

NTIA Draft Alternative Broadband Technology Guidance (Draft Guidance):
Space Exploration Technologies Corp. (SpaceX) Comments

The Broadband Equity, Access, and Deployment (BEAD) program was enacted into federal law in 2021 as an initiative meant, in part, to close the digital divide in the United States. To implement BEAD, the National Telecommunications and Information Administration (NTIA) opted to prioritize fiber-optic technology as its primary and preferred solution. Then NTIA created a hierarchy of other technologies that might address the Nation's pressing need to rapidly deliver broadband to the unserved and underserved. Low-Earth Orbit (LEO) satellite broadband solutions are relegated to the bottom tier of this hierarchy, to be considered only where virtually all other technologies are unavailable or prohibitively expensive. This relegation of LEO was not required by Congress and is wrong. SpaceX's Starlink already provides direct-to-consumer broadband service to millions of Americans today and is uniquely situated to address many of the connectivity challenges that gave rise to BEAD.

Given the focus on fiber solutions, NTIA assumed fiber business models as the baseline for most aspects of the BEAD program. By doing so, the agency established a framework in the Notice of Funding Opportunity (NOFO) that is unworkable for next-generation satellite providers. Overall, the assumptions about the last resort use of next-generation satellite systems in the NOFO conflict with long-established analysis conducted by the Federal Communications Commission (FCC), which suggests that deploying fiber to 100% of U.S. households will take upwards of \$80 billion (based on 2017 costs) — nearly twice the roughly \$42.5 billion in funding appropriated in 2021 for the BEAD program.¹ Fortunately, next-generation satellite systems like Starlink can deliver high-speed, low-latency broadband service to areas that are unreachable or cost-prohibitive for ground-based fiber and other technologies.

To be clear, next-generation satellite systems must make investments to meet BEAD requirements. Most fundamentally, the BEAD program is asking LEO providers to deploy new satellite capacity and to control and that capacity towards BEAD users *to the exclusion of other would-be users and under a fundamentally different technical and business model than employed by LEO broadband operators today*. These requirements, along with a myriad of compliance obligations fundamentally designed for fiber, create substantial burdens and economic challenges for LEO participation in BEAD.

Like terrestrial systems, Starlink allocates its capacity to areas that are most economical. Importantly, this market-based allocation of capacity retains network flexibility and is not hampered by the significant administrative burdens associated with the BEAD program.² And just like terrestrial systems, SpaceX would deploy capacity to areas and under terms that would not be justified by economic factors alone under BEAD. Specifically, SpaceX would commit to allocating the capacity necessary to serve BEAD customers under tightly prescribed conditions that significantly differ from the Starlink market product, including an NTIA prescribed service-level-agreement (SLA), guaranteed

¹ See *Improving the Nation's Digital Infrastructure*, FCC Office of Strategic Planning and Policy Analysis (2017), available at <https://docs.fcc.gov/public/attachments/DOC-343135A1.pdf>.

² Beyond administrative burdens, a Starlink BEAD user would require an increased capacity allocation compared to a non-BEAD user to ensure service levels meet BEAD performance requirements. As a result, 1 BEAD user would preclude Starlink from serving more than 1 non-BEAD user from a capacity perspective.

service availability for 10 years, 10-day time-to-service commitments, and pricing controls that would result in significantly below-market prices for Starlink.³

Hence, just as NTIA does for terrestrial providers, if NTIA wishes to obligate a LEO provider to achieve these goals in the most challenging and costly locations, the program needs to close the economic case for LEO providers to make the necessary investments to do so. Imposing service and availability obligations on LEO providers that are identical to those for all other technologies, while simultaneously reducing the associated reimbursement mechanism, makes the program untenable.

To enable possible LEO broadband participation in the BEAD program, NTIA must make significant changes to the Draft Guidance. While the Draft Guidance proposes certain fixes,⁴ these baseline clarifications only make it legally possible for LEO providers to participate. Significant further changes are necessary to make such participation practically and economically feasible. To that end, NTIA must consider addressing each item below in clear, publicly released guidance to ensure consistency across states and certainty over time.⁵

Specifically, to enable the possibility of LEO participation in the BEAD program, the following framework must apply:

