BROADBAND INVESTMENTS THAT GO THE DISTANCE:

Incorporating High Road Labor Standards and Future-Proof Infrastructure into a State or Locality's Broadband Plan

2023

CWA

Introduction

States and localities are in a unique moment when it comes to broadband investment. From the American Rescue Plan Act's (ARPA) Capital Projects Fund and State and Local Fiscal Recovery Funds, to the the Infrastructure, Investment and Jobs Act's (IIJA) Broadband Equity Access and Deployment (BEAD) and Digital Equity programs, there is unprecedented funding for broadband infrastructure and adoption that will move through the state and local level in the coming years.

How do we ensure that this historic investment translates to long-lasting future-proof infrastructure? How can we promote good jobs, safe workplaces, and quality build that stands the test of time? This policy brief outlines high level recommendations and considerations for states and localities as they craft broadband programs.

Communications Workers of America (CWA) members are experienced broadband technicians, as well as community leaders who believe in digital equity and high speed broadband for all. Our local leaders are eager to collaborate and serve as a resource for states and localities as they invest in broadband infrastructure that will stand the test of time.

Executive Summary

The telecommunications sector faces workforce challenges, including wage stagnation and an increasingly subcontracted workforce. In order to ensure that public dollars support the good jobs and well-trained workforce necessary to deploy and maintain long-lasting broadband infrastructure, states and localities' broadband programs should incorporate workforce considerations and high road labor standards.

I. Programs should require applicants to provide data regarding their Workforce Plan, including information on training and safety, job quality, local hire and targeted hire, accountability and subcontracting practices, and ongoing operational workforce.

II. Programs should prioritize subgrantees that commit to high road labor practices, including using a directly employed workforce, robust in-house training, quality wages and benefits, and a locally based workforce.

III. Programs should give high road labor practice factors substantial weight in the evaluation grading scheme.

IV. Workforce Plans and labor commitments should be enforceable and publicly disclosed on a website or online portal.

V. Job quality considerations should be integrated into workforce development strategies. Workers and their unions are an expert resource for program design.

VI. Programs should direct public funds towards future-proof fiber technology, which is scalable, sustainable, and cost-effective. Policymakers should be informed on the advantages and limitations of different technologies to effectively evaluate industry claims.

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Background: Workforce Challenges in the Telecommunications Sector

The telecommunications industry faces wage stagnation and increased subcontracting, which can translate to safety and service quality issues. These challenges in the broadband industry and labor market should inform state and localities' program design.

Wage Stagnation and Labor Market Challenges

The telecommunications industry has faced wage stagnation in recent decades. The lowest-wage telecommunications workers (at the 10th percentile in the wage distribution) have seen inflation-adjusted wages fall 0.3% annually since the 1970s, and the median telecommunications worker wage increased just 0.4% annually, compared with 1.8% annual productivity growth in that period.[1] Wage stagnation translates into difficulty hiring and retaining workers, and creates problems for the stability and health of the telecommunications labor market.

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This workforce crisis is partly due to the rise of "fissured" contract relationships in the industry.[2] Large firms, often called the "lead" firm, will contract functions to a smaller firm, which then may contract to other smaller firms as well. Along the way, costs are cut, margins are squeezed, and lines of accountability become less clear. Work that 40 years ago would have been

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[1] John Schmitt and Jori Kandra, Economic Policy Institute, "Decades of Slow Wage Growth for Telecommunications Workers," (Oct. 2020), https://www.epi.org/publication/decades-of-slow-wage-growth-for-telecommunication-workers/.; Telecommunications Interagency Working Group: Recommendations to Address Workforce Needs, Submitted to the United States Congress, January 13, 2023, https://www.fcc.gov/document/telecom-interagency-working-group-report-workforce-needs.

[2] David Weil, *The Fissured Workplace: How Work Got So Bad for So Many*, Harvard University Press, 2014. See also Brian Callaci, "The Historical and Legal Creation of a Fissured Workplace: The Case of Franchising," dissertation, University of Massachusetts Amherst, 2019. https://scholarworks.umass.edu/dissertations_2/1696/.

performed by direct employees of major telecom companies is now often performed by an array of smaller subcontracting firms.

