

## Broadband USA Applications Database

**Applicant Name:** NTCH, Inc.

**Project Title:** NTCH (Cleartalk) West Tennessee Broadband Wireless Last Mile/Middle Mile application

**Project Type:** Last Mile Non-Remote

---

### Executive Summary

---

a. Opportunity: This NTCH Wireless Infrastructure application addresses the opportunity to utilize and expand an existing cellular tower network to bring next-gen broadband to 499,510 people in our Service Area. b. Service Area: Our Service Area covers 17 counties. Income demographics of our Service Areas average \$29K-\$32K per household which is below the annual state average and far below the federal average. The counties in our Service Area suffer from unemployment from 10+% to 19%. Our Service Area has the highest per capita bankruptcy rate in the United States. The Service Area endures an adoption rate of 29%. c. Households & Businesses: Census.gov has identified 18,321 businesses passed in the Service Area by County, and 203,437 households in the Service Area by County. Connected TN reports that 34,925 households are 'unserved'. d. Anchor institutions, public safety, or health, education, library: Infomap has also identified 2,489 such entities within the counties making up our service area (half being medical providers). Almost every county has an industrial park (with varying degrees of activity today), and as mentioned, our Legislature has approved a west Tennessee Megasite which this project proposes to serve. A federal 'fresh-water-port' is proposed for the Northwest corner of Lake County on the Mississippi River which this project likewise proposes to serve. e. Proposed services and applications: We seek funding to deploy shared towers, the latest advancements in Software Defined Radios with a path to 4G/LTE, and an open wholesale and network structure that will foster competition in the Service Area. Highspeed broadband over the EVDO Rev A 3G standard will be provided with speeds in excess of 2.5mbps down load and 700kbs upload. This service will be available both fixed and mobile. The budgeted cost per unlimited usage (subject to the fair sharing provisions set forth below) will be \$35 per month per access point. CPE required to provide this service on desktop computers are industry standard and used by two of the nation's four largest telecommunications carriers. They range in cost at a wholesale level from \$28 (EVDO rev 0 device capable of only reduced speed) to \$99 USB EVDO Rev A device. In addition and together with the companion applications mentioned above, netbook computers purchased from suppliers such as Dell in Tennessee will be made available for access to health care and public safety agencies, and we anticipate they will be checked out for use by schools and libraries within the funded and existing service area of the applicant. (f) Non-discrimination and interconnection - This network will abide by the FCC's Internet Policy Statement (FCC 05-151) and the requirements of the NOFA; policies and arbitration provisions concerning non-discrimination and interconnection will be posted on the applicant's website. See question 22. (g) Network type and description- At the heart of this proposal is the use of an existing cell tower network to deploy 3-G switching equipment and wireless internet assets on the existing towers, plus build and equip new towers in eligible areas. The service areas are all within the territory for which the carrier has

acquired licensed spectrum. This EVDO Rev A application provides a comprehensive rural solution on a cooperative basis for West Tennessee. This new software defined radio network will accommodate 4G (LTE / Wimax) upgrades and the proposed 700 mhz public safety network on the same base stations. This open network will enable broadband any time, any where to those who can't access and/or can't afford high speed internet access. (h) Sustainability: The team making this application has a 15 year history of deploying networks for both large and small carriers and is responsible for some of the most timely deployments ever done, a 10 year history of operating telecommunications networks- including high speed data networks in rural areas, and a good track record of working together with small companies and government entities in the multiple states where they operate. When taken as a whole, this application provides for the least cost to reach the most people and meet the goals of the ARRA. (i) Infrastructure: The software-defined base stations deployed can provide for CDMA, GSM, HSDPA, EVDO and the 4G technologies that have been chosen by the major carriers, WiMAX and LTE. These radios will also accommodate deployment of a long planned public safety interoperability network at 700 MHz. This is a split architecture base station deployment, which uses fiber instead of coax to carry the signal up the tower, and the latest antennas. This provides for up to a 5 db improvement in RF performance and expands coverage on a given site up to 5 miles farther than the traditional networks. Cleartalk's network is enabled through a softswitch core, manufactured by ZTE, a worldwide technology company, and software-defined base stations. These base stations will be matched with native IP backhaul radios from Trango Systems, Inc., a Poway, California-based manufacturer of high capacity, carrier microwave radio systems with proven performance in some of the most difficult environments operated by Cleartalk. Middle mile service will use a combination of microwave backhaul and fiber networks. Clear Talk will choose aggregation equipment that works best with the fiber networks of its backhaul providers. (j) Projection numbers: Conservatively, we expect subscribership of- Yr 1 1.8%, Yr 2 3.3%, Yr 3 4.2%, Yr 5 4.7% of covered population. We project that at the end of the five year period we will have 23,477 subscribers on this network. (k) Job Creation Potential: Connected Nation's website estimates that Economic Stimulus Spending throughout Tennessee would produce 49,142 jobs plus increase productivity for employed person. Mathematically, this suggests job creation from the build out in our Service Area of 3,996 jobs.