

Technical Capability Statement:

Hershey Cooperative Telephone Company (HCTC) has been offering broadband services since 1997. HCTC started off with Dial Up Internet Access in 1997, DSL Internet Access in 2002, Fiber to the Home (FTTH) in the town of Hershey, NE in 2010, and since then has been building FTTH in the Rural areas of our Hershey ILEC exchange. To date, approximately 95% of the rural locations within the exchange have access to the FTTH service. HCTC offers its customers voice and broadband internet services. HCTC currently offers broadband services to approximately 669 subscribers, 164 of which are served via a Fix Wireless network. HCTC currently has five (5) employees. HCTC is currently offering 100/100 Mbps (see web page). HCTC currently uses our own staff to operate and maintain our FTTH system and will use our staff to operate and maintain the FTTH facilities deployed as part of the Hershey Southeast Project.

The fiber optic cable for the Hershey Southeast project will all be buried and be more resilient and less susceptible to damage from the weather like wind and ice/snow storms. The Project will be more sustainable than other technologies, because fiber has a longer useful life span (+50 years), less maintenance intensive, and fiber is more scalable. HCTC currently is using GPON technology over their fiber plant today but could increase the usable capacity of the fiber network by 4 times by upgrading to XGS-10G PON. HCTC would only have to upgrade the OLT and ONT electronics to accomplish this. HCTC would not have upgrade the fiber infrastructure where most the cost is incurred.

HCTC currently uses GPON (ITU G.984) standard FTTH system for their last-mile technology to supply services to their customers where fiber has been built. In the small areas that don't have fiber, HCTC uses ADSL-2+ and VDSL to supply voice and data services. As a single exchange ILEC, HCTC has no middle-mile/backhaul network. Interconnections are handled separately for voice and data. For voice, HCTC utilizes a Metaswitch VP2510 Class 5 switch connected to the Public Switched Telephone Network (PSTN) via CenturyLink/Lumen. For Broadband, HCTC has one optical ethernet connection uplink to Great Plains. For the uplink to Great Plains, HCTC uses a Brocade MLX that has a 10 Gbps physical link with a purchased capacity of 3 Gbps.

HCTC utilizes the Multi-Router Traffic Grapher (MRTG) to monitor the network for outages and high latency and is notified when thresholds are crossed. HCTC monitors the broadband link to Great Plains 24x7x365. If peak usage exceeds 75% peak average utilization over a 5-minute average, HCTC has the capability to increase bandwidth on the existing optical uplinks from the current 3 Gbps to 10 Gbps.

HCTC has support staff available during business office hours, 8:00 AM to 4:30 PM. This excludes weekends and holidays. 24-hour support is available through an on-call number that is routed to on-call HCTC technician's cell phone. HCTC also partners with

an IT consulting firm, Community Connections, that handles and supports a 24 Hour Help Desk. They also perform backups, network monitoring, network maintenance, and assist with network provisioning and troubleshooting. Network components are monitored for minor, major, and critical alarms and the on-call technician is notified by a sense-a-phone.

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

| | <u>RUS</u> | <u>Engineer</u> |
|-----------------------|-------------|-----------------|
| 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.