Unlike in other types of construction, broadband and telecommunications are characterized by historical direct employment with only the recent proliferation of subcontracting arrangements. In traditional heavy construction, a general contractor manages the project and selects craft-based contractors. Given the long history of this arrangement, both employers and labor unions in traditional construction have developed historically entrenched strategies for structuring labor relations in this sector, including the use of Project Labor Agreements (PLAs). In contrast, in telecommunications these arrangements often result in low-road practices, where workers are paid poorly and subject to dangerous work conditions. Additionally, telecom contractors frequently travel across the country for deployment jobs, creating a national labor market and enabling out-of-state contractors to undermine wages and standards long-established by telecom workers in a particular local market. In contrast, the construction sector operates within local labor markets, which has enabled labor market intermediaries, such as union-sponsored hiring halls, to maintain standards in partnership with employers.

Challenges for Safety and Service Quality

CWA members see firsthand the way that increased subcontracting can create safety issues. In a nationwide survey of CWA technician members, respondents consistently reported problems with the quality of contractor work. Members most frequently reported that contractors cause quality problems leading to higher costs (96%), followed by service quality problems for customers (81%), and safety risks for workers or the public (57%).[3] In multiple states, low road contractors have failed to properly conduct utility locates and caused gas

CWA technician members report problems with contractor work

96%   **Problems leading to higher costs**

81%   **Service quality problems for customers**

57%   **Safety risks for workers or the public**

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[3] Communications Workers of America, "AT&T's Web of Subcontractors: Building Next Generation Networks with Low-Wage Labor," October 2020, https://cwa-union.org/sites/default/files/20201005attsubcontractorreport.pdf.

explosions. In multiple instances, these explosions have caused injuries and loss of life.[4]

> **Installation issues affect the longevity of broadband installation and the quality of service for customers.**

Shoddy work also affects service quality. When work is contracted out, the lead firm is often unable to ensure the same level of quality and the financial incentives can create circumstances for shoddy work. Contractors are often paid a piece rate for a project. In contrast to a worker paid a high quality hourly wage, this type of arrangement incentivizes speedy work and cutting corners. As one technician described in a survey of CWA technician members, "contractors rush to get the job done quicker, bypassing safety issues and damage the plant trying to get [work] done quicker and to make more money."[5] CWA technicians have observed problems like contractors hitting lines and causing service outages; contractors installing cable but failing to bury it deep enough, making it easier for the cable to get damaged; and incorrect installation of conduit piping for laying fiber underground so that it is crushed or otherwise unusable.[6] These installation issues affect the longevity of broadband installation and the quality of service for customers.

Many of these companies are not locally based and know that when the shoddy work in the right-of-way is discovered, they will be long gone. For example, improperly handled fiber may work initially, but have a diminished service life that is only apparent years after installation. In one colorful example, over two years after fiber was installed in their neighborhood, a Texas family experienced problems with backed up sewage. They discovered that contractors had installed fiber directly

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[4] In 2018, a Verizon subcontractor in Wisconsin hit a gas line and caused an explosion that killed a volunteer firefighter and critically injured another. In 2019, a Verizon subcontractor in San Francisco hit a gas line and caused an explosion and a three-alarm blaze that burned for hours. Also in 2019, a Crown Castle subcontractor in North Carolina hit a gas line and caused an explosion that killed two people, injured another twenty-five, and destroyed a building including two businesses. In 2021, a Crown Castle subcontractor in Santa Monica hit a gas line that required residents to evacuate and go without power for days while crews fixed the issue. See Communications Workers of America, "Subcontracting in Small Cell Deployment: Who's Doing Work in Our Streets?", https://www.fair5g.org/system/files/cwa_-_telecom_subcontractor_safety_backgrounder_1.pdf; Brennon Dixon, "Broken gas main leaves residents in the dark for days," Santa Monica Daily Press, May 1, 2021, available at https://www.smdp.com/broken-gas-main-leaves-residents-in-the-dark-for-days/204398.

