



September 10, 2024

**To: National Telecommunications and Information Administration
U.S. Department of Commerce**

**Re: Broadband Equity, Access, and Deployment (BEAD) Program:
Alternative Broadband Technology Policy Notice**

Comments of Open Technology Institute at New America

The Open Technology Institute at New America (“OTI”) hereby responds to NTIA’s Public Notice inviting comment on proposed guidance to Eligible Entities “regarding the use of alternative technologies to serve unserved and underserved locations in their jurisdictions.”¹

OTI strongly supports NTIA’s goal of ensuring that in every state and territory (“eligible entity”), BEAD funding is implemented to achieve reliable, affordable, and high-speed Internet coverage at every location that is today unserved or underserved, thereby promoting universal access to high-speed Internet coverage. Moreover, in many states, we believe it may be possible to achieve this goal and still have some BEAD funding available to put toward the equally essential need for adoption assistance and other digital inclusion activities. It is widely agreed that while universal *access* to high-speed connectivity is a prerequisite to closing the digital divide, the nation will still suffer from critical digital equity gaps until all households adopt broadband technology. The very limited funding provided through the Digital Equity Act initiative is woefully insufficient for this purpose.² It is also vitally important to extend high-speed broadband access to unserved households as quickly as possible, since the opportunity

¹ Public Notice at 4 (hereinafter “Notice”).

² See “Digital Equity Act Programs,” BroadbandUSA: National Telecommunications and Information Administration (accessed Sept. 9, 2024), <https://broadbandusa.ntia.doc.gov/funding-programs/digital-equityact-programs>.

costs imposed on K-12 students stuck in the homework gap, and on adults denied access to online information and services, has a corrosive effect on social equity and productivity.

Accordingly, we offer these comments to encourage NTIA to amend its Guidance on alternative broadband technologies to give states more flexibility in encouraging the early use of fixed wireless and Low Earth Orbit satellite broadband to fill coverage gaps, in cases where eligible entities determine it is cost-effective and relatively rapid to deploy. OTI agrees that the allocation of BEAD Program funds to projects utilizing an alternative technology that does not meet the BEAD Program’s definition of what it calls “Reliable Broadband Service” must in any case satisfy the program’s technical requirements (100/20 Mbps and latency less than 100 ms) and should initially be limited to locations that exceed the Extremely High Cost Per Location Threshold (EHCPLT).³ However, we are concerned that the draft Guidance does not do enough to give eligible entities the flexibility they need to encourage participation by alternative technology providers or to facilitate the incorporation of these alternative connectivity solutions into the plans of ISP subgrantees.

While we understand that NTIA’s Guidance is in furtherance of the BEAD NOFO’s “clear hierarchy for awarding Unserved and Underserved Service Projects,”⁴ which prioritizes end-to-end fiber, there should also be a recognition that all states and territories will have rural, remote and topographically difficult locations that are unserved and must be part of the initial approved implementation plan. In a few states this may be 1% or less; but in other states this could easily be more than 5 or even 10% of the unserved locations. We recommend that NTIA consider not only the size of this cohort based on objective geographic facts (which could be a share under 5%), but also the strong possibility that at an additional and significant share of locations, the projected cost of deploying fiber (or other “Reliable Broadband Service”) during this period may be higher than many ISP subgrantees will find to be financially justifiable, and so they will not bid on them or will not include those locations in the areas they agree to serve.

A key factor driving this may be the required 25% investment match, which, though it can be waived or covered by states in cases, will generally serve to make participating ISPs more financially cautious with their proposals.⁵ Too many very high-cost locations in an area —

³ As the Notice states: “Where the cost to deploy exceeds the EHCPLT, the BEAD NOFO directs Eligible Entities to seek out ‘the most robust, affordable, and scalable technologies achievable under the circumstances particular to a location.’” Notice at 4.

⁴ *Id.*

⁵ See *Notice of Funding Opportunity: Broadband Equity, Access, And Deployment Program*, BroadbandUSA: National Telecommunications and Information Administration, at 20 (rel. May 2022), <https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf> (“BEAD NOFO”).

particularly in a more low-income area with a potentially smaller anticipated revenue base—may make the deployment unprofitable from the subgrantee’s perspective. And this will be far more likely if the Affordable Connectivity Program (ACP) is not restored to bolster subscription rates. As a result, if a number of states and territories discover, at the conclusion of their bidding process, that they have no subgrantee willing to deploy to a significant share of unserved locations, these eligible entities (and their subgrantees) need the flexibility to “mix and match” technologies, as well as alternative technology providers (i.e., unlicensed fixed wireless and LEO satellite services) ready and properly incentivized to participate from the start.

