



Nebraska Broadband Bridge Program

Company: Skywave Wireless, Inc.

Project: SE of West Point

Document: Attachment G

Business Plan

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Mission statement

Skywave is a local service provider. It provides internet and telephone service to its customers via wireless and fiber optic networks. It focuses on all customers in its service areas, residential and business. Skywave's mission is to provide residents of rural Nebraska with telecom services that are competitively priced, the fastest available, and local. The need for communications, specifically increased data bandwidth, is ever increasing and Skywave is deploying cutting edge technologies to make that possible.

Proposed Network

Skywave is proposing an all-underground fiber optic network for the SE of West Point, NE area. The project consists of approximately 60 serviceable locations. ITU G.984 GPON standard will be utilized to provide last mile broadband services. This GPON standard has a capacity of 2.488 Gbps downstream by 1.244 Gbps upstream. Updated versions support up to a 1:128 split ratio. Physical distance between the user and the provider can be up to 40Km with class C+ optics. GPON technology can easily achieve sub 1ms latency. A few factors like distance and equipment used can affect this number slightly, however it still remains one of the fastest distribution technologies. With Quality of Service (QoS) standards and extremely low latency, GPON is capable of delivering the highest (5 - excellent) mean opinion score (MOS).

Useful Life of Network

Skywave has built and maintained its fiber optic network for over 10 years now. One reason why 99% of Skywave's fiber network is underground is for longevity. Underground fiber plants are easier to maintain and are protected from the harsh Nebraska weather. Skywave also protects most of its fiber lines inside plastic conduit. While other companies usually do not install the customers drop cable inside of conduit, Skywave does. This helps protect the customers drop from accidental damage.

Several components of every FTTP network are to be considered when determining useful life of the network as a whole. Fiber optic cables are designed to last well past 25 years. Many older cables are still in use today. Newer technologies have also helped to increase the expected life of these networks. Skywave is still using the same hardware platform that it installed over 10 years ago. GPON technology is ahead of the demand for bandwidth and hardware vendors are designing hardware to last. Skywave foresees that the useful life can be well over 15 years for hardware platforms and longer as those platforms are maintained and updated as hardware vendors progress. Hardware platform costs are small part of the overall expense of the network. Skywave designs and engineers its network in an effort to extend its useful life to 30 years or more.

Legal Challenges

Skywave is a licensed CLEC (Competitive Local Exchange Carrier) in the state of Nebraska. This allows Skywave access to public ROW's (Right of Way) and utility easements of record. Skywave works with all local,



state, and federal authorities in any additional permitting processes. We do not foresee any legal challenges with this project.

Products and Services

Skywave offers a variety of services. These include various data services: residential internet, business internet, and private business links.

Telephony services include: residential and business POTS (plain old telephone service), hosted PBX solutions, e-fax, and traditional fax service.

Construction services include: trenching, horizontal directional drilling, excavation, utility locating, fiber splicing, and structured wiring.

Operational Plan

Skywave's plan for ongoing operation of this project is to add it to already existing systems and support staff that operate its current FTTP networks.

Skywave will continue to maintain internal staff that monitors and rectifies any issues with performance or capacity on the network. The on-going maintenance of the physical fiber optic plant is handled by outside plant technicians. Skywave has several crews of experienced fiber optic installers. Everything that is needed to maintain and service the network Skywave has in-house. This allows Skywave to keep its costs down and response times up without having to rely on outside contractors.

Skywave's technical staff handles the provisioning and maintenance of fiber optic electronics and CPE equipment used to provide services to its customers. IT staff also handles interconnection equipment and devices. Internal ticketing systems and procedures are used to provision all services from start to finish. All departments communicate using this system. This allows Skywave to provide quick response and excellent customer service.

Financial Analysis

Skywave has been building and operating its fiber network since 2012. It currently has completed networks in West Point, Beemer and Oakland. These projects are all profitable and help provide capital for future growth and maintenance of fiber optic plants.

The SE of West Point project will consist of approximately 60 serviceable addresses. Skywave's current fiber network ARPU (Average Revenue Per User) is approximately \$74. Skywave has seen in the past a 30%-50% take rate after the first year of service. This would bring in over \$16,000 in revenue a year. Skywave has estimated that the project will cost around \$256,000. With the life of the network easily being over 30 years, this implies a ROI (Return on Investment) of less than 10 years.

The funds provided by Nebraska Broadband Bridge Program are going to encourage faster deployment of high-speed broadband networks by Skywave and other providers while targeting areas that need it most.

Financial Analysis: Cash Flow and ROI						
Possible Subs	60				Cost of Project	\$ 256,600.00
ARPU	\$74				Skywave's Cost	\$ 141,130.00
					Annual 10y Loan Pmt at 7%	\$ 19,663.68
Year	Take Rate (%)	Subs	Monthly Sub Revenue	Yearly Sub Revenue	Debt Service	Cash Flow
1	20	12	\$888.00	\$10,656.00	\$ 19,663.68	(\$9,007.68)
2	25	15	\$1,110.00	\$13,320.00	\$ 19,663.68	(\$6,343.68)
3	30	18	\$1,332.00	\$15,984.00	\$ 19,663.68	(\$3,679.68)
4	35	21	\$1,554.00	\$18,648.00	\$ 19,663.68	(\$1,015.68)
5	40	24	\$1,776.00	\$21,312.00	\$ 19,663.68	\$1,648.32
6	45	27	\$1,998.00	\$23,976.00	\$ 19,663.68	\$4,312.32
7	50	30	\$2,220.00	\$26,640.00	\$ 19,663.68	\$6,976.32
8	55	33	\$2,442.00	\$29,304.00	\$ 19,663.68	\$9,640.32
9	55	33	\$2,442.00	\$29,304.00	\$ 19,663.68	\$9,640.32
10	55	33	\$2,442.00	\$29,304.00	\$ 19,663.68	\$9,640.32
					10 year Capitalization	\$21,811.20
Note: Debt Service is included with interest. Actual need for financing for this project will be considered on an ongoing basis according to available cash flow and other ongoing projects.						

Summary

The SE of West Point project is not a large undertaking but is going to make a big impact on the community. Skywave has been in contact with residents of the area discussing the possibility of completing a project such as this. It is clearly evident that residents of SE of West Point have been disadvantaged for some time because of the rural location of the housing developments and trees surrounding the areas. The proposed network will permanently provide gigabit services to all residents in this project area.