[5] Communications Workers of America, "AT&T's Web of Subcontractors: Building Next Generation Networks with Low-Wage Labor," October 2020, https://cwa-union.org/sites/default/files/20201005attsubcontractorreport.pdf.

[6] Id.

through their sewage lines. In a statement after the problem was discovered, AT&T said they "instruct[their] contractors to follow all necessary procedures to have utilities located."[7] As is evident, additional measures are required to ensure accountability for quality work and that public funds go towards quality infrastructure.

Recommendations

I.   Transparency: Require Applicants to Submit a Workforce Plan

The first step towards ensuring a well-trained quality workforce is requiring potential subgrantees to disclose information regarding how they plan to staff the project and their plan for ensuring a quality workforce. The BEAD program, for example, already requires states to collect certain workforce plan information.[8] We encourage broadband programs to collect information regarding workforce and work conditions as part of the evaluation process for bids, and ensure these plans are considered binding commitments. Broadband programs should ensure ongoing compliance and monitoring of this information throughout the entirety of the funding cycle. Doing so ensures that programs meet the requirements of funding sources, for example, the BEAD program, and ensures that programs have the labor force required for successful deployment.

As part of the initial RFP process, programs should require applicants to provide data regarding their Workforce Plan, including:
   A. Training and Safety - For each job title that will carry out the proposed work, a description of safety training, certification, and/or licensure requirements. Is there a robust in-house training program with requirements tied to certifications, titles, and uniform wage scales? Is there participation in a labor-management apprenticeship program? Is the workforce unionized? Is

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[7] CBS Dallas Forth Worth, "Telecom Fiber Lines the Source of North Texas Homeowner's Plumbing Problems," January 7, 2022, https://dfw.cbslocal.com/2022/01/07/telecom-fiber-lines-texas-homeowner-plumbing-problems/

[8] The BEAD program requires that states evaluate applicants' plans for compliance with labor standards, including information on wage scales and overtime practices for employees involved in construction of the network, and information on workplace safety committees. The BEAD program also requires that applicants describe their plan for ensuring a skilled and credentialed workforce, including whether or not the workforce is unionized and whether the workforce will be directly employed or subcontracted. BEAD NOFO, pp. 56-68, https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf.

there a labor-management health and safety committee on the worksite? How will the applicant ensure that the workforce is appropriately trained?

B. Job Quality - For each job title that will carry out the proposed work, a description of wages, wage scales and minimum wage rates, overtime rates, and benefits. Does the applicant pay prevailing wage?

C. Local Hire and Targeted Hire - Does the applicant have any policies or programs that encourage career pathways and hiring for marginalized communities or the local community, including any programs for women and people of color? What percent of the existing workforce resides in zip codes determined to be relevant by the agency? Will the applicant commit to ensure that a certain proportion of the workforce will reside in relevant zip codes?

D. Accountability and Subcontracting - Will the workforce be directly employed by the applicant? If not, will the applicant subcontract the work to another entity? If the workforce will be subcontracted, the applicant should have to disclose the Workforce Plan for the subcontracted workforce as well and describe how the applicant will ensure the subcontractor is held accountable for labor law compliance and abiding by the commitments in the Workforce Plan.

E. Ongoing Maintenance and Operations - For projects where the applicant will be operating the network after the project is completed, does the applicant have an existing workforce to perform the customer service and operations work? Will that workforce be based locally and directly hired by the employer? If those functions will be outsourced, will any of the jobs be overseas? Will the project support high quality jobs?

A detailed Workforce Plan allows the granting authority to ensure that a well-trained and highly skilled workforce will complete the build, safeguarding the public's investment and ensuring high-quality build while protecting the workforce.

This document has additional language and information on Workforce Plans in the Sample Language sections titled "Requests for Proposals, I. Information Required from Applicants," and "Rulemaking or Ordinances, E. Workforce Plan Data" on pages 18-19, 22-23.

