Tower Cloud, Inc.
Easygrants ID: 42

Executive Summary – Alabama application

Overview

Tower Cloud proposes to build a new middle mile broadband network to serve the backhaul needs of wireless carriers such as ███████████, █████ and others to enable the launch and expansion of wireless mobile broadband services.   The broadband network will connect 163 cellular towers to the wireless carrier's mobile switching centers (MSC's) to enable the high speed SONET and Ethernet backhaul connectivity required by 3G and 4G mobile broadband services. The backhaul network will enable the wireless carriers to provide last mile mobile broadband services to end user customers including consumers, business, government, public safety and other anchor institutions. In addition, the fiber network will pass within one mile of 103 community anchor institutions and public safety entities that would also have access to directly connect to the middle mile network for broadband needs or connection to the public Internet. The project supports the following BTOP objectives of the Recovery Act:

   a) Improved access to broadband service to consumers residing in underserved areas
   b) Provide broadband access to community anchor institutions (e.g. schools, libraries, medical facilities)
   c) Improve access and use of broadband service by public safety agencies
   d) Stimulate demand for broadband, economic growth and job creation

Background on cellular backhaul
Currently cell sites are typically connected to the carrier's MSC's by traditional T-1s carried over copper infrastructure of the incumbent local exchange carrier (ILEC). With the launch of new wireless broadband services (e.g. the I-phone, Blackberry's, laptop cards) and increasing popularity of wireless "smart phones" the backhaul bandwidth requirements of a typical cell site are expected to grow from approximately 5 megabits per second (mbps) to 100-300 mbps over the next 3-5 years. In addition to the 20x-60x increase in capacity, carriers will require more data efficient Ethernet capacity rather than T-1's to support their next generation cellular networks. Since traditional T-1's are not able to scale cost effectively to meet the fast growing demand for mobile data services, wireless carriers are seeking new high speed backhaul solutions that utilize fiber and high speed microwave like those provided by Tower Cloud.

In large Tier 1 markets (i.e. Atlanta, New York, etc.) cell sites are dense and therefore close enough to existing fiber networks that companies are actively building fiber and microwave networks to meet these fast growing backhaul needs. This application targets

smaller markets to enable the same kind of high speed mobile broadband services as are available in larger markets, thereby eliminating the digital divide in mobile broadband, while at the same time providing a robust middle mile network that can be accessed by anchor institutions, public safety, commercial businesses and others.

Broadband System Summary
Tower Cloud's backhaul solution is focused on building new fiber routes throughout the targeted markets to reach the cellular towers. At each cell site we install high capacity Ethernet transport equipment capable of enabling 100 mbps of capacity immediately with a planned upgrade path to over 300 mbps. Cellular towers that are served by Tower Cloud's fiber network are also used as aggregation hubs for high capacity microwave links that reach out deeper in the market to connect other cellular towers. To increase access and encourage broadband use the specific routes of the new fiber rings or laterals will be engineered and constructed to pass close by community anchor institutions, businesses and other potential users. New fiber routes that reach outside of the metropolitan areas extend broadband services to cell towers and critical anchor institutions in underserved areas.   In addition, some of the cell sites served will be located on commercial building roof-tops enabling easy connection with other tenants and community anchor institutions located in the buildings.

Funded Service Area
Tower Cloud's network will serve the broader metropolitan areas of Huntsville, Montgomery and Dothan, Alabama. Tower Cloud has targeted these markets because our wireless carrier customers have identified them as having inadequate backhaul infrastructure and limited vendor options.   The proposed network extends new fiber laterals from existing fiber backbone to connect cell sites within the metropolitan areas. New fiber rings are also constructed to more suburban and rural areas to reach underserved areas. In the Huntsville market we will add two new fiber rings totaling 153 miles to reach the Decatur and Athens areas that includes 122 miles in rural areas and 20 miles in suburban areas. From Dothan we will build a 45 mile fiber ring that reaches to the Fort Rucker area that includes 22 miles in rural areas and 23 miles in suburban areas. We will also build a new 32 mile fiber ring from Montgomery to connect the Wetumpka area that will include 20 miles in rural areas and 12 miles in suburban areas.

