Northeast Nebraska Telephone Company – Butler County - Attachment Letter E_1

Northeast Nebraska Telephone Company (NNTC) was one of the first Nebraska internet providers to invest in fiber for 100% of the company's customers. Since 2015, customers have enjoyed the experience of what fiber can bring in terms of internet speed. NNTC provides all customers with a minimum speed of 100/100 Mbps, with many customers receiving speeds at 800/800 Mbps and a plant that allows up to 1,000/1,000 Mbps. Based on this, our technical capability described in subsequent paragraphs below, and our long history in the telecommunications industry, NNTC has the technical capability to meet the statutory technical and speed requirements in place throughout the fifteen-year period.

NNTC was founded in 1955 as one of the first telephone cooperatives in the state of Nebraska and now is one of seven telephone cooperatives in the state. The company started serving five northeast Nebraska communities in 1957. Through the years NNTC has acquired more communities and today serves 30 communities throughout 24 counties in rural Nebraska. The most recent additions were Clarks, Staplehurst and Ulysses, purchased from Clarks Telecommunications in 2007. The company's goal is to continue to build on its 67-year growth history while maintaining an excellent plant and experience for rural Nebraskans.

Technical staff for NNTC includes an Operations Manager, two Central Office Techs, an IT Specialist, a Network Engineer, eight Combination Technicians and a Construction Supervisor. The new proposed area would be served (and maintained throughout the useful life of the facility) by at least one combination technician with support from the Operations Manager, two Central Office Techs, the IT Specialist and Network Engineer. Our ability to sustain and maintain the network is demonstrated by our technical staff, which has a combined work experience of 200 years in the industry.

NNTC started offering internet services via DSL and dial-up in the late 90s. Today, the company has 22 central office locations, with a meticulous well-maintained plant. Currently our staff is working on connecting all communities with multiple fiber rings with the ability to grow our bandwidth as customer demand dictates. This will also ensure outages are at a minimum while internet speeds are at a maximum. A project is also underway to switch out the company's first generation of fiber transport technology to the latest and greatest technology for ONT capabilities.

NNTC will build fiber to 89 dwellings with 67 miles of last mile fiber. The fiber connection will be placed up to every dwelling, capable of speeds up to a GB upload and download. The fiber build, a MXK-F™ portfolio includes several options for FTTx network design. Its Active Ethernet line cards support point-to-point fiber-based Ethernet services at 1 Gbps data rates. These can be used to aggregate (or subtend) other Ethernet based devices or to provide high-bandwidth services to individual customer premises. Selection of an Active Ethernet point-to-point architecture equips services providers with a comfortably future-proof infrastructure as demand for individual subscriber data rates continue to rise.

The zNID supports Gigabit Ethernet termination with full-featured gateway functionality providing an ideal solution for FTTH deployments. Triple Play services – IPTV, POTS or VoIP this makes service offerings and installations flexible and easy.

The technical components used and the expected useful life of the facilities:

As a way to demonstrate the expected useful life of the facilities, we have attached the depreciation rates that RUS applies to facilities as part of it ReConnect grant program. (See Attachment Letter E_2). Our engineering professional believes the useful life of fiber facilities to be much longer than the depreciable life provided by RUS. The major components of the network and the depreciable and useful life of each component are as follows:

	RUS	Engineer
Buried fiber	20 years	25-50 years
Electronics equipment	10.67 years	10-15 years
ONTS	5-10 years	7-10 years

Components which may require more frequent repair:

The most frequently repaired/replaced items in a FTTH network will be at the customer premise. These items include power supply/battery backup, ONT and premise wiring.

New area customers will be served with brand-new ONTs by DZS™. Remaining equipment would also be supplied by DZS™. In business since 1969, DZS™ prides itself on being a U.S. based manufacture who supplies more ONTs to more providers than any other provider in the country. DZS™ offers the most sophisticated technology on the market today. Another technical advantage for NNTC customers and future customers is the Zyxel® router offered to all customers at no additional charge to ensure an optimal internet and Wi-Fi experience. The project would be 100% fiber-built, which is buried below the frost line to prevent damage to fiber facilities. DZS™ equipment in the projected area would also give NNTC the capability of even faster and easier upgrades in the future. The equipment installed will have the capability for up to 10 GB cards so as technology improves so will internet speeds. NNTC provides redundant paths to our subscriber gear at this point and there are linear paths to the subscriber. NNTC stores replacement ONTs, spare cards and fiber locally to meet any downed or equipment failure.

NNTC prides itself on a reputation for providing the best and fastest internet in the state of Nebraska.

Issues which may require more frequent repair:

1. Buried fiber and equipment are susceptible to burrowing animals and their chewing and damaging of the equipment or cable.

2. Types of failures resulting from accidents, equipment failures and weather.

3. CO equipment, life expectancy is 7 to 10 years, subscriber gear life expectancy would be similar but would depend on the home environment and could be reduced.