II.   Prioritize Subgrantees that Use High Road Labor Practices

Both the ARPA and IIJA include requirements and recommendations for states and localities in creating broadband programs. For example, the Department of Treasury encourages recipients of ARPA funds to incorporate strong labor standards, wages at or above the prevailing rate, and local hire provisions.[9] In administering the IIJA's BEAD program, the NTIA requires entities to incorporate factors regarding subgrantees' record of labor compliance and plans for labor compliance into their broadband programs, and requires that fair labor practices be incorporated as one of the three primary criteria that states must incorporate into their grading scheme for subgrantees.[10]

> **If programs fail to prioritize labor factors, they effectively create a race to the bottom on wages and work conditions.**

Incorporating robust high road labor practices both ensures that broadband programs meet the federal granting agencies' labor guidelines, and is good policy, supporting safe build, local workforce development, and quality infrastructure that stands the test of time. If programs fail to prioritize labor factors, they effectively create a race to the bottom on wages and work conditions.

When programs don't set a baseline and employers compete by lowering work standards, programs are likely to exacerbate workforce instability, workplace injury, and work stoppages, which ultimately result in decreased productivity and program effectiveness.

Studies of prevailing wage policies demonstrate the virtuous circle of high road employer approaches. Studies find that these policies boost productivity, reduce injury rates, and help address the shortage of skilled labor.[11] Numerous studies find that prevailing wage laws do not increase construction costs, and instead incentivize skilled construction labor to replace less-skilled counterparts, and

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[9] United States Department of Treasury, "Guidance for the Coronavirus Capital Projects Fund," https://home.treasury.gov/system/files/136/Capital-Projects-Fund-Guidance-States-Territories-and-Freely-Associated-States.pdf.

[10] BEAD NOFO, p. 43.

[11] Malkie Wall, David Madland, and Karla Walter, "Prevailing Wages: Frequently Asked Questions," Center for American Progress, https://www.americanprogress.org/article/prevailing-wages-frequently-asked-questions/

capital equipment investments.[12] Prevailing wage standards are also not associated with reduced bid competition, and result in more work being done by local contractors and employees as opposed to crews from out of state.[13]

A grantee's ability to perform the work with a stable well-trained workforce goes towards its operational capacity to perform the work in a cost-effective and expeditious manner, free from labor violations, injuries, or workplace stoppages. Allocating points to high road labor practices overlaps with and mutually supports these considerations of operational capacity and ability to execute a well-planned project.

Allocating points to high road labor practices overlaps with and mutually supports considerations of operational capacity and ability to execute a well-planned project.

In order to ensure high-road labor standards and quality build, programs should include the following factors when evaluating proposals:

A. ***Training and Safety - Prioritizing Robust In-house Training.*** States should include training as a factor in fair labor standards criteria. Programs should allocate points to subgrantees who demonstrate robust in-house training programs with established requirements that are tied to uniform and progressive wage scales, job titles, and certifications or skill codes recognized by the industry.

B. ***Job Quality - Prioritizing Quality Wages and Benefits.*** Congress and the NTIA have made clear that the Bipartisan Infrastructure Law is intended to create high quality jobs with family sustaining wages and benefits.[14] We cannot expect to fix workforce shortage issues or retain a quality workforce unless we prioritize high quality jobs. Programs should grant a higher point value to applicants who provide higher wages and benefit packages. By incentivizing applicants to provide quality wages and benefits, programs support good

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[12] Kevin Duncan, "What the Research Tells Us About the Costs and Benefits of Prevailing Wage Laws," Submitted to the Montana State Legislature, p. 3. https://leg.mt.gov/content/Committees/Interim/2021-2022/Local-Gov/21_Nov/DuncanReport_MontanaPrevailingWageStudy2021.pdf (reviewing the prevailing wage literature).
[13] Id.
[14] The Department of Labor has also published materials supporting the importance of good jobs. "Good Jobs Initiative," Department of Labor, https://www.dol.gov/general/good-jobs/principles.

jobs in the community, a sustainable workforce in the long-term, and low turnover and quality build. Requiring subgrantees to pay prevailing wage is also an effective way to protect against depressed wages, and the retention and training issues that stem from low wages.