1. LEO providers *must* be appropriately reimbursed for the costs associated with the locations they are obligated to serve, including reimbursement for both actual and prospective subscriber obligations;
2. Reimbursement amounts *must* be fixed for the duration of the program and NTIA must approve reasonable estimates of actual costs for the life of the award, prior to subgrant issuance;
3. NTIA *must* make clear that the employee- and contractor-related NOFO provisions do not apply to a LEO workforce that conducts non-BEAD activities;
4. NTIA *must* streamline the financial capability review process by conducting a one-time, nationwide review for LEO providers;
5. The Draft Guidance's "Case 2" analysis *must* be modified to avoid confusion and significant delays;
6. States *must* be permitted and encouraged to prioritize time-to-service as a key award factor for the evaluation of alternative technology projects; and
7. NTIA *must* automatically include this framework as an additional option for states in all approved or pending Initial Proposal Volume IIs.

Each element of the framework is described in detail below.

³ This comparison does not even factor in the compliance and resource burden associated with SpaceX's potential participation in 50+ state-run grant programs, a structure that markedly compounds key challenges in the program.

⁴ The Draft Guidance's clarification of satellite capacity as an eligible expense, explanation that a LEO project is "a broadband infrastructure project," recognition of the unique aspects of supporting documentation for LEO projects, and confirmation that no federal interest attaches to satellite capacity or the underlying network.

⁵ Such clear, NTIA-issued guidance is necessary given the fundamentally different business model and deployment activities of LEO compared to terrestrial wireline or wireless technologies and the significantly greater number of states a LEO provider may participate. Thus, without this guidance, LEO providers would be subject to 50+ state interpretations of BEAD program rules, with significantly impactful effects that would create an unacceptable level of uncertainty and risk for LEO providers over the 10+ year life of the program.

1. LEO providers must be appropriately reimbursed for the costs associated with the locations they are obligated to serve, including reimbursement for both actual and prospective subscriber obligations.

Under the Draft Guidance and current program rules, a LEO provider, like all other technologies, must make the network investments to ensure the availability of BEAD-compliant service to every awarded location for the duration of the program, regardless of whether and when a subscriber at a covered location requests service. LEO providers would be required to build out a network to the same specifications as all other technologies, with the same availability obligations and other commercial and technical requirements. Yet, instead of reimbursing next-generation satellite costs on a per-location basis based on the size of the availability obligation, as the program does for every other technology, the Draft Guidance seeks to only reimburse LEO costs related to actual subscribers.

In this model, every technology, except LEO, is provided with the surety that their network deployments will be reimbursed, regardless of unpredictable and uncontrollable individual behavior of subscribers and the availability of federal funds. LEO providers, on the other hand, would be required to assume all risk of reimbursement based on the percentage of awarded locations ultimately subscribing to the service. This allocation of risk is discriminatory and runs contrary to Congressional direction in Section 60102(g)(2)(C) of the Infrastructure Act, which requires that BEAD funds be distributed in an equitable and nondiscriminatory manner. NTIA cannot change one side of the equation, the right to be reimbursed, without also changing the opposing side, the obligation to make BEAD-compliant service available.

Additionally, the Draft Guidance proposes to enable states to reserve only the funds necessary to provide service to 50% of the locations that the state is counting as “served” by LEO. If LEO providers are to be held to the same BEAD requirements as all other technologies, Congress required BEAD funds to be reimbursed in a fair and equitable manner. States must be required to reserve all funds necessary to serve a location if the state is to claim that a location is “covered” by a BEAD obligation. The Draft Guidance would either obligate LEO providers to allocate capacity without reimbursement or just leave these people behind without connectivity. Neither option is tenable—states must have the funds available for LEO broadband projects, in the same manner as all other technologies.

2. Reimbursement amounts must be fixed for the duration of the program and NTIA must approve reasonable estimates of actual costs for the life of the award, prior to subgrant issuance.

The Draft Guidance takes an important step in clarifying that LEO projects qualify as a fixed amount subgrant as set out in the Uniform Guidance Policy Notice. NTIA issued the Uniform Guidance Policy Notice after strong opposition from the industry to an uncertain, pure reimbursement grant framework. Just as NTIA recognized that all other technologies require the certainty provided by fixed amount sub awards, so too do LEO broadband providers. However, the Draft Notice appears to curtail the state’s discretion in limiting reimbursement to a future review of a LEO provider’s actual

costs, effectively reversing the primary purpose of a fixed amount subgrant: the fixed amount of the award.⁶

A LEO provider's cost structure, particularly as it relates to providing service to a single home or set of homes, is complex given the unique (in the context of BEAD) task of allocating costs of infrastructure that is inherently global to specific locations on the surface of the earth. Such a future cost review for LEO and potential downward revision of award amounts based on actual expenditures would remove any certainty a LEO provider would have regarding the investments necessary to achieve BEAD program goals, making program participation effectively impossible.

