

Broadband Stakeholders Identified Various Challenges Affecting Broadband Deployment

FINAL REPORT NO. OIG-25-014-I

MARCH 20, 2025



U.S. Department of Commerce
Office of Inspector General
Office of Audit and Evaluation



March 20, 2025

MEMORANDUM FOR: Karin O'Leary
Deputy Assistant Secretary for Operations and Administration,
performing the non-exclusive functions and duties of the Assistant
Secretary for Communications and Information, and NTIA
Administrator
National Telecommunications and Information Administration

A handwritten signature in cursive script, reading "Analee Striner-Brown".

FROM: Analee Striner-Brown
Acting Assistant Inspector General for Audit and Evaluation

SUBJECT: *Broadband Stakeholders Identified Various Challenges Affecting
Broadband Deployment*
Report No. OIG-25-014-I

Attached is the final report on our evaluation of the deployment challenges identified by broadband stakeholders. We will post the report on [our website](#) per the Inspector General Act of 1978, as amended (5 U.S.C. §§ 404, 420).

We appreciate your staff's cooperation and professionalism during this evaluation. If you have any questions or concerns about the report, please contact me at (202) 893-8759 or Ms. Rosheek Williamson, Director for Broadband Oversight, at (202) 578-3621.

Attachment

cc: Douglas Kinkoph, Associate Administrator, Office of Internet Connectivity and Growth,
NTIA





Report in Brief

March 20, 2025

Background

The National Telecommunications and Information Administration (NTIA) has listed expanding affordable, high-quality broadband to every American as an objective in its 2022–2026 Strategic Plan. However, the combination of standing up new broadband programs and increasing access to broadband is an ongoing, nationwide challenge.

NTIA is responsible for administering \$48.2 billion provided by the Infrastructure Investment and Jobs Act (IIJA) for four different broadband programs, namely the Broadband Equity, Access, and Deployment program, the Middle Mile Broadband Infrastructure Grant program, the Digital Equity Act program, and the Tribal Broadband Connectivity Program. Each has different programmatic requirements, but they all aim to expand broadband infrastructure and promote broadband adoption and use.

Why We Did This Evaluation

The evaluation objective was to identify potential challenges for deploying broadband to underserved and unserved communities. We interviewed NTIA and state and territory broadband office representatives, surveyed broadband offices, and sent questionnaires to industry stakeholder associations.

NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

Broadband Stakeholders Identified Various Challenges Affecting Broadband Deployment

OIG-25-014-I

WHAT WE FOUND

We asked broadband officials and industry stakeholders to identify challenges they face with deploying broadband to underserved and unserved locations. In response, broadband officials and industry stakeholders identified challenges with the following: (1) statutory requirements, (2) Notice of Funding Opportunity provisions, (3) supply chain and labor market shortages, and (4) NTIA's communication process.

Our report describes these challenges and does not make recommendations.

SUMMARY OF IDENTIFIED CHALLENGES

The challenges identified by broadband officials and industry stakeholders could impact their ability to successfully deploy broadband as required by IIJA.

Challenge 1: Statutory Requirements Could Negatively Impact Deployment Efforts

Broadband stakeholders identified statutory timelines to deploy broadband and lengthy permit processes as concerns that could negatively impact the broadband programs' ability to deploy broadband services.

Challenge 2: BEAD NOFO Provisions Could Negatively Impact Deployment Efforts

Broadband stakeholders identified the aggressive timeline for subgrantee selections and technology requirements and exclusions as concerns that could negatively impact broadband deployment.

Challenge 3: Simultaneous, Nationwide Deployment Could Exacerbate Supply Chain and Labor Market

Broadband stakeholders expressed concerns about possible deployment delays due to supply chain disruptions, workforce shortages, and inadequate broadband office staffing.

Challenge 4: Broadband Officials Expressed Concerns with NTIA's Communication Process

Some broadband officials said NTIA's communication of crucial information pertaining to technical guidance and tools was untimely or inconsistent.

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Cover: Herbert C. Hoover Building main entrance at 14th Street Northwest in Washington, DC. Completed in 1932, the building is named after the former Secretary of Commerce and 31st President of the United States.

Introduction

The National Telecommunications and Information Administration (NTIA) in the Department of Commerce is the executive branch agency that is principally responsible for advising the President on telecommunications and information policy issues. NTIA's programs and policymaking focus largely on expanding broadband internet access and adoption in America, expanding the use of spectrum, and ensuring that the internet remains an engine for continued innovation and economic growth. These programs and policies are critical to America's competitiveness in the modern global economy and to addressing many of the nation's most pressing needs, such as improving education, health care, and public safety.

NTIA has listed expanding affordable, high-quality broadband to every American as an objective in its 2022–2026 Strategic Plan. However, the combination of standing up new broadband programs and increasing access to broadband is an ongoing, nationwide challenge.

NTIA is responsible for administering \$48.2 billion provided by the Infrastructure Investment and Jobs Act (IIJA) for four different broadband programs, namely the Broadband Equity, Access, and Deployment (BEAD) program, the Middle Mile Broadband Infrastructure Grant (MMG) program, the Digital Equity Act program, and the Tribal Broadband Connectivity Program (TBCP). Within NTIA, the Office of Internet Connectivity and Growth (OICG) manages implementation of these broadband grant programs. Each has different programmatic requirements, but they all aim to expand broadband infrastructure and promote broadband adoption and use. The largest is the BEAD program, for which NTIA received \$42.45 billion under IIJA to expand high-speed internet access in all 50 states, Washington DC, Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

NTIA issued a Notice of Funding Opportunity (NOFO) for each of the four broadband programs, describing the requirements under which it will award grants. Broadband grant awards are intended to expand broadband use in America; lay the groundwork for sustainable economic growth, better education, public safety, and health care; and advance other national priorities. However, state and territory broadband offices (collectively called "broadband offices" or "broadband officials" in this report) and industry stakeholders have identified several key challenges affecting broadband deployment. Additionally, the Government Accountability Office (GAO) issued reports identifying challenges that affect middle-mile network coverage and access and broadband deployment. Mitigating these challenges is vital to closing the digital divide and deploying broadband service to underserved and unserved communities.

Objective and Identified Challenges

Our objective for this evaluation was to identify potential challenges for deploying broadband to underserved and unserved communities. The Office of Inspector General (OIG) interviewed 13 judgmentally selected state and territory broadband office representatives, surveyed 56 broadband offices (43 responded), and sent questionnaires to the membership of eight broadband industry stakeholder associations that represented a range of broadband technologies, such as fiber, cable, digital subscriber line (DSL), wireless, and satellite (211 individuals responded). The challenges described in this report are derived from interviews and the survey and questionnaire responses. OIG received feedback on all four broadband programs, but we received the most feedback about the BEAD program. OIG previously issued a management alert on industry concerns, which we also address in this report.¹ Appendix A provides a more detailed description of our scope and methodology.

OIG asked broadband officials and industry stakeholders to identify challenges they face with deploying broadband to underserved and unserved locations. In response, broadband officials and industry stakeholders identified challenges with the following: (1) statutory requirements, (2) NOFO provisions, (3) supply chain and labor market shortages, and (4) NTIA's communication process. These challenges could impact the ability of both broadband officials and the broadband industry to successfully deploy broadband as required by IIJA. Possible effects include, for instance, straining workforce and staffing resources, increasing administrative expenses, discouraging technology providers from applying for grants, reducing competition and efficiency, encouraging wasteful spending to connect locations with existing broadband access, and increasing deployment costs.

