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***Via Email (BEAD@NTIA.gov)***

The Honorable Alan Davidson  
National Telecommunications and Information Administration  
U.S. Department of Commerce  
1401 Constitution Avenue, NW  
Washington, DC 20230

*Re: Comments on Proposed BEAD Alternative Broadband Technology Guidance*

Assistant Secretary Davidson:

Tarana Wireless submits these comments in response to the National Telecommunications and Information Administration's (NTIA) proposed Broadband Equity, Access, and Deployment (BEAD) Alternative Broadband Technology Policy Notice (Policy Notice).

U.S.-based Tarana Wireless is the performance leader in next-generation fixed wireless access (NG-FWA) solutions, powered by proven breakthroughs in multi-dimensional optimization of radio signals. Tarana's Gigabit 1 (G1) platform overcomes previously insurmountable network challenges for service providers in both mainstream broadband and underserved markets, using unlicensed spectrum to provide up to gigabit-speed broadband that is more economical and faster to deploy than other alternatives. G1 is a complete end-to-end solution for large-scale broadband that brings fiber-class service to fixed wireless with custom silicon and advanced software, including interference cancellation, for optimal service speed and reliability. G1 is a ground-up, fresh approach with patented technology designed to solve challenges once plaguing the fixed wireless industry. G1 is not re-purposed legacy wireless technology, but rather showcases the ability to deliver reliable, highly available, and scalable wireless broadband at gigabit speeds to large numbers of end-users simultaneously. G1 operates in both licensed and unlicensed spectrum, and thus may be used by licensed fixed wireless providers offering Reliable Broadband Service as well as fixed wireless providers using unlicensed spectrum, classified as Alternative Technologies.

As states move towards selecting subgrantees to extend broadband services to unserved and underserved locations within their jurisdictions, it is appropriate for NTIA to provide additional guidance regarding the parameters applicable to the award of alternative technology subgrants. These parameters should recognize the particular characteristics of the last-mile technologies states are considering to meet their BEAD requirements. In this context, requiring states to include the cost of end-user equipment in last-mile deployment subgrant agreements is a reasonable approach.<sup>1</sup> As the draft Policy Notice observes, these costs "are eligible uses of BEAD funds,"<sup>2</sup> and including them in prospective subgrantees' pricing proposals will aid states in comparing the relative costs of last-mile subgrant proposals using different technologies. The Policy Notice also

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<sup>1</sup> Draft Policy Notice, p. 12.

<sup>2</sup> *Id.*

should clearly reaffirm that a state selecting an alternative technology subgrant must select “the most robust, affordable, and scalable technology achievable under the circumstances particular to a location,” as the BEAD Notice of Funding Opportunity (NOFO) requires.<sup>3</sup>

***The Policy Notice Should Facilitate States’ Evaluations of Alternative Technology Providers’ Ability to Meet the Minimum Technical Qualification.*** The draft Policy Notice makes clear that all prospective subgrantees, including those proposing alternative technologies, must meet the minimum technical qualification of being able to provide at least 5 Mbps of capacity (or 2 TB of monthly usage) to each broadband serviceable location (BSL) in the proposed project area.<sup>4</sup> As the draft Policy Notice observes, different broadband providers’ showings of this capability “may reflect the unique nature of those solutions.”<sup>5</sup> The unique nature of these showings, however, may make them difficult for states to evaluate, particularly where the showing depends on complex, detailed technical analysis.

This type of capacity analysis will be most complex when considering broadband technologies that use “last-mile” facilities that are effectively shared with areas well beyond the proposed project area, as is the case with low earth orbit (LEO) satellite proposals. LEO satellite systems’ capacity is determined by factors including the bandwidth of the spectrum available to the satellite operator, the number of satellites in the provider’s constellation (currently and during the performance term of the award), and the capacity and number of spot beams supported on the satellite operator’s satellites. These factors effectively limit the number of users that can be served at a particular capacity level. As an illustrative example, assuming a real-world spot beam aggregate capacity of 1 Gbps, and given the requirement to reserve 5 Mbps per household, the total number of households served by a given beam would be limited to a maximum of 200. If the LEO satellite provider’s system used spot beams of 150 square miles per beam,<sup>6</sup> this would mean that the LEO satellite system’s household density could not exceed  $200/150 = 1.33$  households per square mile.

These threshold qualification determinations are too important to allow states to rely simply on subgrantee applicants’ certifications,<sup>7</sup> but may be too complex for states to evaluate on an ad hoc basis. As a result, NTIA should aid states’ consideration of alternative technology proposals by publishing a density threshold to facilitate determinations of whether LEO satellite deployments can meet the minimum technical qualification. This density threshold (such as 1.33 households per square mile, as in the example above) would provide a bright-line rule for states to identify the density of project areas above which LEO satellite technology could not meet the minimum technical qualification. NTIA could establish this threshold or thresholds based on input from all

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<sup>3</sup> BEAD NOFO, p. 39.