C. *Local Hire and Targeted Hire – Prioritizing a Locally Based Workforce.* The broadband workforce is increasingly mobile, and often the workers installing networks are from many states away. When problems arise, the workers are long gone and the project has failed to invest in building local capacity to maintain the network. In order to promote the local workforce that will be necessary to maintain networks and to stimulate the local economy, programs can allocate a higher point value to applicants that will perform broadband deployment, installation, and maintenance work using a locally based workforce, as defined by certain regions or zip codes, and applicants with policies to promote the hiring of locally based workers.

D. *Accountability and Subcontracting – Prioritizing a Directly Employed Workforce.* Like many industries, the telecommunications sector is increasingly "fissured" or subcontracted.[15] Subcontracting creates problems for reliability and quality of service and undercuts workers rights because the lead company is not accountable for much of the conduct of its subcontractors. In a survey of CWA technician members at AT&T, respondents consistently reported problems with the quality of contractor work, including problems leading to higher costs (96%), service quality issues (81%), and safety risks (57%).

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When work is contracted out, the lead firm is often unable to ensure the same level of quality and the financial incentives create circumstances for shoddy work. Subcontracting is also associated with lower labor standards

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[15] David Weil, *The Fissured Workplace: How Work Got So Bad for So Many*, Harvard University Press, 2014.

and job quality.[16] Programs can counter these low road practices and support job quality by prioritizing subgrantees that will use a directly employed workforce for broadband deployment, installation, maintenance, and customer support and sales. By allocating points to applicants that will perform relevant work with a directly employed workforce, programs ensure that subgrantees are accountable for work conditions and training, and encourage creation of quality local jobs.

E. *Ongoing Maintenance and Operations - Prioritizing Good Jobs.* In order to serve the public for years to come, networks require ongoing staff to handle installations, maintenance, and customer service operations. Programs should prioritize subgrantees that have a directly hired, locally based workforce in high quality jobs for ongoing network operations.

This document has additional language and information on prioritizing high road labor practices in the Sample Language sections titled "Requests for Proposals, II. Evaluation Criteria" and "Rulemaking or Ordinances, I. Prioritizing High Road Labor Practices" on pages 19-22.

III. Give Labor Factors Substantial Weight in Grading Schemes

Localities and states won't see the benefits of incorporating high road labor practice factors unless these factors are given a substantial weight. What proportion is appropriate will depend on program design, but the NTIA's BEAD program provides one example. The NTIA lays out three primary criteria that states must include in their grading schemes: program outlay, affordability, and fair labor practices. These primary factors together must encompass at least 75% of the weighting metrics for evaluating subgrantees.[17] NTIA requires states to give fair labor practices "substantial points or credits," and allocating 25% of the total point distribution to fair labor practices would meet this requirement.

> NTIA requires states to give fair labor practices "substantial points or credits."

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[16] National Employment Law Project, "Who's the Boss: Restoring Accountability for Labor Standards in Outsourced Work," https://www.nelp.org/publication/whos-the-boss-restoring-accountability-for-labor-standards-in-outsourced-work/.
[17] BEAD NOFO, p. 43.

Stakeholders should understand that labor standards aren't at odds with other considerations: workforce considerations are part and parcel of program effectiveness. Prevailing wage policies demonstrate the way that high road labor practices are aligned with concerns of program effectiveness. Studies of prevailing wage in practice show that such policies boost productivity, reduce injury rates, and help address the shortage of skilled labor.[18] Numerous studies indicate that prevailing wage laws do not increase construction costs, instead incentivizing capital equipment investments and the use of more skilled construction labor.[19] By promoting sustainable labor practices, programs promote productivity and the skilled workforce necessary for a project to proceed smoothly.

> Stakeholders should understand that labor standards aren't at odds with other considerations: workforce considerations are part and parcel of program effectiveness.

Effective labor practices are a part of the operational, managerial, and technical capacity that applicants will need to have in order to properly execute publicly funded broadband projects. If programs fail to include labor standards as part of their evaluation systems, and emphasize program outlay to the detriment of other factors necessary for program success, they create a race to the bottom among subgrantees that will ultimately result in decreased productivity and program effectiveness.