NTIA officials acknowledged these challenges; however, these officials said they do not have the authority to change the statutory timelines in IIJA and are bound by the statute to establish programmatic timelines in the NOFO provisions within the discretion given to them. Additionally, NTIA officials said they have issued waivers for Build America, Buy America Act requirements that materials be made in the United States, to address supply chain concerns. Also, NTIA officials said they will continue to work with broadband officials on workforce development plans to address the BEAD workforce demand that is critical to meeting infrastructure buildout timelines under IIJA, and they will continue to provide broadband offices with technical assistance on methods to achieve milestones with the available resources to address staffing challenges. Lastly, NTIA officials said they are aware of the perception of untimely communications and inconsistent guidance as they develop the programs in real time. Officials said that NTIA moved quickly to meet the program requirements outlined in IIJA and it was not possible to have the guidance prepared the day they issued the BEAD NOFO.

The identified challenges could significantly delay broadband deployment and negatively affect IIJA's implementation, execution, and the achievements of its goals to close the digital divide in underserved and unserved communities.

¹ Commerce OIG, February 29, 2024. *Management Alert: Challenges Industry Stakeholders Face with Broadband Deployment*, Report No. OIG-24-015-M.

I. Challenge I: Statutory Requirements Could Negatively Impact Deployment Efforts

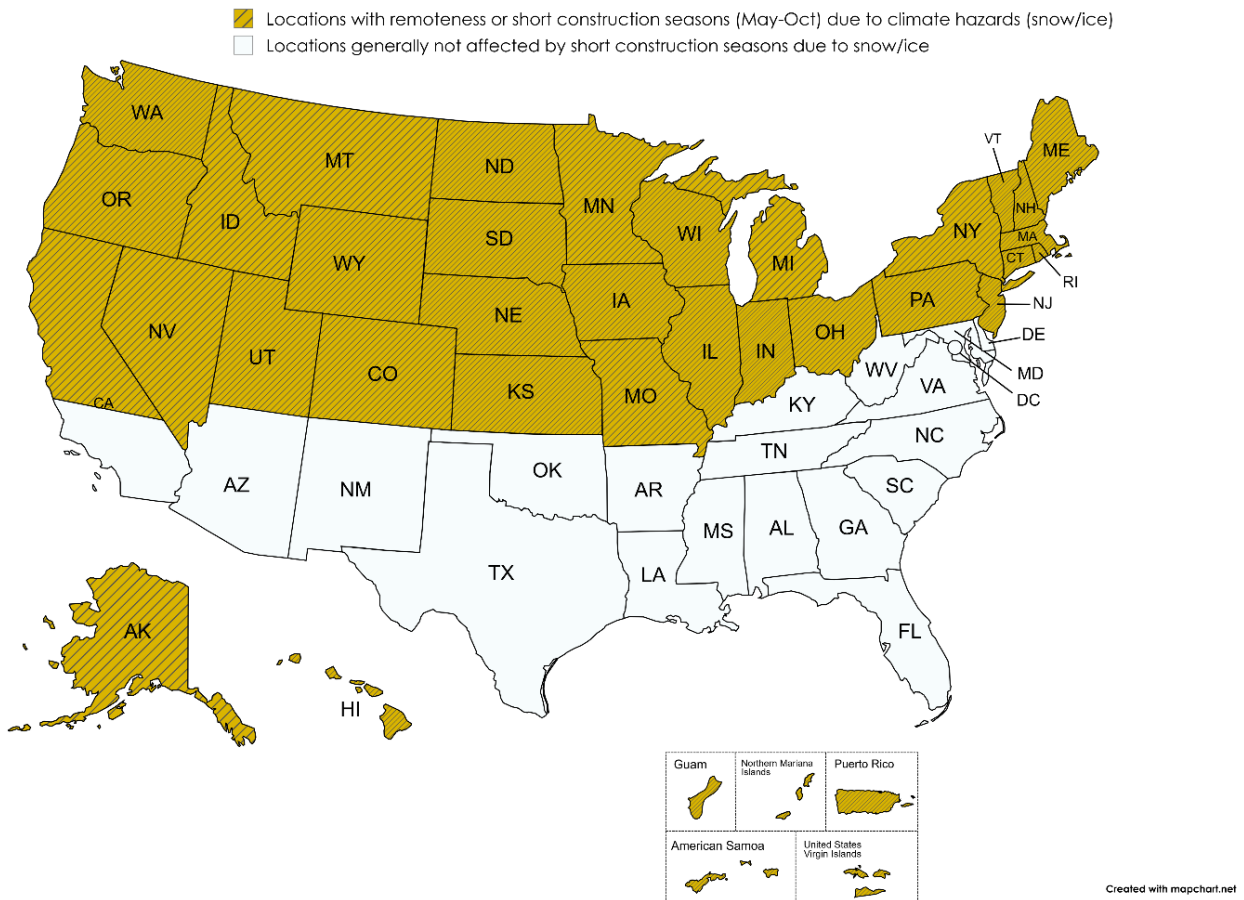
Broadband stakeholders we interviewed and surveyed identified statutory timelines to deploy broadband and lengthy permit processes as concerns that could negatively impact the broadband programs' ability to deploy broadband services, as described below.

A. *Regional Barriers Make Achieving Statutory Timelines Difficult*

Broadband officials said the program timelines to deploy broadband—4 years for BEAD and 5 years for MMG—are unreasonable. Of the 13 broadband offices we interviewed, 4 respondents (31 percent) said this concern is due to historically known barriers in their states and territories that are annually predictable, such as short construction seasons, locations that are remote or have limited access, and climate hazards, such as snow and ice. Also, broadband officials said some BEAD and MMG broadband projects could realistically take up to 10 years to deploy due to these barriers. For example, states in the northern and western parts of the country have shorter construction seasons that limit construction, which makes it challenging for these states to ensure broadband deployment is completed in 4 or 5 years. Officials in a couple of states mentioned that the construction season in the northern and western areas² generally begins in May and concludes by October (as shown in figure 1). Moreover, other broadband officials said remote locations accessible only by barge³ or aircraft may experience delays receiving supplies and equipment to deploy broadband networks. In addition, of the 43 responses to our survey of broadband offices, 15 (35 percent) said they had concerns related to environmental and climate change. Further review of the respondents' comments identified that seven broadband offices had concerns about extreme weather events. These extreme weather events are typically unpredictable in nature, such as hurricanes, sea-level rise, and wildfires. For example, during hurricane season, which is from June 1 through November 30, construction delays occur when a hurricane is expected to make landfall. Otherwise, the construction season is not impacted during hurricane season.

² The northern and western areas are defined as the states above the Mason-Dixon Line, which serves figuratively as the political and social dividing line between the North and the South areas, although it does not extend west of the Ohio river. (See <https://www.britannica.com/place/Mason-and-Dixon-Line>.)

³ A barge is a flat-bottomed boat that is usually towed and used primarily for transporting goods in harbors, rivers, and canals.

