

**Before the
National Telecommunications Information Administration
Department of Commerce
Washington D.C.**

In the Matter of)
Proposed BEAD Alternative Broadband)
Technology Guidance)

**COMMENTS ON NOTICE OF PROPOSED GUIDANCE
BY ADVOCATES FOR THE EMS DISABLED**

September 10, 2024

The parties listed below collectively constitute the “Advocates for the EMS Disabled,” have granted permission to submit these Comments on their behalf, and join together to submit these Comments:

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Hampshire for Safe Technology, Deb Hodgdon (Stratham, NH); Sustainability Management Consulting, Angela Casler, Owner, **EMS Injured**, (Chico, CA); Jan Kiefer (Scottsdale, PA); Constance C. McKnight, Bachelors and Masters in Architecture (Oakland, CA); and Virginia Farver (Fort Collins, CO).

Executive Summary

We oppose adoption or implementation of the proposed BEAD guidance (the “Guidance”)¹ that would allow unlicensed fixed wireless and LEO satellite providers to receive BEAD funding for the following reasons:

Huge waste of taxpayer funding

1. **Disposable infrastructure.** BEAD has been sold as a “generational” investment to bridge the digital divide once and for all. Fiber infrastructure has a lifespan of at least 50 years – perhaps longer – qualifying as a generational investment. Existing BEAD rules rightfully favor fiber deployment. Wireless infrastructure however, including satellites, has a lifespan of only five years. The hundreds of thousands of satellites proposed to be launched over the coming years will eventually all fall back to earth. In fact, they are required under FCC rules to fall back to earth so as not to clutter up space with decommissioned satellites.² Google tried a similarly quixotic project to float balloons over underserved countries to provide Internet service. The project was shut down after “failing to find a sustainable business model.”³ BEAD funding is not intended for short-lived, disposable infrastructure with a lifespan of only a few years.
2. **Operating expenses cloaked as “deployment.”** BEAD funding is intended to fund capital expenditures (capex) to build networks.⁴ Capital expenditure in this context is a one-time upfront expense to deploy infrastructure. The rationale for BEAD is that service providers are not investing in such capex because it would take too many years to recoup the investment. However, this guidance encourages the use of BEAD (capex) grants to pay for *operating expenses* (i.e. the monthly subscription cost) of satellite capacity. Section 4.4 of the Guidance discusses NTIA approval of “BEAD funds for the reservation of capacity on LEO networks” – reserving capacity on an already existing network. To emphasize this point: the satellite networks are **already built** and BEAD funding would be used to pay their operating costs. This is not capex. This is operating expense. There are already a number of programs that pay for individual subscribers’ broadband operating expenses on a means-tested basis, such as the Universal Service Fund, Affordable Connectivity Program (pending funding), and others.⁵ Paying operating expenses for disposable infrastructure that has a five-year lifespan is a never-ending treadmill of taxpayer funding. The cost per gigabyte over fiber will continue to decrease while those stuck with poor quality satellite service will continue to need subsidies to pay a higher cost for lower quality service. The point of BEAD is to invest in capital expenditure with future proof infrastructure, which is faster for users, more reliable, and cheaper for taxpayers. NTIA should not use BEAD funding for operating expenses or reservation of capacity on satellite networks.

Discriminatory against the EMS disabled

¹ <https://www.ntia.gov/other-publication/2024/proposed-bead-alternative-broadband-technology-guidance>

² FCC Adopts New '5-Year Rule' for Deorbiting Satellites, FCC-22-74, 9/29/22
<https://www.fcc.gov/document/fcc-adopts-new-5-year-rule-deorbiting-satellites-0>

³Alphabet shuts down Loon internet balloon company
<https://techcrunch.com/2021/01/21/google-alphabet-is-shutting-down-loon-internet/>

⁴ Infrastructure Investment and Jobs Act, §60102(f)(1)

⁵ Red Light Report by Sen. Ted Cruz, Ranking Number, Senate Commerce Committee
<https://www.commerce.senate.gov/services/files/0B6D8C56-7DFD-440F-8BCC-F448579964A3>

3. A growing number of Americans suffer from electromagnetic sensitivity (EMS); they are unable to tolerate exposure to electromagnetic radiation, including radiofrequency emissions from cell towers, terrestrial Wi-Fi networks, unlicensed wireless networks, and satellite networks. A peer-reviewed study from nearly 6 years ago, found that the prevalence of EMS was up to 30% of the population, with up to 1.5% being severe cases.⁶ With levels of ambient radiation increasing dramatically in more densely populated areas, EMS disabled individuals are often forced to flee urban, suburban, and other populated areas to avoid these higher density electromagnetic radiation environments. Heavy-handed FCC preemption orders over the past five years have exacerbated the issue, intimidating local governments into the proliferation of cell towers in close proximity to residences across the country.
4. In order to survive, these EMS refugees are often forced to up-end their lives and flee to sparsely populated, difficult-to-reach areas to find lower electromagnetic radiation levels. These are the last remaining safe spots for millions of Americans.
5. The draft proposed BEAD guidance would increase ambient levels of environmental radiation in some of these remote areas, the last refuges for EMS disabled persons. The draft guidance makes no provision nor any consideration for their plight, the environmental injustice suffered by this vulnerable population, nor the economic damages inflicted upon them. In addition, the Guidance does not consider the disproportionate impacts of satellite and terrestrial based wireless facilities on vulnerable populations, such as women, children, people of color, people with lower incomes, and persons with disability. Those with lower incomes are often least able to flee their homes. See attached prior administrative filings for more information about the EMS disabled.
6. The Infrastructure Investment and Jobs Act (IIJA), which created the BEAD program, also states that “the Attorney General shall ensure that Federal policies promote equal access to robust broadband internet access service by prohibiting deployment discrimination.”⁷ This Guidance discriminates against the EMS disabled.