In addition, we are concerned about how far each state’s BEAD funding will stretch, and in particular whether underserved urban areas and community anchor institutions will get the assistance they need to have truly high-speed and reliable connectivity. Internet for All simply cannot be achieved without leveraging all available connectivity technologies, including unlicensed fixed wireless and LEO satellite connectivity. As NTIA knows, there is not enough BEAD, ARPA, and other public funding available to connect every broadband serviceable location (BSL) with fiber, or even a mix of fiber and terrestrial fixed wireless technologies, given how expensive it is to serve the hardest to reach locations with low population densities or difficult terrain. Vernonburg Group’s Broadband Funding Optimization Tool estimates that the cost of extending end-to-end fiber-based broadband to every remaining unserved and underserved location in the US would be approximately \$120 billion, far outstripping available funding.⁶

Eligible entities’ broadband offices (BEAD grantees) must include in their BEAD Final Proposals a plan to extend connectivity to *every* unserved location, a goal that can therefore likely only be achieved by leveraging all available technologies, including fixed wireless and LEO satellite connectivity. If states and territories do not have a plan to serve even the most remote and expensive unserved locations, including those that may not attract bids, under NTIA’s rules they cannot move on to serving underserved locations or community anchor institutions with higher-speed broadband technologies such as end-to-end fiber.⁷

Another equally important reason that we believe NTIA should give eligible entities the flexibility to accommodate the cost-effective use of alternative technology broadband providers is the opportunity to reprogram remaining funds to promote adoption. The bipartisan Infrastructure Investment and Jobs Act (IIJA) that created BEAD allows for other uses of these funds to promote digital inclusion once all unserved and underserved locations have a provider’s

⁶ See Vernonburg Group, “Broadband Funding Optimization Tool” (accessed Sept. 7, 2024) <https://www.vernonburggroup.com/broadband-funding-optimization-tool>.

⁷ BEAD NOFO at 41.

commitment to connect them.⁸ While most eligible entities will need every dollar of their BEAD funding (and often more) to connect all unserved and underserved locations, we believe that giving them the flexibility to use alternative technologies where it is clearly more cost-effective can not only stretch deployment dollars further, but in some states and territories allow remaining funds to be used for digital adoption and related digital equity efforts.

Any additional federal funding that can be freed up for state and local digital adoption efforts could have a substantially larger impact on narrowing the digital divide than would holding out for fiber-to-the-home connections in outlier locations with exorbitant costs and delays. While over 6% of US residents still lack access to broadband infrastructure, Pew Research Center and other survey data, including by NTIA itself, show that approximately 20% of US residents are not signing up for home broadband services.⁹ In fact, the bulk of offline households generally cite either unaffordability or lack of interest in a subscription as the driving factor behind their non-adoption, not lack of infrastructure.

While closing all deployment gaps with high-quality technology is the obvious and necessary first step toward closing the digital divide, survey results like these suggest that digital adoption and literacy outreach programs can make a difference—often more of a difference—including by making households aware of private and public assistance programs (e.g., Lifeline, Internet Essentials) and how to apply. Help like this can often be found at anchor institutions like libraries that offer free digital assistance—and that are also lower in the BEAD funding hierarchy and often critically understaffed. Libraries and similar institutions also provide an invaluable resource for those who are unhoused, have housing that is in some way ineligible for a connection (if, for example, their building has been unofficially split into apartments) or otherwise are simply unable to get a connection to their home—indeed, enough so that a small but enduring percentage of respondents to NTIA’s Internet Use Survey cite the availability of Internet elsewhere as the reason they don’t have a subscription at home.¹⁰ This is why whole-of-

⁸ *Id.* at 39.

⁹ See, e.g., Risa Gelles-Watnick, “Americans’ Use of Mobile Technology and Home Broadband,” Pew Research Center (Jan. 31, 2024) (based on May to Sept. 2023 survey data), <https://www.pewresearch.org/internet/2024/01/31/americans-use-of-mobile-technology-and-home-broadband/#:~:text=Polls%20from%202000%20to%202021,household%20income%20and%20education%20attainment>; see also Michelle Cao and Rafi Goldberg, NTIA, “Switched Off: Why Are One in Five U.S. Households Not Online?”, Office of Policy Analysis and Development (Oct. 5, 2022) (reporting on NTIA’s internet use survey data), <https://www.ntia.gov/blog/2022/switched-why-are-one-five-us-households-not-online>.