This document has additional language on weighting labor factors in the Sample Language sections titled "Requests for Proposals, II. Evaluation Criteria" and "Rulemaking or Ordinances, I. Prioritizing High Road Labor Practices, Subpart B" on pages 19-20, 22.

IV.   Make it Matter: Enforceable Commitments and Accountability

In order to make any prioritization factors and plan data meaningful, programs must hold subgrantees accountable. When subgrantees make commitments in their

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[18] Malkie Wall, David Madland, and Karla Walter, "Prevailing Wages: Frequently Asked Questions," Center for American Progress,
https://www.americanprogress.org/article/prevailing-wages-frequently-asked-questions/
[19] Kevin Duncan, "What the Research Tells Us About the Costs and Benefits of Prevailing Wage Laws," Submitted to the Montana State Legislature, p. 3.
https://leg.mt.gov/content/Committees/Interim/2021-2022/Local-Gov/21_Nov/DuncanReport_MontanaPrevailingWageStudy2021.pdf

Workforce Plan around the labor practices they will use, these should become binding legal commitments enforced through the grant contract. Programs should ensure that the Workforce Plan and reports on how a subgrantee is executing the Workforce Plans are made publicly available, ideally through an online portal. Public disclosure of Workforce Plan information also assists in enforcement. If information is readily available, for example, through a website, the public and workforce intermediaries are able to be allies in ensuring compliance with labor commitments. As such, information submitted as part of the Workforce Plan should be public information not subject to any proprietary exceptions for purposes of public records law.

Public disclosure of Workforce Plan information also assists in enforcement.

For the BEAD program, as outlined by the NTIA, an eligible entity that takes the approach of including additional factors as binding commitments can modify other aspects of the baseline fair labor standards criteria, meaning that states that incorporate additional binding commitments can lessen requirements in other areas and tailor the criteria for their state's needs.[20]

This document has additional language on enforceability in the Sample Language sections titled "Requests for Proposals, III. Workforce Plan Reporting" and "Rulemaking or Ordinances, I. Prioritizing High Road Labor Practices, Subparts C–G" on pages 21, 22–23.

V. Workforce development and high quality jobs go hand-in-hand

Many programs are considering how they can support workforce development in the broadband sector. The NTIA, for example, requires states to describe their plans for ensuring a highly skilled workforce, and BEAD funds can be used for workforce training and development, giving states the ability to support training tied to high quality jobs.[21]

Prioritizing high quality jobs is itself a workforce development strategy and supports multiple goals around sustainable workforce development.

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[20] BEAD NOFO, p. 56.
[21] BEAD NOFO, p. 59.

Workforce development must be tied to support for high quality jobs. As recognized by diverse organizations, including the Aspen Institute, we have a job quality crisis. Forty-four percent of workers, meaning 53 million workers in America, are employed in poor quality jobs with low hourly wages.[22] This is true in the broadband sector, where subcontracting has lowered standards and workers commonly face risks like misclassification as independent contractors, focus on speed over safety, and inadequate pay and benefits.[23] We can create new jobs, but sustainable workforce planning will only happen when we create *high quality* jobs that retain diverse workers.

Prioritizing high quality jobs is itself a workforce development strategy and supports multiple goals around sustainable workforce development. Labor practices like direct employment, locally based workforce, targeted hire of marginalized communities, and quality wages and benefits combat wage stagnation and support worker retention in the industry. When programs raise the

> When programs raise the floor through supporting high road labor practices, they incentivize these practices among actors in the broadband market.

floor through supporting high road labor practices, they incentivize these practices among actors in the broadband market. For example, a recent Wall Street Journal article describes a telecommunications company that has insourced a portion of its fiber splicing work that was previously done by contractors, in order to promote a stable workforce in anticipation of increased federal funding.[24] Freestanding workforce development programs can be valuable, but program design itself can also serve to promote high road labor practices and sustainable workforce development.

