

September 10, 2024

Via Email to BEAD@NTIA.gov

Alan Davidson, Assistant Secretary
Department of Commerce
National Telecommunications and Information Administration
1401 Constitution Ave, NW
Washington, DC 20230

Dear Assistant Secretary Davidson,

For 25 years, Cambium Networks, Ltd. and its predecessor Motorola Solutions has been designing and delivering fixed wireless broadband access equipment to support fixed wireless networks to more than seven million premises across the country and internationally. Cambium products and services support communications networks deployed by service providers, enterprises, governmental and military agencies, oil, gas and utility companies, Internet service providers and first responders. Here in the United States, we support broadband deployments using several licensed, licensed-by-rule and unlicensed spectrum bands, including 3.55 GHz (Citizens Broadband Radio Service), 5 GHz (U-NII), 6 GHz (U-NII), 28 GHz (Upper Microwave Flexible Use Service) and 60 GHz. Through this suite of technology solutions, Cambium offers its customers options to meet their cost, coverage and quality of service needs and, in turn, evolving consumer demand for faster, reliable service.

Our mission is to connect the unconnected. Our solutions can do this and meet the required 100/20 Mbps at low latency, whether using our licensed bands (including the market leading licensed-by-rule CBRS solution) or unlicensed 5 GHz and 6 GHz fixed wireless (ULFW). This is especially true when the optimal solution is a combination of these bands.

We are pleased that NTIA recognizes the value of ULFW, both as an existing technology that should be protected from government funding and as an alternative to fiber where that is simply not cost-effective to deploy even with BEAD funding. Our experience over the past 25 years makes very clear that ULFW delivers reliable, consistent, and cost-effective service at speeds of 100/20 Mbps or greater. In particular, given sufficient free spectrum and line-of-sight conditions, our new 6 GHz equipment can deliver over 1 Gbps download speeds at ranges of slightly more than two miles, and over 100 Mbps of download speeds to customers up to 10 miles away. 60 GHz mmWave is another ULFW spectrum band that has been proven to deliver Gigabit speeds. Cambium offers solutions that have successfully met UK government-funded voucher requirements for 1 Gbps service delivered to thousands of end users over large geographic areas using a distributed networking topology. Cambium's 60 GHz platform is a mature technology with more than 40,000 homes served. Many of our customers continue to invest in our ULFW products because they work, are cost-effective, and can be deployed quickly across a wide geographic area to areas with low population density that cannot be efficiently served by fiber – qualities that are a perfect match for connecting rural communities through BEAD. In this regard, fixed wireless, including ULFW, outperforms current low earth orbit satellite in terms of latency, security and local management. We believe NTIA should direct states to adopt scoring criteria that accounts for these advantages.



In Section 3 of the Proposed Guidance on Alternative Technologies, Cambium strongly agrees that locations subject to an “enforceable commitment” or where ULFW service is already deployed at 100/20 Mbps with latency below 100 milliseconds should be off-limits for BEAD funding. As a factual matter, these locations are “served” (or will be under programs like CAF, RDOF and ReConnect) and the government should not be subsidizing competitive networks that could destroy or severely impair the viability of private and previous public investment. With respect to Case 2 in particular, it should be sufficient for a provider of ULFW to demonstrate to an Eligible Entity that it has a track record of deploying broadband networks for at least two years and that its broadband label includes a service tier that meets or exceeds the 100/20 Mbps benchmark. Furthermore, locations meeting these criteria should be exempt from a challenge process – instead, the Eligible Entity should make its decision based on the alternative technology provider’s submission.

In Section 4 of the Proposed Guidance, we offer two recommendations. First, where an Eligible Entity conducts one fiber-only application round and receives no bids for a project area, the Eligible Entity should consider Alternative Technologies. Second, where an Eligible Entity receives only one bid to deploy fiber for a project area and that bid is above the Extremely High Cost Per Location Threshold, the Eligible Entity should treat the area as if it were Case 2 and invite participation by providers of Alternative Technologies. Adopting these two recommendations will help expedite service to unserved and underserved locations at lower cost, allowing finite BEAD dollars to be used for truly unserved and underserved areas, community anchor institutions and digital equity and adoption.

Finally, whether for existing providers submitting information to an Eligible Entity to avoid BEAD funding in areas they serve and for providers to participate in the BEAD application process, NTIA should direct Eligible Entities to make the processes as efficient as possible. Providers should not be required to make lengthy submissions to demonstrate their capabilities; rather, Eligible Entities should require only the level of detail they need to determine whether the provider meets the capacity conditions and rely on the provider’s certifications wherever possible.

We appreciate NTIA’s consideration of the impact and importance of ULFW in the success of the BEAD program and believe that our recommendations will promote efficiency, cost-effectiveness and expeditious buildout. We look forward to continuing our role as a leader in enabling broadband deployment to rural communities under this generational program.

Respectfully submitted,



Scott Imhoff, SVP of Product Development
Cambium Networks, Ltd.