¹⁰ NTIA Data Explorer: Internet Use Survey, “Non-Use of the Internet at Home,” National Telecommunications and Information Administration (updated June 2024), <https://www.ntia.gov/data/explorer#sel=homeEverOnline&disp=map>.

place approaches that create shared spaces for connectivity in addition to providing broadband at home are so critical.

Survey results that highlight lack of interest, privacy or security concerns, and similar hesitations to getting a subscription also point to the need for digital literacy training and inclusion activities that go further than simply addressing the cost of a broadband subscription.¹¹ Indeed, a Boston Consulting Group survey commissioned by Comcast several years ago, which explored barriers to enrollment in even free or low-cost broadband plans, found that a significant number of low-income households would be more likely to sign up if they had someone able to walk them through the process of applying and provide personalized assistance.¹²

These types of digital navigation activities, digital literacy training, assistance with financial aid programs and other non-deployment activities are a viable use of BEAD funding after deployment is completed. In fact, because eligible entities were given the opportunity to include plans for non-deployment activities in their BEAD plans, and were additionally encouraged to complete their BEAD plans in concert with the DEA plans, many states and territories have already articulated relevant, personalized and detailed plans for implementing these kinds of activities to meet the particular needs of their populations.¹³

While none of this undercuts the need for a high-quality broadband connection, providing these other types of solutions is equally relevant to a fully digitally inclusive society, and BEAD funding, though massive, is finite. From a policy perspective, the question is now how to create an environment that best ensures those plans are funded while guaranteeing adequate broadband deployment everywhere possible.

In recognition of the difficult challenges, opportunity costs and trade-offs noted above, OTI suggests the following changes to NTIA's proposed alternative broadband technology guidance for states and other BEAD grantees:

¹¹ *Id.*

¹² Chris Goodchild et al., "Boosting Broadband Adoption and Remote K–12 Education in Low-Income Households," Boston Consulting Group (May 12, 2021), <https://www.bcg.com/publications/2021/accelerating-broadband-adoption-for-remote-education-low-income-households>.

¹³ See Jessica Dine, "BEAD Report: Grading States' Initial Proposals for Federal Broadband Funds," Information Technology and Innovation Foundation (May 13, 2024), <https://itif.org/publications/2024/05/13/bead-report-grading-states-initial-proposals-for-federal-broadband-funds/>.

First, OTI agrees that locations with no offer of Reliable Broadband Service below the EHCPLT, but which do have ready access to existing deployments of qualifying unlicensed fixed wireless (ULFW) broadband service, should be treated as “served.”¹⁴ Locations capable of receiving service from one or more alternative technologies should be exempt from BEAD funding for additional alternative technologies, as long as there is objective evidence demonstrating the available technologies can provide service meeting the required 100/20 Mbps speed and low latency requirements in all purportedly served locations (and that service will not, for example, regularly fail to meet those required metrics if subscribership in the area meets a certain saturation point). By removing these locations from unnecessary BEAD funding, states and territories will have more funding to apply to the truly unserved and underserved and even to meet the needs of community anchor institutions. Recognizing that locations with qualifying service from alternative technology providers are “served” would also be more consistent with a technology-neutral approach that focuses foremost on achieving universal access and, as possible, expanded digital equity and inclusion efforts.

Second, the Notice asks “should NTIA consider alternative LEO reimbursement models where LEO subgrantees may begin providing service and receive corresponding grant funds through LEO Capacity Subgrants before certifying the completion of network build out?”¹⁵ We believe the answer is an unqualified yes. As NTIA acknowledges in the Notice: “Reserving LEO capacity is likely to result in substantial additional expenses for LEO providers. This problem is especially acute with LEO providers who could otherwise sell reserved capacity.”¹⁶

NTIA should reconsider its proposal that states should only reimburse LEO satellite broadband subgrantees based on the number of households in the funded service area that *actually subscribe* to service during an extended deployment period. A restriction that compensates ISP subgrantees (winning bidders) utilizing LEO satellite technologies based only on actual subscribers would deter LEO providers from participating and setting aside adequate capacity. It would also contradict decades of precedent, which is to compensate broadband service providers for network capacity deployment costs, not for the unknowable share of that capacity based on future subscriptions. Historically, other federal broadband infrastructure programs—including the Rural Digital Opportunity Fund, the Connect America Fund, and the ReConnect program—have not allocated funding based on subscriptions. It does not seem necessary to upend this precedent and treat LEO satellite providers differently under the BEAD

¹⁴ Notice at 8.