Destructive to human health and the environment

7. As mentioned above, the LEO satellites upon which the Guidance proposes to rely, have only a 5-year lifespan. Subsequently, the satellites are directed to crash into the earth, burning up upon reentry in the atmosphere and breaking into small dust particles, spreading toxic metals across the planet.⁸ Mining these metals, many of which are rare earth metals for electronics, batteries, and solar panels, often occurs in unbearable conditions, under autocratic governments, and performed by child labor.⁹ In addition, getting the satellites into space requires burning large amounts of poisonous rocket fuel, which is now present in human food.¹⁰

⁶ Journal of Environment and Health Science <https://doi.org/10.15436/2378-6841.19.2402>
The Prevalence of People with Restricted Access to Work in Man-Made Electromagnetic Environments

⁷ Infrastructure Investment and Jobs Act § 60506(c)
<https://www.congress.gov/117/plaws/publ58/PLAW-117publ58.pdf>

⁸ There is a risk that satellites do not disintegrate upon reentry and instead crash in whole pieces into the earth – potentially causing great harm if in a populated area. For satellites licensed by the US government, US taxpayers bear the liability arising from such impacts. See attached fact sheet, footnote 23.

<https://ehtrust.org/wp-content/uploads/Satellite-federal-bills-EHT-factsheet-11-1-23.pdf>

⁹ How 'modern-day slavery' in the Congo powers the rechargeable battery economy. NPR Fresh Air, February 1, 2023

<https://www.npr.org/sections/goatsandsoda/2023/02/01/1152893248/red-cobalt-congo-drc-mining-siddharth-kara>

Mapping the Impact and Conflicts of Rare-Earth Elements, Institute for Policy Studies, November 28, 2023

<https://ips-dc.org/mapping-the-impact-and-conflicts-of-rare-earth-elements/>

¹⁰ “The New Space Race Is Causing New Pollution Problems” the New York Times, January 9, 2024

<https://www.nytimes.com/2024/01/09/science/rocket-pollution-spacex-satellites.html>

Chemical used in rocket fuel is widespread in food, Consumer Reports finds, CBS News August 7, 2024

<https://www.cbsnews.com/news/consumer-reports-chemical-rocket-fuel-perchlorate/>

8. NTIA should treat the proposed guidance as a major federal action under the National Environmental Policy Act (NEPA) and prepare an environmental impact statement (EIS). The EIS should take into account, without limitation, (a) the radiofrequency impacts from satellites and the accompanying terrestrial infrastructure that is reasonably likely to result from this guidance, (b) other environmental impacts from satellites, many of which are described in this document, including for example impacts from rocket fuel during launches and the dispersion of toxic metals across the planet. A recent industry report estimated that this guidance could result in \$316 million of BEAD funding going to satellite and wireless deployments.¹¹ The draft guidance helps enable satellite and/or terrestrial deployment across millions of acres of land in the United States.¹² In addition, the 10-year time horizon for satellite infrastructure contemplated in the draft guidance, means that at least 2 generations of satellites will be launched and then burned up over the atmosphere, because each satellite only has a lifespan of 5 years.¹³
9. A robust literature documents the impacts on human health and the environment from radiofrequency radiation. Please see comments previously submitted to NTIA by Environmental Health Trust, which are incorporated herein by reference.¹⁴

The documents set forth in the following links are incorporated herein by reference:

- Comments of Advocates of the EMS Disabled, In the Matter of: Request for Comments on the Design and Implementation of \$2.75 Billion of the Digital Equity Act of 2021 Program submitted on May 1, 2023 at <https://thenationalcall.org/wp-content/uploads/2023/09/NTIA-2023-0002-5-1-23-FINAL.pdf> (also attached)
- Environmental Health Trust, Fact Sheet: Satellite Proliferation: Hundreds of Thousands of US Launches With No Environmental Review at <https://ehtrust.org/wp-content/uploads/Satellite-federal-bills-EHT-factsheet-11-1-23.pdf> (also attached)

Respectfully submitted
on behalf of the EMS Disabled,

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¹¹ Satellite broadband joins the party for BEAD: What you need to know. 8/27/24

<https://www.fierce-network.com/broadband/satellite-broadband-joins-party-bead-what-you-need-know>

¹² The proposed guidance meets the definition of an MFA under [40 CFR 1508.1\(w\)](#) for multiple reasons, including without limitation, under subparagraph (1)(ii), by issuing an interpretation of policy, (1)(iv) as part of a concerted action that would implement satellite service, and (1)(vi) by "providing more than a minimal amount of financial assistance.. [for which NTIA] has authority to impose conditions on the receipt of the financial assistance to address environmental effects."

¹³ <https://www.space.com/spacex-starlink-satellites.html>

¹⁴ Comments submitted January 2, 2024 to NTIA, Office of Spectrum Management
<https://www.ntia.gov/sites/default/files/environmental-health-trust-written-input.pdf>