ATC Communications has been providing telecommunications services since 1904. Through the years, ATC has deployed numerous advancements in technology to our customers. Initial broadband internet service offerings were a part of a fixed wireless build out that began in 2000. ATC serves approximately 3,000 customers throughout 40 rural communities in Nebraska with voice, broadband internet access, and video services. ATC currently supplies broadband service at 100 Mbps Download and 100 Mbps Upload or greater to twelve communities and surrounding rural areas in Nebraska.

Fiber deployed as a part of this grant will see a useful life span of 30 years or greater. Fiber related electronics and switching platforms are expected to be relevant for 15 years or greater. Other infrastructure improvements will extend the life of the facilities for the duration of the grant requirements. The Fixed Wireless access equipment ATC has selected will have a 15-year life cycle with incremental updates occurring as the technology evolves. From our experience, wireless components require reinvestment on a regular basis. ATC is committed to the infrastructure improvements as required. Maintenance of the facilities includes a bi-annual inspection of fiber and structural systems including generator, powering, and battery systems. A yearly inspection of each tower site and radio access network components is performed. On-going maintenance of customer premise equipment is performed as needed.

ATC retains accurate information about subscription counts, available network resources, and latency on an individual platform basis. Policies are based on engineering specifications, periodic maintenance, and testing of infrastructure to ensure a resilient, high availability network. ATC employs eight full-time field technicians to perform installations, minor cable repairs, electronic and infrastructure maintenance, and interact with our customers daily to maintain the total infrastructure. NOC systems actively monitor for performance degrading hardware errors, utilization trends, and quality of experience metrics. ATC employs four NOC technicians who specialize in routing, data transport, legacy voice, VOIP, and 3GPP with degrees in electrical engineering, telecom engineering, and network management. Three to four helpdesk agents are available during business hours for troubleshooting and resolving individual customer concerns. The network team and helpdesk continually monitor, adapt, and optimize the broadband network to provide our customers with the best service possible. After-hours support is available to all ATC subscribers and 24/7/365 on-call technicians work to monitor, maintain, and/or repair the network continually.

The investment indicated in this proposal has several components. Fiber infrastructure improvements will have a high impact and greater than 15 years in useful life. ATC will be deploying a carrier grade fiber switching platform in a redundant protected switching architecture. This improvement will not only provide the multi-gigabit backhaul required by the proposed Fixed Wireless infrastructure but will also serve as a staging point for future network architectures. Powering components (rectifiers and generators) have a ten year or greater life cycle, while battery systems in these locations typically see replacement requirements at 5-7 years. Tower mounted equipment requires a more frequent replacement schedule. With a typical life cycle between 5-10 years, basestation (basenode) and antennas at each site see regular replacement over a 15-year period. Hardware will be replaced as necessary in any fault event, and upgraded to newer version hardware as technology improves. Customer Premise equipment has the highest service frequency requirement and

is replaced and upgraded as needed. Please see attachment G1 that outlines the re-investment requirements noted above in our business plan.

ATC will deploy 3.6 miles of mainline fiber to supply bandwidth to the fixed wireless infrastructure. Transport fiber and electronics will be upgraded at each of the 4 tower sites with 10 Gbps uplinks to the core transport network. The fiber network will connect directly to Basestation equipment at the tower. The basestation nodes will be used to onboard up to 196 locations that are currently underserved. The radio system employs advanced RF signal processing elements that leverage multi-path beamforming signals on both ends of each link. The system will be deployed in 6 Ghz, the largest unlicensed band ever allocated for unlicensed use by the FCC. 1250 MHz of spectrum including 6Ghz is available to each cell and channels are assigned by an Automated Frequency Coordination system. By bonding up to four 40 MHz channels, the system will achieve greater than 100 DL and 100 UL to the subscriber locations.

The architecture proposed will service a large geographic area. The Tarana ngFWA platform will deliver modern broadband access within the 2 year scope of the project. Noteworthy technology highlights include, Beam forming on both the tower (Base Node) and customer radio (Remote Node), Interference Nulling to prevent unusable signals and noise, and CPU advances that allow each end of the link to process multiple RF data streams. ATC, RVW Engineering, and Intelliconnect Wireless Engineering performed an extensive test evaluation of the platform. The process included sub-optimal conditions and the effect of these conditions on the overall system. These efforts instilled confidence that within the conservative parameters outlined for location identification, all subscribers will have resilient access to the Radio Access Network. Regardless of the topographical challenges these locations can be served with symmetrical 100 Mbps services with a few months.

ATC Communications has an active NIST-compliant Cybersecurity plan in place. Collaboration with cybersecurity consultants and contracted agencies work to circumvent events that could impact ATC Communications' business operations.