Figure 1. Locations Affected by Short Construction Seasons or Remoteness

Source: OIG analysis of survey results and interviews; map designed with mapchart.net

IIJA requires grantees and subgrantees for the BEAD program⁴ to deploy broadband and begin to provide broadband service to each customer that desires this service within 4 years after the award has been granted. IIJA also requires grantees and subgrantees for the MMG program⁵ to complete build-out of the middle-mile infrastructure within 5 years of the grant award. IIJA allows BEAD and MMG programs to extend these deadlines to complete broadband deployment. The IIJA statutory language permits an eligible entity (broadband office) in the BEAD program to extend the deadline,⁶ but for the MMG program, an eligible entity (subgrantee) must request an extension from the Assistant Secretary.⁷ Under IIJA, extension requests are limited to the following conditions: (1) the eligible entity has a plan for use of the grant funds, (2) the construction project is underway, or (3) extenuating circumstances require an extension of time to allow the project to be completed.⁸ Although IIJA does not specify a time

⁴ Section 60102(h)(4)(C) of IIJA.

⁵ Section 60401(e)(2) of IIJA.

⁶ Section 60102(h)(4)(C) of IIJA.

⁷ Section 60401(e)(5)(A) of IIJA.

⁸ Section 60102(h)(4)(C)(i)(ii)(iii) and Section 60401(e)(5)(A)(i)(ii)(iii) of IIJA.

limit to extend the deadline for the BEAD program,⁹ it limits extensions for the MMG program to 1 year.¹⁰ The BEAD¹¹ and MMG¹² NOFOs established that the Assistant Secretary has sole discretion in granting extension requests and limits the requests to one additional year.

NTIA officials said they are aware of timeline concerns regarding regional barriers, but they do not have the authority to change IIJA. Even though NTIA officials acknowledged that the BEAD program has tight timeframes and there is insufficient capacity in the telecommunications sector to build all projects at the same time,¹³ they said they will follow the statutory requirements and expect broadband offices, grantees, and subgrantees to comply with those requirements.¹⁴ In comparison, for the TBCP, NTIA program officials were able to provide feedback to Congress on the award timeframes as part of the technical comments for the expansion of TBCP in IIJA. NTIA's feedback noted it would not be feasible for awardees to expend their grant funds within a year, as originally proposed. As a result of this feedback, Congress increased the TBCP award timeframe from 1 year to 4 years in the final version of IIJA.¹⁵

Additionally, NTIA officials said they are not open to giving blanket extensions upfront. They will take significant issues into consideration and will wait for further data before granting project extensions.

B. Lengthy Permit Processes Could Lead to Broadband Deployment Delays

Broadband officials and industry stakeholders¹⁶ we interviewed cited the lengthy permitting process as one of their main challenges. Broadband officials emphasized that navigating local regulations and zoning laws for permits, pole attachments (attaching cable to utility poles), and right-of way access can often lead to delays if the permit process is not streamlined and properly managed, particularly in larger states. Industry stakeholders said requesting permits from multiple federal, state, tribal, and local governments can be time consuming, in some instances with a wait time of 2 years or more. These delays affect timely execution and increase deployment costs, which could impact broadband officials' and industry stakeholders' ability to successfully deploy broadband as required by IIJA. To ensure the timely completion of the BEAD, MMG, and TBCP programs, it is imperative to simplify and reduce the complexity and time

⁹ Section 60102(h)(4)(C) of IIJA.

¹⁰ Section 60401(e)(5)(A) of IIJA.

¹¹ Section II.B.1 of the BEAD NOFO.

¹² Section II.B.1 of the MMG NOFO.

¹³ Broadband Breakfast, May 24, 2024. *BEAD Director Warns There is Not Enough Capacity*, <https://broadbandbreakfast.com/bead-director-warns-theres-not-enough-capacity/>.

¹⁴ Section IV of the BEAD NOFO.

¹⁵ Commerce OIG, April 2023. *NTIA Took the Necessary Steps to Implement the Requirements for Awarding Funds Under the Consolidated Appropriations Act, 2021*, Report No. OIG-23-018-I.

¹⁶ Commerce OIG, February 29, 2024. *Management Alert: Challenges Industry Stakeholders Face with Broadband Deployment*, Report No. OIG-24-015-M.

associated with these lengthy processes for permitting, pole attachments, and right-of-way access.

Broadband officials and industry stakeholders also said the National Environmental Policy Act (NEPA) review process and tribal reviews are cumbersome and can grind any timeline to a halt. One broadband official said a few providers opted to return federal awards for broadband due to the cumbersome nature of NEPA reviews and federal permitting. One industry stakeholder association said its members' projects must go through the environmental review process required by NEPA¹⁷ and tribal consultation reviews even if the projects do not touch federal or tribal land, because the entire project is considered a major federal action, and such actions automatically have permit and review requirements. The stakeholder said the process can be extremely time-consuming and costly. Another industry stakeholder said NTIA's approach to NEPA reviews takes at least 3 to 6 months for NTIA to complete. The high costs and prolonged duration of this process often lead to funds expiring and budgets being exceeded, which worsens the overall timeframe for deploying broadband. Industry stakeholders said national attention is needed for government agencies to streamline the permitting process and hire staff who have expertise in the permitting processes and NEPA reviews.

GAO also noted concerns about federal agencies not consistently meeting deadlines for processing permits in an April 2024 report on broadband deployment.¹⁸ Specifically, GAO reported that two federal agencies, the Bureau of Land Management and the Forest Service, lacked accurate and complete data to determine processing times for all permit applications. The report also noted that the two agencies combined exceeded the deadline for over one-third of applications, despite improvements. This means that these agencies were unable to effectively monitor their compliance with the statutory requirement to either approve or deny applications within a 270-day timeframe. In another GAO report, stakeholders said the number of permit requests and the process for getting permits approved for MMG projects caused delays (that could take 2 to 3 years), additional costs, and other challenges.¹⁹

Additionally, Congress expressed concerns about potentially lengthy permitting processes during multiple hearings between May 23, 2023, and May 15, 2024.²⁰ For example, a representative said, "it is clear that the current permitting regime in the U.S., both at the federal and local level, is not equipped to handle the quantity of projects and

¹⁷ National Environmental Policy Act of 1969, as amended, Pub. L. No. 91-190, 42 U.S.C. 4321 et seq.; 40 C.F.R. § 1500.3, NEPA compliance.

¹⁸ GAO, April 2024. *Broadband Deployment: Agencies Should Take Steps to Better Meet Deadline for Processing Permits*, Report No. GAO-24-106157.

¹⁹ GAO, October 2023. *Broadband Infrastructure: Middle-Mile Grant Program Lacked Timely Performance Goals and Targeted Measures*, Report No. GAO-24-106131.

²⁰ House Committee on Energy and Commerce, Communications and Technology Subcommittee Hearings: "Oversight and Reauthorization of the National Telecommunications and Information Administration," May 23, 2023, "Oversight of the National Telecommunications and Information Administration," December 5, 2023, and "Fiscal Year 2025 NTIA Budget Request," May 15, 2024.

resources that the BEAD program promises.”²¹ Representatives also said that long permitting or environmental reviews can significantly delay broadband deployment. As noted in the GAO report,²² legislation requires that executive agencies process applications for communications use permits—including for broadband infrastructure—within 270 days of receipt. During a hearing on May 23, 2023, the Assistant Secretary acknowledged permitting has big challenges and said NTIA is working to streamline processes at the federal level, where NTIA has the most control. He noted that NTIA requires broadband proposals to address state and local permitting issues. Furthermore, the Assistant Secretary said NTIA has used additional resources to invest in a larger permitting team to streamline approvals.

