion would take 24 months. A Project Timeline and Gantt chart 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. Commnet also will pay for the cost, on its own, to bring wireless service to premises where it is not feasible to offer a minimum of 100/100 but will offer an option for a plan less than 100/100 that would still benefit those residents.

La Paz County government is grappling with a current budget deficit of over $4 million and although the county is fully supportive of the project and understands the need for broadband infrastructure, they are not in a financial position to contribute monetarily to the project. The county will provide whatever support necessary to streamline permitting and access to county land including waiving permit fees for the project.

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

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

La Paz County is a small rural county on the western border of Arizona between Yuma and Mohave counties. The county separated from Yuma County in 1983 and became the youngest county in the state. The county is the fourth poorest county in the Arizona with a median household income of $34,643 and over 20% of the population is below the poverty line. The county has lagged the state and nation in economic development, education attainment and employment. A major challenge in the area and hindrance to economic growth, adequate health care and educational opportunities is the lack of internet connectivity.

Major industries in the area are tourism and Agri-business, although the county has recently attracted both mining and solar farm companies that are developing in the area. These new developments will bring hundreds of jobs and will have a significant economic impact to the area but will need high speed broadband to be successful. Commnet met with stakeholders in the communities to receive input on their broadband needs and these needs were taken into consideration to design the most advantageous network with an emphasis on targeting economic development, public health and safety, and enhanced quality of life for these unserved and underserved communities.

According to the Broadband Now website, the average download speed in Quartzsite is 8.85 Mbps. This is 95.2% slower than the average in Arizona and 1113.6% slower than the national

average. Quartzsite is the 288th most connected city in Arizona. The average download speed in Bouse is 6.69 Mbps. This is 96.4% slower than the average in Arizona and 1505.4% slower than the national average. The average download speed in Salome is 13.62 Mbps. This is 92.6% slower than the average in Arizona and 688.5% slower than the national average. The average download speed in Parker, the county seat, is 93.9 Mbps. This is 48.8% slower than the average in Arizona and 14.4% slower than the national average. These communities, with the exception of some areas in Parker, do not meet the minimum speeds of 25/3 Mb and although there are some areas that have DSL service, the service is slow and unreliable with consistent outages. No residences and businesses in the communities identified for this project have access to fiber for high-speed broadband service.

La Paz County encompasses 4,516 square miles in Western Arizona with a population of 16,557 according to 2020 Census data. In 2010, census data reported a population of 20,489, a decrease of nearly 4,000 residents or 20% of the population! Lack of jobs, low wages as well as adequate and affordable housing contribute to this decline. Lack of broadband further limits the economic growth opportunities for the county. There are two incorporated towns in La Paz County. Parker, the county seat, is located on the Colorado River and has a population of 3,237 according to 2020 Census data. Quartzsite is located on Interstate 10 and has a population of 3,714. The census population data is understated because of the high number of tourists to the area throughout the year. Estimates project the effective population, including visitors in the county, varies from a low of 60,000 in October to a high of over 100,000 in January and February particularly in the area of Quartzsite and Parker.

The proposed project will provide fiber to the premise (FTTP) to 1,250 locations within the defined polygons as presented in the attached maps for the communities of Parker, Quartzsite, Bouse, Salome and Wenden. These communities were chosen because they are the most underserved or unserved in the county and no carrier will build out in the area without a subsidy because the density does not allow for a return on their investment (ROI). Due to the cap on funding for this grant award, these premise counts were identified as the most feasible for a Phase I project with the intent of building out to additional premises as funding becomes available.

La Paz County

Wenden FTTX	200
Bouse FTTX	100
Parker FTTX	300
Quartzsite FTTX	300
Salome FTTX	100

RV/Mobile Home Parks

La Paz has one of the highest number of RV/mobile home park sites in the state. There are over 50 RV parks in Quartzsite and more than 25 in the Bouse, Salome-Wenden area. RV Parks and mobile homes provide for both year-round residences and a significant population of winter

visitors which many stay an extended period of up to five months. These dwelling are not favorable to providing FTTH and as a result lowers the FTTH counts significantly. However, Commnet's plan is the provide fiber laterals to the main administration buildings in the larger RV parks and work with Park management to provide a local Wi-Fi service they can either provide as an amenity or charge as a premium service at their discretion.

Connect America Funding Phase II (CAF-II)

Commnet has been awarded CAF-II funding in some remote locations in La Paz County that will provide 25/3 Mb of residential broadband service via wireless technologies. If the ACA grant for La Paz County is awarded, the presence of close proximity fiber for improved backhaul will allow an upgrade to 100/20 Mb from 25/3 Mb. The number of premises in these areas is 128 in total. The cost to upgrade services to CAF locations will be covered by Commnet and is not part of this grant request.

Demographic Data

Demographic Data by Community	Quartzsite	Salome	Wenden	Parker	Bouse
Number of Households	2120	677	224	960	557
Number of Businesses	58	10	4	147	7
Number of Anchor Institutions	7	1	2	15	1
Total Population	3714	1379	375	3132	1108

Demographic Data by County	La Paz County
Education Attainment	
High School or Higher	79.90%
Bachelor's Degree or Higher	12%
Below Poverty Level	22.10%
Median Household Income	$34,643
Unemployment Rate	3.50%
Covid Rate	19.10%
Opportunity Zones	Yes

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. Each of the offerings will meet or exceed the minimum required broadband speed of 100 Mbps downlink and 100 Mbps uplink. 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.