Additionally, a state-by-state review of LEO costs is not workable or advisable given the lack of variability in LEO costs across states. Yet, the current framework would have a LEO provider work with 50+ individual state broadband offices to align on the determination of eligible costs and a reporting framework that is relevant for a LEO provider. Due to the global nature of a LEO satellite constellation, this approach could result in 50+ different cost allocation frameworks, a problem unique to LEO providers capable of participating in virtually all states. The array of potential cost allocations would be both administratively burdensome to maintain and could result in a sum of eligible expenditures and other financial metrics in individual states that are unlikely to add up, creating complexity in cost certification.

Therefore, NTIA must conduct a unified, nationwide, review of LEO costs and permit states to rely on this determination as a reasonable estimate of actual costs for the purpose of fixed amount subawards. The final guidance must also make clear that, following such NTIA review, the initial materials underlying this review are sufficient for all future purposes related to costs, including but not limited to future cost audits.⁷ Like all other technologies, LEO providers and the states must be permitted to enter into a fixed amount subaward based on a reasonable estimate of actual costs, and then judge the provider's success or failure based on the goals of the program (i.e. connectivity), rather than a 50+-state post-hoc examination of costs.

3. NTIA *must* make clear that the employee- and contractor-related NOFO provisions do not apply to a LEO workforce that conducts non-BEAD activities.

A terrestrial internet provider will conduct discrete, geographically correlated deployment activities pursuant to a BEAD award. Given these activities are distinct, and clearly tied to a location or set of locations, terrestrial providers can readily identify which workforce supports those activities and are therefore subject to the NOFO's workforce-related requirements and a state's employment laws.⁸ A LEO provider, on the other hand, will provide internet service to locations under BEAD, utilizing capacity from a global satellite constellation of constantly orbiting satellites. There is no "BEAD"

⁶ Compare Draft Guidance ("LEO Capacity Subgrants *must* structure the fixed amount subgrant as a maximum payment amount that is based on a reasonable estimate of actual cost and that limits reimbursements to actual costs after review of evidence of costs.") (emphasis added) with Uniform Guidance Policy Notice at 6 ("NTIA clarifies that Eligible Entities *may* elect to treat subawards as fixed amount subawards *even if* the Eligible Entity requires subrecipients to submit evidence of costs.") (emphasis added).

⁷ Said otherwise, the guidance must be clear that any future audits of costs only relate to the reasonableness of the estimate of actual costs at the time they were made (the agreed-upon costs at the time of subgrant issuance), not the actual costs incurred throughout the life of the program.

⁸ See NOFO at (IV)(C)(1)(e), (f).

workforce for LEO. The underlying work to deploy the network is not specific to BEAD and all work would naturally serve both BEAD and, more so, non-BEAD locations.⁹

As a result, LEO providers do not have any separation between BEAD-supporting activities and all other business activities for satellites, ground network, or user equipment manufacturing. In fact, a LEO provider's entire workforce, whether employee or contractor, does some amount of work that contributes to BEAD activities, which potentially expands BEAD compliance obligations by many orders of magnitude beyond NTIA's intent.

Many states have developed their BEAD programs to include virtually all workforce-related requirements suggested by NTIA, as well as additional state-specific requirements. These requirements, often handled by the state through broad "yes/no" certifications without the opportunity to apply context or nuance, impose significant ongoing compliance obligations on participating providers. A company might balance these obligations when applied to a discrete portion of its workforce being funded by BEAD against other benefits of BEAD participation. However, if these requirements were to apply to a company's entire workforce, as the current situation risks for LEO providers, these compliance burdens would far outweigh any benefit the company might receive from the program and lead a rational business to forgo any participation in the program.

To clarify the true extent of these provisions, NTIA must issue clear guidance that the workforce-related provisions of Sections (IV)(C)(1)(e) and (f) are not applicable to LEO providers. NTIA could do so by clarifying that these requirements are only applicable to a participating ISP's workforce that exclusively supports a BEAD project, *and* that satellite capacity is an asset with no relevant supporting workforce for purposes of these provisions of the NOFO.¹⁰ This clarity is critical to prevent alternative interpretations at the state level or federal level in the future.