¹⁵ *Id.* at 18.

¹⁶ *Id.*

program, particularly when LEO satellites will almost certainly be the “providers of last resort” and should be incentivized to participate and expand capacity for the purpose.

OTI recommends that NTIA instead ensure that all subgrantees, irrespective of the technology used to provide service, are treated fairly and provided an adequate incentive to build out capacity for unserved and underserved areas. LEO providers should recover costs, or some percentage of costs, for locations where they can connect a customer within 10 business days of a request for service. Limiting reimbursement to a share of reserved capacity based on the number of future subscribers would unnecessarily place additional limits on funding for LEO satellite broadband providers that other program participants will not experience. Alternatively, we suggest that NTIA’s guidance recommend, or at least allow, that states and territories make upfront payments based on the cost of maintaining capacity sufficient to extend service to all unserved and underserved households in the subgrantee’s service area. This will fully fund the necessary deployment while disentangling deployment from adoption, two discrete facets of the digital divide that demand very different policy approaches.

At a minimum, and consistent with current BEAD guidelines and the IJIA’s emphasis on empowering states and territories to design the programs in the way that works best for them, NTIA should defer to eligible entities concerning how best to compensate LEO satellite broadband providers for network capacity. Eligible entities should be allowed to compensate LEO providers based on the costs associated with expanding and reserving a sufficient amount of capacity to serve new subscribers in the funded areas. For example, NTIA could suggest use of a hybrid formula that both spurs the addition of capacity by LEO providers and also creates an incentive of backend payments to the extent they successfully meet the capacity requirements for new BSL subscribers over time.

Finally, the Notice states that “[t]o 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.”¹⁷ We believe a certification of sufficient reserved capacity to meet the actual average household usage (either in that state or household), along with a factor that adjusts for future growth (which has been running at nearly 10% per year) would be more reasonable. Guidance that would require LEO operators to reserve capacity at a level that is far more than double today’s average household data consumption, and which is then multiplied by all the serviceable locations in an area that could potentially request service, seems unnecessary and detrimental to overarching BEAD goals. Even if reserved LEO capacity is

¹⁷ *Id.* at 11 (footnote omitted).

compensated on the front end, reserving too much fallow capacity could put upward pressure on the price of LEO satellite services for all other customers, since it would create an artificial scarcity.

Whether reserved capacity is compensated upfront or another way, it seems that a more graduated path to setting aside 2 TB of data would strike a better balance. OpenVault’s data on usage trends reports average U.S. home broadband data consumption of 641 GB last year.¹⁸ It projects average data consumption could reach 700 GB this year and 1 TB by the end of 2028.¹⁹ While this means data consumption could reach 2 TB eventually—something that will depend on whether new, very high-capacity apps like virtual reality become commonplace—we recommend that the LEO providers’ mandatory certification of ability to meet demand begin at closer to 1 TB and adjust upward over time. In addition, just as the draft Guidance itself proposes that eligible entities can assume a 50% take rate on adoption using a LEO provider,²⁰ the Guidance should advise states to base the requirement for reserved capacity on a realistic take rate that will rise over time.

In conclusion, OTI commends NTIA’s effort to craft Guidance that will help states and territories anticipate the inevitable need to fill coverage gaps in extremely high cost locations with alternative technologies, namely unlicensed fixed wireless and LEO satellite broadband service. We strongly agree that all providers must meet the minimum technical requirements for high-capacity broadband. At the same time, we offer the observations and suggestions above in the hope that NTIA will find a balance that delivers this broadband service to unserved locations as rapidly as feasible, and in a cost-effective manner that allows BEAD funding to serve as many underserved and community anchor locations as possible. We also urge NTIA to offer Guidance that encourages states and territories to devote any remaining funds to digital adoption efforts, which will be necessary to move beyond access to achieve digital equity.

/s/ Michael Calabrese

/s/ Jessica Dine

New America’s Open Technology Institute
740 15th Street, NW Suite 900
Washington, DC 20005

¹⁸ Jeff Baumgartner, “Average broadband usage on pace to surpass 1TB by 2029 – OpenVault,” *Light Reading* (Feb. 8, 2024), <https://www.lightreading.com/broadband/average-broadband-usage-on-pace-to-surpass-1tb-by-2029-openvault>.

¹⁹ *Id.*

²⁰ “An acceptable estimate would be 50 percent of the covered locations within a project area subscribing . . . from the date upon which service is available and continuing through the conclusion of the period of performance.” Notice at 15.