In the previously issued OIG management alert,²³ we noted NTIA officials said they were aware of these challenges and were in various stages of developing and implementing initiatives to provide a more streamlined and efficient regulatory framework that complies with environmental and historic preservation obligations. At the time of the management alert, NTIA officials also said they were in the process of developing a tracking system to monitor broadband projects and escalate those that are having permitting problems to the relevant agency. In 2022, NTIA set up an intra-agency permitting team of subject matter experts to address the complex permitting processes that pose risks to the grant projects. Additionally, in August 2022, NTIA and the Bureau of Indian Affairs signed an agreement to streamline environmental permitting for high-speed internet projects on tribal lands.

During our review, we noted that NTIA has implemented the aforementioned tracking system to monitor projects and escalate those that have permitting problems to the relevant agency. Additionally, NTIA established 30 new categorical exclusions²⁴ to expedite the NEPA review of projects with minimal potential for environmental effects. NTIA also adopted FirstNet’s Programmatic Environmental Impact Statements to enable NTIA to take advantage of existing NEPA analyses, reducing the review time and effort for projects that are not categorically excluded.

²¹ House Committee on Energy and Commerce, Communications and Technology Subcommittee Hearing: “Oversight and Reauthorization of the National Telecommunications and Information Administration,” May 23, 2023.

²² GAO, April 2024. *Broadband Deployment: Agencies Should Take Steps to Better Meet Deadline for Processing Permits*, Report No. GAO-24-106157.

²³ Commerce OIG, February 29, 2024. *Management Alert: Challenges Industry Stakeholders Face with Broadband Deployment*, Report No. OIG-24-015-M.

²⁴ National Environmental Policy Act Procedures and Categorical Exclusions, 89 Fed. Reg. 22688 (April 2, 2024).

II. Challenge 2: BEAD NOFO Provisions Could Negatively Impact Deployment Efforts

Broadband stakeholders we interviewed and surveyed identified the aggressive timeline for subgrantee selections and technology requirements and exclusions as concerns that could negatively impact broadband deployment, as described below.

A. *The Timeline for Subgrantee Selections Is Aggressive*

The BEAD NOFO has a provision that requires broadband offices to include their subgrantee selections in their final proposal to NTIA, which is due 12 months after NTIA approves the initial proposal. The subgrantee selection process is one of 15 requirements²⁵ in the final proposal for broadband offices to complete to receive the final BEAD grant disbursements. Although IJA does not set a timeline for the subgrantee selection process to be completed, NTIA officials said broadband offices must meet IJA's requirement that BEAD subgrantees deploy broadband services within 4 years of receiving grant funds.

Broadband officials said the BEAD NOFO's timeline for subgrantee selection is unrealistically aggressive and could jeopardize the effectiveness of the BEAD program. Specifically, 9 (69 percent) out of 13 broadband offices we interviewed and 4 survey respondents categorized this issue under "other regulatory" challenges. They said they have concerns about the NOFO provision requiring broadband offices to complete subgrantee selections within 12 months after approval of the initial proposal. Broadband officials said it could take 3 to 6 months to process subgrantee applications in conjunction with completing the other 14 requirements for the BEAD final proposal. Additionally, broadband officials said their greatest concern is meeting the aggressive timeline in conjunction with administering multiple federal²⁶ and state grants simultaneously, which could limit the pool of applicants, decrease competition, burden already strained staffing resources, increase administrative expenses, and contribute to overall inefficiency.

NTIA officials said they are aware of concerns regarding the timelines for subgrantee selection, but they do not have the authority to change IJA and are bound by the statute to establish programmatic timelines within the discretion given to them. However, NTIA officials did not agree that the timeline for subgrantee selections is aggressive, considering that the program has now been operating for more than 3 years since the law was passed. NTIA officials also noted that broadband offices were successful in submitting their initial proposals to NTIA by the December 2023 deadline, even though some struggled due to staffing shortages. Even with these challenges, NTIA officials have testified in Congress and said they want broadband offices to move quickly

²⁵ Section IV.B.9.b of the BEAD NOFO.

²⁶ Broadband offices manage multiple federal grant programs that support infrastructure expansion, such as those under the American Rescue Plan Act and Digital Equity Act, as well as the BEAD and MMG programs.

and are confident that broadband offices can meet the deadline to select subgrantees in the final proposal without overbuilding or duplicating existing projects.²⁷

B. *Extremely High Cost Per Location Threshold Provision for Broadband Technology Could Limit Applications and Reduce BEAD Funding*

The BEAD NOFO's established program provisions require states and territories to select fiber over non-fiber technologies, with an exception for locations where it costs too much. Specifically, the states and territories must establish a cost threshold—defined in the NOFO as the Extremely High Cost Per Location Threshold (EHCPLT)—to determine where to draw the line for locations that are just too costly for fiber. The EHCPLT is a BEAD subsidy cost per location to be used during the subgrantee selection process; states and territories may decline to select a proposal of fiber technology if use of an alternative technology meeting the BEAD program's technical requirements would be less expensive. Essentially, the EHCPLT determines where awardees will be able to use fixed wireless and potentially other technologies. NTIA expects states and territories to set the EHCPLT as high as possible to help ensure that end-to-end fiber projects are deployed wherever feasible. This increases the opportunity for fiber applicants to automatically win awards over non-fiber applicants, which could significantly reduce BEAD dollars to bring high-speed, reliable internet to all.

According to NTIA, the intent of the EHCPLT provision is to award grants to fiber applicants first because it is the most sustainable broadband technology and unlikely to become obsolete. OIG does not question that fiber is the most sustainable and future-proof technology. Also, broadband industry stakeholders agree that fiber has its place. However, this EHCPLT provision could unintentionally impact the achievement of the Administration's goal to deploy broadband service to underserved and unserved communities. Industry stakeholders and broadband officials we interviewed identified concerns for prospective BEAD applicants regarding the high threshold and the preference for fiber, as described below:

- **States and territories are required to set the EHCPLT as high as possible.** Although fiber and cable industry stakeholders did not express any concerns with this provision, four non-fiber industry stakeholders we interviewed said the expectation that states and territories will set the EHCPLT as high as possible narrows opportunities for non-fiber applicants because the threshold could be set so high that alternative non-fiber technologies are never an option. The EHCPLT applies even if other broadband technology applicants besides fiber providers could deploy broadband per IIJA requirements at a lower cost. Industry stakeholders told us that consequently, the EHCPLT provision discourages other technology providers from applying, limits the pool of applicants, and decreases competition. If true, this will undercut the BEAD program's ability to meet one of IIJA's goals: to increase competition among broadband providers to offer more affordable, high-quality options for broadband services. In contrast, for TBCP and the MMG program, the

²⁷ House Committee on Energy and Commerce, Communications and Technology Subcommittee Hearing: "Oversight of the National Telecommunications and Information Administration," December 5, 2023.

NOFO allows a choice of technology “that best meets the needs of unserved and underserved locations,” including fiber, wireless, fixed wireless, and satellite.