4. NTIA *must* streamline the financial capability review process by conducting a one-time, nationwide review for LEO providers.

As noted, LEO providers are capable of participating in virtually every state and territory, and thus face the highest burdens related to repeated state-specific processes, like the evaluation of financial capability. Moreover, it is not clear how state program administrators should or would evaluate the financial capability of a proposed BEAD project based on a reasonable cost allocation and a provider's participation in dozens of state programs. NTIA, on the other hand, possesses greater expertise in this area and can bring consistency of financial reviews in each state, while also alleviating the burdens of state-specific process that arises at the scale of a LEO provider. A single NTIA review would also ensure that the program is adequately protected by a review of a LEO provider's reasonable estimate of costs and financial capability informed by relevant subject matter expertise.

⁹ A state BEAD award based on LEO would reimburse a comparatively small portion of these overall efforts based on the capacity requirement generated by the number of locations each state seeks to serve with LEO.

¹⁰ We note that the Draft Guidance requests that subsidization of end user premises equipment be included in LEO project. SpaceX employs a significant workforce to produce this equipment, the vast majority of which will go towards non-BEAD deployments globally. Therefore, a clarification that exclusively relates to satellite capacity does not fully resolve this issue.

5. The Draft Guidance’s “Case 2” analysis *must* be modified to avoid confusion and significant delays

NTIA must clarify the Draft Guidance’s two-step process related to existing alternative technology services or obligations should not be solely based on the speeds experienced by existing subscribers. As NTIA is aware, LEO speeds reflect the amount of capacity available to serve *existing* subscribers. The efficient operation of a LEO network requires the expenditure and management of resources for existing customers. Thus, a LEO operator is not currently reserving a finite resource like network capacity for locations without subscribers because doing so would negatively affect its service to its existing customer base. Therefore, even if a LEO provider met BEAD speed requirements for current subscribers, it is unreasonable to assume that any LEO provider would reserve network capacity for unawarded contractual obligations. With BEAD funding, LEO providers would deploy and allocate additional capacity for BEAD subscribers.

Additionally, the Draft Guidance’s proposal to require each alternative technology provider to respond within seven days of a state’s “Case 2” investigation is unduly burdensome on current nationwide services like Starlink. These services would face significant challenges engaging in what amounts to yet another challenge process in 50+ jurisdictions, with tight 7-day, followed by 30-day timelines to evaluate the state-specific situation and respond.¹¹

As the Draft Guidance notes, companies that can serve locations have an interest in protecting those locations from subsidized competition and thus would respond without an obligation to do so. A mandatory response would simply burden states and providers with submissions of negative responses to the Case 2 inquiry and create confusion when those same providers respond affirmatively to Case 3. Therefore, NTIA should not require providers to respond to the “Case 2” process to maintain eligibility for “Case 3.”

6. States *must* be permitted and encouraged to prioritize time-to-service as a key award factor for the evaluation of alternative technology projects.

The primary purpose of the BEAD program should be to connect as many Americans as possible, as quickly as possible. No American should be forced to wait for connectivity unnecessarily. Hence, during the evaluation of alternative technology projects, greater weighting must be attached to how quickly unserved households can benefit from the program. To ensure individuals can be connected as quickly as possible, NTIA should permit states to prioritize awards based on the provider’s deployment timeline as the principal scoring factor when comparing alternative technologies. Failure to implement this change would, at a minimum, result in individuals relying on BEAD waiting years longer to receive service than is necessary.

7. NTIA *must* automatically include this framework as an additional option for states in all approved or pending Initial Proposal Volume IIs.

The BEAD program is well underway, and states have designed their programs based on NTIA’s existing rules and guidance, which does not specifically contemplate LEO systems and their unique deployments. Given that multiple states have already begun their subgrantee selection processes, it

¹¹ There also exists logistical challenges with a state’s ability to successfully make contact with alternative technology providers, particularly on the timelines proposed.

is not feasible at this late stage to require that states revise their Initial Proposal Volume IIs, or otherwise seek individualized approval for program modifications created by the final guidance. NTIA must authorize each state to proceed under the final alternative technology guidance as an additive option to the procedures outlined in a state's Initial Proposal Volume II.