All customers in the FTTH proposed service area will have at least 100mbps/100mbps 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 non-tribal customers will be [redacted] and [redacted] for tribal customers. Commnet has been granted the necessary designations in other parts of Arizona including the nearby CAF areas.

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 attempts have been made to bring high speed broadband to the communities in La Paz County with no success. Carriers that were awarded E-Rate projects chose not to install additional fiber for commercial use leaving the communities without any chance of leveraging these builds to bring high speed broadband to the area. County officials contacted other carriers that were expanding in the neighboring counties of Yuma and Mohave but were told that there was not a sufficient ROI for the company to expand in La Paz County.

The county also made attempts to seek federal grant funding from the Economic Development Agency (EDA) and the USDA Rural Broadband grant; however, the federal requirements and match commitment made these sources not viable for the county. Commnet has been the only carrier to offer to partner with La Paz 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 lack of existing infrastructure in La Paz County means that there is significant expansion potential in the rural communities of the county. The current funding opportunity is limited to $10 million dollars; therefore, Commnet strategically designed the fiber network to provide the foundation for expanding in other areas of the county. Once the middle mile and initial last mile fiber is in place, a Phase II project will be considered to build out the remainder of the communities addressed in this project. Parker and Quartzsite have some remaining feasible areas that would support FTTH that will require additional funding sources.

One town that was not able to be included in this request for first phase of funding is Ehrenberg. Ehrenberg is a small community west of Quartzsite with a population of 1,160 according to the 2020 Census. Farming is the main industry in Ehrenberg employing over 31% of the working population. Future development would run fiber from Quartzsite to Ehrenberg to provide broadband service to that community.

Another area that would be included in a Phase II project is northern La Paz County or what's commonly referred to as "Upriver". This part of the county includes the La Paz County Park which offers tent camping and 114 RV sites for rent. Next to the County Park is the county

owned Emerald Canyon Golf Course. This busy facility has the same challenges as the County Park and could benefit from a Phase II broadband expansion project. In addition to the county owned facilities, there are several housing developments upriver and a resort near the Parker Dam that would be considered for a Phase II project.

A large solar field project is being developed in the southern part of the county as well as a multi-year mining operation on the eastern border of the county. These large scale projects will require reliable high speed broadband for their operations. As these projects are developing, Commnet will seek opportunities to serve these businesses.

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 number of premises for expansion in Quartzsite is 1,146 and 559 in Parker. There are an additional 554 households in Ehrenberg, west of Quartzsite, that could be served in a Phase II project; however, middle mile fiber would need to be constructed from Quartzsite to Ehrenberg for last mile service to be feasible to this community.

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

The proposed project is the foundation for a future ring in western Arizona. A ring provides the reliability and redundancy to the area that does not exist today. The proposed network is an open access network and will be available to interconnect to any eligible last mile provider to provide low latency, high capacity, redundant broadband to these communities. ATNI's model is to provide middle mile service to rural communities and/or last mile services where a last provider is not able to provide adequate service to the area. There are local wireless service providers in the area that will benefit from the additional bandwidth so they can continue to provide service in the area.

The area has significant potential for Last Mile solutions in the area; however, the middle mile infrastructure must be built to provide the opportunity for last mile providers to enter the market in these areas. As in many areas of Arizona the entire Western region is serviced by Fiber Spurs that when cut bring the entire region down. By constructing a western ring, ATNI can assist

the Western region in developing a strong foundation in an Open Access Network to service the last mile providers wanting to develop the region. By establishing an Open Access Fiber ring from the Phoenix area through the western region and back to Phoenix using a continuous redundant ring could create and economic boom for the entire region and allow critical industries to enter the region knowing they had sustainable broadband resources along with the diverse resources offered by the Western Region and its close proximity to the California market.

In the future, this project could also connect fiber to I-40 and coordinate with the ongoing Arizona's Smart Highway Corridors project to create a complete western Arizona ring that would greatly enhance redundancy in the region.

3. Other Project Outcomes

Colorado River Indian Tribe:

Commnet has extensive experience working with Native American Tribes and understands the importance of tribal outreach. The CRIT reservation surrounds the county seat of Parker, Arizona; therefore, it is important to work with CRIT leadership to ensure Commnet can access Parker through the CRIT tribal land. Commnet met locally with the CRIT Broadband Project Team and presented the network specifics detailed in our grant application. Our intent is to make these assets available based on any future projects the CRIT support. The proposed project, if awarded, would allow CRIT the following advantages:

- All fiber connection providing a low cost diverse route to Phoenix
- Fiber laterals to existing tribally owned businesses in the Parker area
- Pass through fiber to connect to the Casino/tribal assets north of Parker
- Fiber fed small cells in Parker area to allow use of their EBS spectrum for wireless broadband

Cell Towers:

The proposed project area includes eleven commercial cell towers and several existing coverage holes in the coverage area. Commnet is currently working with all the large carriers on both fiber to the tower and new tower builds on a regional scale. We have reached out specific to this area in La Paz County where all the carriers have expressed an interest. These incremental fiber builds would be paid for outside the grant application and will result in both better 5G speeds and enhanced coverage. The tower locations are depicted in the design maps with turquoise triangles.

Fiber backbone for cell towers – Commnet contacted are cell providers with towers in the area and gauged the interest in the providers interest fiber backhaul. The response was overwhelmingly positive. Providing this backhaul for cell carriers will allow for 5G and provide additional benefits in CAF areas from 25/3 Mbps to 100/10 Mbps.