- **Fiber preference could lead to rapid depletion of funding.** Broadband officials we interviewed were concerned that there is not enough BEAD funding to deploy fiber statewide, especially in extremely remote and high-cost areas. Additionally, alternative technology (such as fixed wireless and unlicensed spectrum²⁸) is only considered when the cost to deploy fiber exceeds the EHCPLT, which limits broadband officials’ flexibility to choose the technology that best fits their needs. Broadband officials said they must use a variety of technologies to bridge the digital divide and ensure all Americans receive reliable, high-speed broadband internet service, without the complexity of designing an EHCPLT as required by NTIA. Broadband officials explained that the challenges of certain terrain require the flexibility to use alternative technologies. Also, broadband officials have said that there is a good possibility they will not have enough funding to reach community anchor institutions.²⁹

In several congressional letters sent to NTIA, members of Congress had mixed opinions regarding this provision. Some favored a technologically neutral approach to broadband deployment and were concerned that some states and territories might seek to exclude certain technologies from use in the program or in their definition of a served location.³⁰ One senator had concerns that the preference for fiber broadband will increase costs, which could lead to some communities not receiving broadband access, and he has recommended that NTIA revise the NOFO requirements regarding the EHCPLT.³¹ In contrast, some members argued that funding should prioritize fiber and other technologies that can be scalable to meet the speeds that consumers will demand in the future.³²

²⁸ The Federal Communications Commission (FCC) reserves certain bands of the electromagnetic spectrum to license to specific providers (for example, television and radio broadcasters and cellular companies). In contrast, unlicensed spectrum is free and open for anyone to use without permission from the FCC, although it is subject to FCC rules intended to mitigate sources of harmful interference to protected, authorized devices. Wi-fi and Bluetooth are examples of applications that use unlicensed spectrum.

²⁹ A “community anchor institution” is defined in section 60102(a)(2)(E) of IJJA as an entity such as a school, library, health clinic, health center, hospital or other medical provider, public safety entity, institution of higher education, public housing organization, or community support organization.

³⁰ Letter from Cathy McMorris Rodgers, Chair, Committee on Energy and Commerce, and Robert E. Latta, Chairman, Subcommittee on Communications and Technology, to Alan Davidson, Assistant Secretary and Administrator, NTIA, dated October 3, 2023.

³¹ *Red Light Report* by Senator Ted Cruz Ranking Member, U.S. Senate Committee on Commerce, Science, and Transportation, issued September 2023.

³² Letter from Frank Pallone, Jr., Chairman, Committee on Energy and Commerce, and Mike Doyle, Chairman, Subcommittee on Communications and Technology, also signed by 15 additional members of Congress, to Alan Davidson, Assistant Secretary and Administrator, NTIA, dated March 21, 2022.

In the previously issued OIG management alert,³³ industry stakeholders said NTIA should consider modifying the BEAD NOFO to allow states and territories a choice of technology that best fits their needs. Industry stakeholders believe this would increase competition among broadband providers to offer more affordable, high-quality options for broadband services, similar to the TBCP and MMG programs.

NTIA officials said that IIJA gives them discretion to define priority broadband projects,³⁴ which resulted in the fiber preference. NTIA officials also said they recognize that fiber cost for broadband deployment could be expensive, which is why they included the EHCPLT in the NOFO, allowing states and territories to select an alternative broadband technology for locations where deploying fiber would cost more than the threshold.

After issuing our management alert, we followed up with NTIA regarding the fiber preference and EHCPLT provisions. NTIA officials insisted that the NOFO provision provides states and territories with flexibility to use alternative technology and that changes to the NOFO were not necessary. Further, NTIA officials said the NOFO recognizes fiber's unique position to meet the IIJA requirement that the resulting network built by the project can easily scale speeds over time to meet the evolving connectivity needs of households and businesses and support the deployment of 5G, successor wireless technologies, and other advanced services. Also, during a congressional hearing,³⁵ when asked about the NOFO's prioritization of certain technologies, the Assistant Secretary said that to ensure everyone is connected, there is a need to use a broad range of technologies in the deployment of these programs. NTIA officials believe the NOFO allows states and territories a tremendous amount of flexibility to set their own EHCPLT to make sure they are getting the right mix of technology. Subsequent to our follow-up regarding fiber preference, an NTIA official announced plans to release new guidance to encourage broadband offices to use alternative technologies over fiber optics when appropriate.³⁶ NTIA officials released final guidance for BEAD funding of alternative broadband technology in January 2025.

C. Programmatic Exclusion of Unlicensed Spectrum or Satellite Could Lead to Overbuilding without Oversight

An industry stakeholder we interviewed said the BEAD NOFO excludes unlicensed spectrum as reliable broadband. This exclusion increases the risk of overbuilding,

³³ Commerce OIG, February 29, 2024. *Management Alert: Challenges Industry Stakeholders Face with Broadband Deployment*, Report No. OIG-24-015-M.

³⁴ Section 60102(a)(1)(I) of IIJA defines "priority broadband project" as a project designed to provide broadband service that meets IIJA requirements for speed, latency, reliability, and consistency in quality of service and ensures that the network built by the project can easily scale speeds over time to meet the evolving connectivity needs of households and businesses and support the deployment of 5G, successor wireless services, and other advanced services.

³⁵ House Committee on Energy and Commerce, Communications and Technology Subcommittee Hearing: "Fiscal Year 2025 NTIA Budget Request," May 15, 2024.

³⁶ Broadband Breakfast, May 7, 2024. *NTIA to Release Guidelines for Alternative Broadband Technologies Under BEAD*, <https://broadbandbreakfast.com/ntia-to-release-guidelines-for-alternative-broadband-technologies-under-bead/>.

because locations served by fixed wireless networks using entirely unlicensed spectrum are categorized by the BEAD NOFO as unserved. According to the industry stakeholder, the Federal Communications Commission's (FCC's) map of broadband availability identifies more than 1.92 million last-mile locations that are currently served entirely by unlicensed spectrum. These locations would be eligible for BEAD funding as unserved locations, potentially taking funds away from locations that are truly unserved. The stakeholder cited research by an economist that determined connecting locations to fiber that are already receiving internet access via unlicensed spectrum would result in as much as \$8.6 billion in wasteful spending.³⁷ The BEAD NOFO allows locations receiving broadband service from unlicensed spectrum to be included in an underserved or unserved project. These projects require at least 80 percent of the broadband serviceable locations to be underserved or unserved, resulting in up to a 20 percent overlap of connecting broadband service to locations with existing internet service using unlicensed spectrum or satellite, which could potentially lead to overbuilding.

In the previously issued OIG management alert,³⁸ NTIA officials agreed that BEAD funding allocations and awards could be spent on locations serviced by providers that are defined as non-reliable service providers (i.e., unlicensed spectrum or satellite). NTIA officials said Congress openly considered that underserved and unserved service projects will have some potential overbuilding. NTIA officials said overbuilding would be limited to those locations permitted by IIJA, which NTIA identified as locations with existing internet services using unlicensed spectrum or satellite. Furthermore, NTIA officials said they will assess whether proposed projects meet underserved and unserved service requirements to ensure overbuilding is limited to those locations permitted by IIJA, but they did not provide details regarding their oversight process for overbuilding.

In our management alert, we proposed that NTIA should consider developing a formal oversight process to ensure limited overbuilding in locations with reliable broadband services and locations using unlicensed spectrum or satellite broadband service.

