

## Broadband USA Applications Database

**Applicant Name:** ALTIUS Broadband LLC

**Project Title:** ALTIUS Rural Project

**Project Type:** Last Mile Remote

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### Executive Summary

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NTIA & RUS BROADBAND GRANT EXECUTIVE SUMMARY About ALTIUS Broadband LLC: ALTIUS Broadband is a wireless ISP that has partnered with Motorola as their equipment vendor to build networks in rural Maryland and Kentucky. We currently operate on 25 towers in Kentucky and 3 towers in Maryland and are working to accelerate technology in these states to bridge the digital divide. We serve over 1300 customers in both states combined. We were founded by Jim Connor in March of 2006. We acquired the internet division of Fleming Mason Electric Co-op in May of 2008. Our website is [www.altiusbroadband.com](http://www.altiusbroadband.com). Project Purpose: ALTIUS Broadband has a comprehensive plan that will blanket North East Kentucky and Northern Maryland with broadband internet access and dramatically improve the use of related technology to the underserved and non served areas of Baltimore, Carroll and Harford counties in Maryland; and Mason, Fleming, Lewis, Bath, Nicholas, Harrison, Bracken and Pendleton counties in Kentucky. The program is being pursued with the cooperation of the States of Maryland and Kentucky and their local jurisdictions. ALTIUS Broadband will work across all sectors of the state economy in partnership with telecommunications providers, information technology companies, public agencies, business leaders, community leaders, researchers and universities in an effort to meet specific goals which include: \* Affordable broadband availability for all of Maryland and Kentucky; \* Dramatically improved use of computers and the internet by all citizens of these states; \* Local technology planning teams that include every and all possible communities; \* A meaningful internet presence in all MD & KY communities, to improve citizen services and promote economic development through e-government, virtual education and e-health solutions; and \* A policy and business framework that encourages continued investment in communications and information technologies year after year.

Introduction: Between June 2008 and March 2009 ALTIUS Broadband compiled data and physically visited multiple "vertical assets" in all the above mentioned counties. Any tall structures such as broadcast towers, elevated water tanks, the rooftops of multi-story buildings, grain elevators, etc. were considered as potential transmit sites for the purposes of this report. Prior to beginning the wireless assessment, it was first necessary to obtain the broadband coverage data from incumbent operators in the counties or those whose service extended into the counties. Provider data was obtained from a combination of an in person market survey, telephone interviews and potential customer feedback from fliers left on doorknobs of houses. Once the broadband coverage for these providers was determined and the gaps identified, the visual assessment included a focus on: \* ways in which to design a wireless broadband system using our potential transmit locations to take advantage of our existing infrastructure and bandwidth to re-transmit our signal into these areas; \* surveying the availability of adequate power sources and overall functionality at each location; \* identifying any issues regarding ingress and egress

at each location; and \* creating a methodology for the expansion of wireless broadband coverage into these underserved and non served areas. Potential Tower Locations: The initial inventory consisted of approximately 36 broadcast towers and 43 water towers. The preliminary study included eliminating those potential transmit sites that were not viable for the project (e.g. proximity to target area, tower is overloaded, tower does not provide substantial coverage, tower provides duplicate coverage et al) and those that were optimal for the project. Several sites were immediately eliminated from the FCC Antenna Structure Registration list because they were too far outside of the county boundaries or registrations had been canceled, terminated or were listed as dismantled. After the preliminary assessment 51 potential transmit broadcast towers remained. Ultimately, 33 towers were identified as "optimal locations" which can be used as part of the composite wireless network for both Maryland and Kentucky networks. (See separate tower document) Data Modeling: The terrain of most of these counties is comprised of undulating hills and dense foliage. Traffic model characteristics generally include average throughput for residential and business accounts, peak usage periods, committed versus maximum burstable information rates, availability of spectrum, frequency re-use, overhead link budget, free space loss, sector overload potential, transmit power, C/I ratios, error correction and modulation density. These characteristics were studied in detail for this document as the system design and equipment selection is based on these factors and built in a way to overcome these repeating challenges regardless of the area. Predictive data used in this study included NAD 83 and NAD 27 three second terrain, USGS land use/land clutter from Radio Mobile V8.0.5 (the current tool used by ALTIUS in our existing operations). Local Job Creation: The proposed wireless broadband project will allow ALTIUS to add 5-7 new jobs to ALTIUS Broadband during the course of the project. Because ALTIUS will have a local customer service center in order to improve customer satisfaction, 2-3 of these jobs will be directly tied to the successful ongoing nature of the project. The other 4-5 jobs mentioned will be for the initial build out phase and we would hope to be able to keep at least 3 if not all of the positions on board thereafter. The impact of these projects to the communities at large is substantial. Local businesses that currently rely on dial-up will be capable of growing and adding employees and mothers and fathers who work far away will have the option to work remotely from home, allowing them to spend more time with their children. It is a true win-win situation.