The networks will include 163 interconnection points with 16 interconnection points in underserved areas. The network will be designed to pass near 103 anchor institutions that have been identified within one mile of the proposed fiber network. In addition, in the funded service area the network will pass 270,439 households and 26,598 businesses.

Proposed Services
Tower Cloud's middle mile broadband networks are designed to provide a wide range of services to wireless carriers, businesses and community anchor institutions. The service

offerings include TDM (time division multiplexing) services at speeds of T1/DS1, DS3, OC3, OC12, OC48 and OC192. Ethernet services ranging from 10 megabits per second (mbps) to 1 gigabit are also available with 50mbps to 300 mbps the most common broadband speeds. We also offer wavelength and dark fiber services where sufficient capacity is available.

Subscriber Projections

The cell site backhaul network is estimated to serve 91,000 end users initially. It is anticipated that this end user base will expand as the wireless industry grows and carriers launch 4G service based on LTE technology, which is estimated to be commercially in service during 2011. In addition, critical community anchor institutions served by the middle mile network are expected to grow to between 66 - 100 entities by year five.

Non-discrimination and interconnection

Tower Cloud will follow the nondiscrimination and interconnection obligations contained in the FCC's Internet Policy Statement. We offer interconnection, where technically feasible, to provide wholesale access to our facilities without limiting capacity at market competitive rates and terms. This includes both the ability to connect to the public Internet and physical interconnection for the exchange of traffic.

Job Creation and Economic Benefit to the Communities

Our project is shovel-ready and will have the immediate impact of creating or saving approximately 42 jobs. This job creation will occur at Tower Cloud, and within our suppliers and contractors assisting with the project. Tower Cloud anticipates expanding its staffing by 12 positions to support the roll-out of the proposed networks. In addition, Tower Cloud will be securing contracts with highly qualified General Contractors in the targeted markets to provide the necessary resources to design, engineer and build out our proposed networks. Approximately 30 full time resources will be required to support the initial build-out of the network. This will include resources to support equipment configuration and software installs, engineering design, permitting packages and construction of fiber laterals, splicing fiber to the backbone, site acquisition specialists to secure landlord leases, cell site compound equipment installs and tower crews to install microwave radios, dishes, coaxial cable and perform path alignment.

Additionally, because our project is a capital intensive telecom infrastructure project, there will be other tangible benefits to the communities where our networks are located. As an example, we expect to pay approximately $1.3million in property taxes on the infrastructure during the project term that will directly benefit local schools and other community institutions.

Qualifications of applicant

Tower Cloud is led by a management team with extensive experience in the telecommunications industry and experienced in implementing network projects like the one proposed in this application. The company currently operates backhaul networks for cellular carriers in Orlando and Miami, FL. We are also in the process of constructing a large backhaul network to serve the 4G backhaul needs of wireless carriers in Atlanta, GA. The CEO has over 25 years experience in telecom including 15 years with Verizon and over 10 years in fiber services businesses that construct and operate fiber networks. The senior executive team averages 30 years each of related business experience. The company is funded by a strong group of investors that include Sutter Hill Ventures and El Dorado Ventures that are prepared to invest the capital required by Tower Cloud for this project. Sutter Hill has been in business since 1962 and has over $1 billion under management. El Dorado has over 20 year track record investing in early stage businesses and has over $750 million under management. Both Sutter Hill and El Dorado have provided letters confirming their intent to invest the equity required to fund Tower Cloud's portion of the project.

Infrastructure cost of broadband system
The overall infrastructure cost of the broadband system will be $27.5 million. Tower Cloud is prepared to invest 20% of the capital required and is requesting 80% be considered for grant, or $22.0 million.   Tower Cloud will also fund the working capital and initial operating losses of the project bringing our total investment in the project to $6.6 million.