After issuing our management alert, we followed up with NTIA regarding details of its oversight process for overbuilding. NTIA officials said that they were working on a process to ensure limited overbuilding in locations with reliable broadband services and locations using unlicensed spectrum or satellite broadband service. Also, Congress raised similar concerns regarding overbuilding and cited our previously issued management alert on industry concerns during a congressional hearing in May 2024.³⁹ In that hearing, the Assistant Secretary said NTIA has approached this issue in a careful way that has fidelity to the statute. While he had not looked at the exact details of the management alert's proposed action for change, he presumed NTIA would implement it

³⁷ William Lehr, MIT, January 2023. *White Paper: Getting to the Broadband Future Efficiently with BEAD Funding*. The \$8.6 billion number stems from analyst calculations that the cost to deploy fiber to each of the 1.92 million locations currently served by unlicensed spectrum could be as high as \$4,500.

³⁸ Commerce OIG, February 29, 2024. *Management Alert: Challenges Industry Stakeholders Face with Broadband Deployment*, Report No. OIG-24-015-M.

³⁹ House Committee on Energy and Commerce, Communications and Technology Subcommittee Hearing: "Fiscal Year 2025 NTIA Budget Request," May 15, 2024.

or had implemented it. Also, he reassured Congress that NTIA has parameters in place to ensure there is no overbuilding, but he did not provide specific details. Subsequent to the congressional hearing, we followed up with NTIA officials, and they provided details on the parameters they have in place to ensure that overbuilding is limited to those locations permitted by IIJA. Specifically, NTIA officials said they have the following multiple processes in place to avoid any improper overbuilding: (1) the FCC data map process; (2) the eligible entity⁴⁰ challenge processes; (3) NTIA's data validation of eligible entity challenge processes; (4) NTIA validation of eligible entity final proposal data; (5) eligible entity monitoring of subgrantee activity, overseen by NTIA; and (6) NTIA monitoring of eligible entities and spot checking of subgrantees.

III. Challenge 3: Simultaneous, Nationwide Deployment Could Exacerbate Supply Chain and Labor Market

Broadband stakeholders shared similar concerns about supply chain and labor shortages being exacerbated by broadband deployment happening simultaneously and nationwide. This circumstance is also affected by the previously described challenges of aggressive statutory and program timelines and requirements of the EHCPLT provision. Stakeholders we interviewed expressed concerns about possible deployment delays due to supply chain disruptions, workforce shortages, and inadequate broadband office staffing, as described below.

A. Supply Chains Could Be Significantly Disrupted and Affect Project Timelines

Of the 13 broadband offices we interviewed, 9 respondents (69 percent) had supply chain concerns, as did 21 (49 percent) of 43 survey respondents. Broadband officials said there will be significant supply chain disruptions, and it will be more difficult to deploy broadband infrastructure quickly and efficiently with subgrantees in 56 states and territories competing for the same products. Industry stakeholders said that limited access to fiber materials and trucks could result in timeframes of 18 months or longer to get technicians out to install fiber. GAO also noted concerns about the availability of fiber material in an October 2023 report on broadband infrastructure.⁴¹ Specifically, GAO reported that a few providers expressed concerns about the availability of fiber, which was in short supply during the COVID-19 pandemic. The report also mentioned provider concerns about both cost and availability of fiber once the federal programs start distributing funds, due to increased demand that would drive the cost of fiber higher. Although NTIA has issued limited waivers^{42,43} for requirements to purchase broadband essentials that are made in America, additional action may be needed to address resource shortages and minimize supply chain challenges.

⁴⁰ An eligible entity is a state or territory broadband office (collectively called "broadband officials" in this report).

⁴¹ GAO, October 2023. *Broadband Infrastructure: Middle-Mile Grant Program Lacked Timely Performance Goals and Targeted Measures*, Report No. GAO-24-106131.

⁴² Limited General Applicability Nonavailability Waiver of the Buy America Domestic Content Procurement Preference as Applied to Recipients of Broadband Equity, Access, and Deployment Program, February 22, 2024.

⁴³ Limited Applicability Nonavailability Waiver of the Buy America Domestic Content Procurement Preference as Applied to Recipients of Middle Mile Grant Program Awards, April 19, 2023.

B. Workforce Shortages Could Slow Infrastructure Deployment

Industry stakeholders we interviewed said the telecommunications labor force may not be sufficient to deploy the broadband infrastructure due to (1) recruiting challenges for trained and experienced workers, especially in rural areas, and (2) the inability to attract new workers because of a lack of national messaging that promotes telecommunications as a viable, long-term, and well-paying career field. Additionally, industry stakeholders said they are concerned that as subgrantees are awarded BEAD funds, they will not have enough fiber technicians. For example, according to one industry stakeholder, the country will need about 205,000 fiber technicians to meet the demand created by the BEAD program. Of the 13 broadband offices we interviewed, 10 respondents (77 percent) reported facing challenges with labor shortages, as did 18 (42 percent) of 43 survey respondents. One broadband official said there is a lack of a skilled workforce in broadband technology because companies are taking employees from other desperately understaffed industries. According to NTIA's labor market research,⁴⁴ most states are projected to experience a telecommunications worker shortage by 2026. The severity of the shortage varies by state and role, and addressing workforce shortages will require a diverse range of solutions.

Moreover, workforce labor shortages are putting significant economic pressures and delays on building broadband networks. For example, our review of Bureau of Labor Statistics data indicates that the number of telecommunications workers has declined since 2014, resulting in a 29 percent decrease between January 2014 and January 2024.⁴⁵ Meanwhile, large increases in federal funding for broadband deployment are driving the need for an expanded workforce.

Other government agencies have also identified worker shortages as a key area of concern for broadband deployment. For example, GAO noted that thousands of additional skilled telecommunications workers will be needed to deploy broadband funded through selected federal programs, including the BEAD program.⁴⁶ GAO also reported that industry members described challenges finding labor to support the increased demand for broadband deployment for middle-mile networks.⁴⁷ In addition, the Telecommunications Interagency Working Group⁴⁸ has noted that the nation faces a

⁴⁴ Internet For All, State Workforce Research Findings.

⁴⁵ U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics. Available at <https://www.bls.gov/oes/> (data extracted on June 6, 2024).

⁴⁶ GAO, December 2022. *Telecommunications Workforce: Additional Workers Will Be Needed to Deploy Broadband, but Concerns Exist About Availability*, Report No. GAO-23-105626.

⁴⁷ GAO, October 2023. *Broadband Infrastructure: Middle-Mile Grant Program Lacked Timely Performance Goals and Targeted Measures*, Report No. GAO-24-106131.

⁴⁸ The Telecommunications Interagency Working Group includes members from the Department of Commerce, Department of Education, Department of Labor, FCC, NTIA, Communications Workers of America Union, Directorate of Construction of the Occupational Safety and Health Administration, Indian tribes, institutions of higher education, labor organizations representing the telecommunications workforce, a public interest advocate for tower climber safety, a registered apprenticeship program in construction or maintenance, rural telecommunications carriers, telecommunications industry associations, a telecommunications contractor firm, and a wireless infrastructure association.

serious shortage of trained fiber installers and frontline electrical workers, as well as network and cybersecurity professionals.⁴⁹ Also, the Telecommunication Interagency Working Group noted the projected demand for telecommunications workers far exceeds the supply of workers who are entering the sector from current education and job training programs. Therefore, states may not be able to replenish and sustain the telecommunications workforce at a time when labor shortages are putting significant economic pressures and delays on building broadband networks. The semiconductor industry also has a shortage of skilled workers, forecasting a need for 250,000 workers in the next 5+ years,⁵⁰ which could compete for talent from the same pool of available workers. Building long-term opportunities for career advancement is key to developing a sustainable broadband workforce.