<sup>4</sup> Draft Policy Notice, p.14.

<sup>5</sup> *Id.*

<sup>6</sup> It has been reported, for example, that Starlink’s spot beams cover cells 15 miles in diameter, which is roughly 150 square miles. See, e.g., Sergei Pekhterev, “The Bandwidth of the Starlink Constellation, and the Assessment of Its Potential Subscriber Base in the USA,” SATMAGAZINE (Nov. 2021), <http://www.satmagazine.com/story.php?number=1026762698>.

<sup>7</sup> The draft Policy Notice should be revised to eliminate any suggestion that a certification alone could be sufficient. See Draft Policy Notice at 14 (“To meet the minimum technical qualification, a proposed BEAD deployment project relying on Alternative Technologies for the delivery of last-mile service must include a *certification and/or documentation* that the subgrantee is able to provide at least 5 Mbps of capacity (or 2 TBs of usage per month) to each BSL in the project area where a subscriber requests and is provisioned service.”) (emphasis added).

relevant stakeholders, including LEO satellite broadband providers, and include it in this Policy Notice or supplemental policy guidance to states considering alternative technology proposals.

Such thresholds also could be useful to states considering technical showings by unfunded LEO satellite providers under “Case 2” discussed in Section 3.2 in the draft Policy Notice.<sup>8</sup> States’ ability to accurately assess Alternative Technology Providers’ technical showings could be equally important under Case 2 as in the subgrant selection process, if not more. In both cases, customers’ ability to obtain high-quality broadband service depends on the state’s ability to determine whether the provider can meet the minimum technical qualification, but in Case 2 there will be no BEAD subgrantee subject to BEAD nonperformance measures such as performance bonds if the provider’s actual performance is below the required levels.

***The Policy Notice should include consideration of consumer pricing in “Case 2.”*** In situations where an existing broadband provider seeks to proceed under “Case 2” to show that “Alternative Technology service is already meeting BEAD program requirements” such that “BEAD funds are not necessary for those locations,” the draft Policy Notice would require the existing Alternative Technology broadband provider to demonstrate to the state that it has both the technical capacity and the financial/managerial capacity to meet the BEAD standards for broadband service.<sup>9</sup> The draft Policy Notice apparently would not require, however, that states consider the consumer pricing for such service. While it would, of course, be unreasonable to require unsubsidized providers in Case 2 to show that they will fully comply with BEAD pricing standards, including the low-cost broadband option, there is a point at which the provider’s pricing levels would make the mere availability of broadband service insufficient to comport with the BEAD program’s policy goal “to bring affordable broadband to all Americans.”<sup>10</sup> NTIA therefore should include some consideration of consumer pricing (including the cost of customer premises equipment<sup>11</sup>) in determining whether BEAD funds “are not necessary for those locations and will not be allowed.”<sup>12</sup>

***The Policy Notice should offer additional time for providers to qualify in “Case 2.”*** As part of the qualification process for ‘Case 2,’ the policy notice directs eligible entities to give existing alternative technology providers at least seven days to express their interest in qualifying.<sup>13</sup> While Tarana Wireless understands the need for these processes to be timely and efficient, seven days is too short a timeframe. Tarana Wireless believes that extending the qualification window to ten business days would benefit both the eligible entities and the providers. This extension would allow more time for eligible entities to engage with alternative technology providers to encourage greater participation. Additionally, a longer window would ensure more comprehensive participation from existing providers.

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<sup>8</sup> *Id.*, pp. 8-9. The draft Policy Notice lays out two scenarios in which BEAD will not fund service to locations already served by Alternative Technologies. The second of those (“Case 2”) addresses situations where an unsupported Alternative Technology provider can show that it can offer BEAD-qualifying service to all locations in the project area. *Id.*, p. 7.

<sup>9</sup> *Id.*, pp. 8-9.

<sup>10</sup> *Id.*, p. 12, *citing* BEAD NOFO, p. 22.

<sup>11</sup> See Draft Policy Notice, p. 12.

<sup>12</sup> *Id.*, p. 8.

<sup>13</sup> *Id.*, p. 9.

Tarana appreciates the opportunity to provide these comments on the draft Policy Notice and hopes that this targeted feedback enables NTIA to provide more useful guidance to states making subgrant decisions in BEAD.

Respectfully submitted,

Carl Guardino  
VP of Government Affairs & Policy