Industry stakeholders also said this is a national challenge because there are no national, standardized training programs, certifications, or licenses to develop a successful workforce. Therefore, industry stakeholders suggested White House involvement to develop a national database of critical broadband industry jobs and national, standardized training programs, certifications, and licenses.

In the previously issued OIG management alert,⁵¹ NTIA officials said their focus is to work closely with states and territories on the broadband programs, and NTIA will continue to work with states and territories as they prepare their workforce development plans for BEAD program deployment. For example, in October 2022, NTIA released workforce planning guidance to support states and territories developing their workforces for grant implementation and designing workforce plans and standards for subgrantees. NTIA also developed a workforce development webpage to provide additional resources and has published case studies highlighting existing workforce development programs.

During our review, NTIA officials said they have engaged with industry stakeholders to better understand the challenges they face when it comes to recruiting, hiring, and retaining a skilled workforce. For example, NTIA has met with more than 75 stakeholders to discuss workforce-related challenges and opportunities. This includes internet service providers (ISPs), labor unions, industry associations, training providers, community-based organizations, construction contractors, and equipment vendors. NTIA officials also said they participated in the White House's Talent Pipeline Challenge, which was a nationwide call to action for employers; education and training providers; state, local, tribal, and territorial governments; and philanthropic organizations to make tangible commitments that support equitable workforce development in three critical infrastructure sectors, including broadband.

⁴⁹ Telecommunications Interagency Working Group, January 2023. *Recommendations to Address Workforce Needs*.

⁵⁰ Sonderman, Thomas, November 16, 2023. *The U.S. Semiconductor Sector Is Surging. We Need the Workforce to Match*. Barron's.

⁵¹ Commerce OIG, February 29, 2024. *Management Alert: Challenges Industry Stakeholders Face with Broadband Deployment*, Report No. OIG-24-015-M.

C. Workforce Development Barriers Could Delay Broadband Deployment

Some of the broadband officials we interviewed did not anticipate having residual funds for significant workforce development activities⁵² because they expect to use the entire BEAD allocation to provide broadband service to unserved locations in their states. There are also state-specific workforce development barriers preventing people from entering training programs and the workforce. These barriers include childcare needs, reliable transportation for prospective trainees, declining workforce populations (especially in rural areas), and time needed to train prospective candidates. For example, broadband officials we interviewed said (1) they struggle to find new labor and talent in aging rural communities, (2) the BEAD program timelines give them 3 years to add thousands of jobs, which is difficult when training programs last 12 to 24 months, and (3) broadband offices cannot expedite these training certifications and skillsets because they require advanced degrees. Also, a broadband office survey respondent said that the shortage of prospective trainees means that training programs, apprenticeships, badging, and increasing existing worker skillsets will not increase the workforce population.

NTIA has taken significant actions regarding workforce development, such as providing state-specific workforce research findings to broadband offices as part of its technical assistance work. However, NTIA officials said a mitigation strategy for workforce development barriers is not the focus of the infrastructure program and broadband officials should discuss these barriers with state leadership because they are state-controlled issues. In addition, NTIA officials said BEAD is an infrastructure grant, and NTIA's role is largely to provide technical assistance, build connections with industry and educational systems, and help states leverage existing tools such as statewide workforce development programs and programs that have resources and funding to address childcare barriers. While some broadband offices are building connections with industry and educational systems, other broadband offices are still challenged to increase the workforce to deploy broadband.

D. Broadband Offices May Not Have Adequate Staffing

All 56 states and territories have a broadband office or program that is responsible for administering their share of the IIJA funding.⁵³ These broadband offices will need a staffing surge along with permanent capacity to ensure they are able to support efforts to close the digital divide now and into the future.

Of the 13 broadband offices we interviewed, 8 respondents (62 percent) said they are not adequately staffed and are concerned about their capacity to successfully manage broadband requirements. Specifically, 11 of these 13 (84 percent) were newer offices created only months before or after IIJA was signed into law. Although some broadband

⁵² The BEAD NOFO requires broadband offices to develop a workforce plan to achieve an appropriately skilled and credentialed workforce to physically build broadband networks.

⁵³ Pew, November 15, 2022. *With New Funding, State Broadband Offices Boost Hiring Efforts*, <https://www.pewtrusts.org/en/research-and-analysis/articles/2022/11/15/with-new-funding-state-broadband-offices-boost-hiring-efforts>.

offices rely on support staff from other state agencies to supplement their own staff for accounting, audit, financial, legal, and marketing services, some said they plan to hire additional staff. Also, broadband officials anticipated needing additional employees due to multiple grant program responsibilities and to meet future BEAD requirements. This could cause capacity challenges because new employees need time to learn as they onboard.

NTIA officials said they have been aware of broadband office staffing issues since day one and have focused on providing broadband offices technical assistance to run a successful program, including resources for grants management, community engagement, and digital equity, as well as outreach such as regional workshops, local coordination events, and a website for public comments.⁵⁴ NTIA officials also said they have discussed with broadband offices how to achieve milestones with the available resources and that NTIA technical assistance teams are available for support. Additionally, NTIA officials noted that broadband offices received \$5 million to build capacity in their broadband offices, but broadband officials told us that hiring is a challenge because there is a competitive hiring market and state agencies offer lower salaries than the private sector, which is also hiring in preparation for BEAD funding. Further, under the IIJA and BEAD NOFO, building broadband office capacity is just one eligible use for the planning funds. Therefore, broadband offices may not have \$5 million to dedicate solely to capacity building.

IV. Challenge 4: Broadband Officials Expressed Concerns with NTIA's Communication Process

Broadband officials reported they generally had positive working relationships with their assigned federal program offices.⁵⁵ However, some broadband officials we interviewed and surveyed said NTIA's communication of crucial information pertaining to technical guidance and tools was untimely or inconsistent, as described below.

A. *NTIA's Communication Pertaining to Technical Guidance Was Not Always Timely*

Of the 13 broadband offices we interviewed, 6 respondents (46 percent) said they were waiting for either official NTIA policy guidance or answers to questions related to the lack of transparency regarding the FCC map of broadband availability, the EHCPLT, low-cost plans, and undefined terms in the BEAD NOFO. According to broadband officials, NTIA officials regularly responded that information was forthcoming; however, the eventual responses to the questions simply reiterated the existing language in the BEAD NOFO and did not provide clarification. Despite the challenge of untimely policy

⁵⁴ The BEAD NOFO requires eligible entities (broadband offices) to establish, document, and adhere to clear procedures to ensure transparency. This includes publicly posting the initial and final proposals prior to submission to NTIA as well as plans or comments submitted by local political subdivisions or tribal governments and explanations of how local recommendations were addressed.

⁵⁵ Federal program officers serve as the focal point for the programmatic, scientific, and technical aspects of programs and projects. They are responsible for monitoring and oversight of the work being conducted under an award, such as tracking the recipient's progress, comparing the actual accomplishments with the goals and objectives established in the award, and advising the grants officer on all programmatic aspects of the awards.

guidance and answers to questions from NTIA, broadband officials said NTIA was not flexible with program milestones and would not allow extensions for submitting initial proposals.

NTIA officials said they are aware of the perception of untimely communications and inconsistent guidance as they develop the programs in real time. Officials said that NTIA moved quickly to meet the program requirements outlined in IJA and it was not possible to have the guidance prepared the day they issued the BEAD NOFO. Additionally, it was not possible to create a single document that spoke to the different approaches of the 56 states and territories to the program. NTIA officials said they did a tremendous volume of pre-submission technical assistance. For example, NTIA held day-long meetings with multiple broadband officials and dispatched subject matter experts to address technical questions ahead of broadband officials submitting documents to NTIA.

B. NTIA's Communication Was Not Always Consistent

Broadband officials said NTIA provided inconsistent communication for guidance related to the BEAD NOFO, subsequent BEAD guidance, and feedback given during the curing process for the BEAD initial proposal. For example, broadband officials said NTIA staff members had different interpretations, resulting in conflicting guidance.

NTIA officials said some broadband offices could have received inconsistent guidance if they queried various NTIA officials until the broadband offices received an answer they deemed satisfactory. NTIA officials also said that while they answer very specific questions from the broadband offices, they do not see the full details and context of the information until the submission of a full initial proposal, and issues may be presented differently in the proposal from how they were previously described. However, NTIA officials acknowledged reversing prior verbal guidance during the curing process but said NTIA provided the best information available at the time while awaiting decisions from policymakers. Additionally, NTIA officials said that when there are common issues that apply to multiple states and territories, they release Frequently Asked Questions documents and policy notices.

According to broadband officials, without timely, consistent, clear, and definitive guidance, it is impossible for broadband offices to meet their obligations on time without straining existing staff resources and increasing administrative expenses.

Summary of Agency Response to Draft Report

On February 28, 2025, we received NTIA's formal response to our draft report. Our report makes no recommendations, but NTIA noted it will continue its outreach to state and territory broadband offices to provide support in addressing the challenges identified in the report. NTIA's formal response is included in this report as appendix B.

Appendix A: Objective, Scope, and Methodology

The objective of our evaluation was to identify potential challenges for deploying broadband to underserved and unserved communities. Our scope focused on the various challenges that impact broadband deployment to underserved and unserved communities.

To accomplish our objective, we performed the following actions:

- We interviewed NTIA staff regarding challenges with broadband deployment and feedback on mitigating strategies or corrective action taken.
- We interviewed eight broadband industry associations to obtain their perspectives on challenges with broadband deployment and whether they received assistance from NTIA to address these challenges. These associations represented a range of broadband technologies, such as fiber, cable, DSL, wireless, and satellite as well as associations that represented smaller and rural operations.
- We interviewed 13 judgmentally selected broadband offices across five regions—West, Midwest, Southwest, Southeast, and Northeast—to identify challenges they experience with broadband deployment for broadband programs (BEAD, MMG, Digital Equity, and TBCP). To select the broadband offices, we categorized the 56 states and territories into two tiers based on their allocation amounts, using \$675 million as the midpoint: tier 1 for those with high allocations and tier 2 for those with mid to low allocations. From each region, we selected two states—one state per tier—resulting in a total of 10 states. Additionally, we judgmentally selected three states and territories to ensure we had a more balanced representation of broadband offices.
- In August 2023, we sent a quantitative online survey to each of the 56 state and territory broadband directors to provide anonymous feedback on the challenges they and their offices face in deploying broadband to underserved and unserved areas. We received 43 responses⁵⁶ to the survey, or about a 77 percent response rate.
- In September 2023, we sent a qualitative online questionnaire to the eight broadband industry associations we interviewed. The leadership of each industry association distributed the questionnaire on our behalf to their association members to collect anonymous information on the challenges they face in deploying broadband to underserved and unserved areas. The questionnaire also collected anonymous information on the effectiveness of the IIJA broadband programs in addressing these challenges. Of the eight broadband industry associations, the leadership for five told us over 4,500 individual members received the questionnaire, and we received 211 responses. Because all associations did not provide a total population of their membership, we could not calculate a conclusive response rate.

⁵⁶ Of the 56 broadband offices surveyed, 48 (86 percent) responded to the survey; however, only 43 respondents addressed every question.

- We analyzed the responses to the broadband office survey and the industry stakeholder questionnaire, including the closed-ended and open-ended questions. For the closed-ended questions, OIG survey experts analyzed the responses to identify themes and trends in the quantitative results. For the open-ended questions, OIG auditors performed content analysis to identify themes across the respondents. The auditors then categorized each response into one or more themes.
- We reviewed IJJA and NTIA program requirements, congressional letters, states' and territories' Five-Year Action Plans, and related news articles, and summarized broadband industry association concerns related to the challenges mentioned by industry associations and state and territory broadband offices.

We conducted our evaluation from July 2023 through February 2025 under the authority of the Inspector General Act of 1978, as amended (5 U.S.C. §§ 401-424), and Department Organization Order 10-13, as amended October 21, 2020. We performed our fieldwork remotely.

We conducted this evaluation in accordance with *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency. Those standards require that we plan and perform the evaluation to obtain sufficient, appropriate evidence to provide a reasonable basis for our conclusions based on our evaluation objective. We believe that the evidence obtained provides a reasonable basis for our conclusions based on our evaluation objective.

Appendix B: Agency Response

NTIA's response to our draft report begins on the following page.



UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and
Information Administration
Washington, D.C. 20230

DATE: February 28, 2025

TO: Arthur L. Scott, Jr.
Assistant Inspector General for Audit and Evaluation
Office Of Inspector General

FROM: Karin O'Leary
Deputy Assistant Secretary for Operations and Administration
Performing the non-exclusive functions and duties of the
Assistant Secretary for Communications & Information and
NTIA Administrator

SUBJECT: Draft Report: *Broadband Stakeholders Identified Various Challenges Affecting
Broadband Deployment, January 30, 2025*

Thank you for the opportunity to respond to the Department of Commerce Office of Inspector General (OIG) draft report on *Broadband Stakeholders Identified Various Challenges Affecting Broadband Deployment*. We appreciate OIG's evaluation and will, as always, take into account OIG's input. NTIA is committed to ensuring the integrity, efficiency, and success of its broadband deployment grant programs.

As it administers \$48.2 billion for broadband programs provided by the Infrastructure Investment and Jobs Act, NTIA adheres to statutory requirements in setting program policies to efficiently and responsibly utilize taxpayer funds. In developing its Notices of Funding Opportunities and implementing these programs, NTIA has solicited and been responsive to input from all stakeholders, including state and territory broadband offices, broadband equipment and services providers and interest groups, and the families and small businesses that lack adequate broadband access today. In so doing, NTIA continually strives to balance the interests of diverse stakeholders to meet the statutory requirement of facilitating broadband service for all Americans.

In particular, NTIA staff has worked closely with state and territory broadband offices to understand their challenges and provided technical assistance to support their efforts, consistent with the statute and NTIA's expertise. We will continue our outreach to states and territories to address any unresolved concerns raised in the draft report to ensure the efficient use of grant funds to connect all Americans.

Again, thank you for this evaluation. We appreciate your efforts on this matter and look forward to continuing to work with you. If you have any questions, please contact, Patrick Sullivan, Audit Liaison, at 202-941-0890 or psullivan@ntia.gov.

Sincerely,

**KARIN
O'LEARY**

Digitally signed by
KARIN O'LEARY
Date: 2025.02.28
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Karin O'Leary

Deputy Assistant Secretary for Operations and Administration
Performing the non-exclusive functions and duties of the
Assistant Secretary for Communications & Information and
NTIA Administrator

REPORT

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