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[22] "Why Job Quality?" Aspen Institute, November 15, 2021, https://www.aspeninstitute.org/blog-posts/why-job-quality/; Maureen Conway, Jeannine LaPrad, Amanda Cage, Sarah Miller, "To Build Back Better, Job Quality Is the Key," Aspen Institute, https://www.aspeninstitute.org/publications/to-build-back-better-job-quality-is-the-key/.
[23] CWA, "AT&T's Web of Subcontractors: Building Next Generation Networks with Low-Wage Labor," October 2020. https://cwa-union.org/sites/default/files/20201005attsubcontractorreport.pdf
[24] Will Feuer, "The U.S.'s $42.5 Billion High-Speed Internet Plan Hits a Snag: A Worker Shortage," The Wall Street Journal, April 23, 2023.

VI.   Prioritize scalable, sustainable, future-proof fiber technology

Public funds are most effectively directed towards future-proof technology that can perform well on speed, latency, reliability, and consistency. Almost universally, this will mean prioritizing end-to-end fiber-optic architecture. As noted by the NTIA, fiber technology ensures that networks can "easily scale speeds" to "meet the evolving connectivity needs of households and businesses" and "support the deployment of 5G, successor wireless technologies, and other advanced services."[25]

> Policymakers should educate themselves on the different technologies available in order to meaningfully engage with industry claims regarding technology.

Policymakers should educate themselves on the different technologies available in order to meaningfully engage with industry claims regarding technology. For example, industry claims regarding the cost of fixed wireless benefit should be scrutinized. While in many circumstances fiber has higher upfront capital costs than fixed wireless, the total cost of ownership over 30 years is comparable for fiber and fixed wireless, with fiber providing a much higher quality service.[26] For a fixed wireless network, on average 40 to 80% of the capital investment needs to be replaced every five years, which adds up to a large cumulative capital cost. In contrast, 1 to 8% of the capital cost of a fiber network needs to be replaced every ten years.[27] Armed with this knowledge, policymakers can see that simplistic claims that fiber isn't cost effective in a given rural area, for example, merit further analysis. Even basic

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[25] BEAD NOFO, p. 42

[26] An engineering analysis of fixed wireless technologies by consulting firm CTC Technology and Energy concludes that "fiber represents the most fiscally prudent expenditure of public funds in most circumstances because of its longevity and technical advantages" and includes models of estimated costs over the lifetime of the technology. CTC Technology, "Fixed Wireless Technologies and Their Suitability for Broadband Delivery," June 2022, p. 51.
https://www.benton.org/sites/default/files/FixedWireless.pdf.
Fixed wireless technologies will continue to improve but will not match the performance of fiber optic networks. Fixed wireless network coverage is adversely affected by line-of-sight obstructions (including buildings and seasonal foliage) and weather. Unlike a fiber network, fixed wireless networks have scalability challenges due to limited availability of spectrum, the need for frequent technology upgrades, and the need to install additional antennas at both customer premises and base stations. An estimated 40 to 80 percent of a fixed wireless network's capital investment needs to be replaced every five years. The fastest fixed wireless technologies (such as those that use millimeter-wave spectrum) are largely unsuitable for serving rural communities because of the typical geographic dispersion of addresses and the lack of mounting structures (such as towers or building rooftops).

[27] Id., p. 33, 42.

familiarity can pay enormous dividends in policymakers' ability to confront industry claims.

Fiber is also a sustainable and renewable choice. It offers greater capacity and lower energy consumption, predictable performance, lower maintenance costs due to fewer truck rolls, and a longer technological lifetime than other technologies.[28]

Programs can consider prioritizing fiber to the premises service, 1 gigabit symmetrical service, or service that is scalable beyond the initial maximum speeds offered to accommodate future increases in bandwidth. For the BEAD program, states will operationalize fiber preference by crafting an "Extremely High Cost Per Location Threshold."[29] In crafting state plans, CWA encourages states to consider studies around the long-term value of fiber and follow NTIA's recommendation to set the Extremely High Cost Per Location Threshold as high as possible to help ensure that end-to-end fiber projects are deployed wherever feasible.

This document has additional language on fiber technology in the Sample Language section titled "Rulemaking or Ordinances, II. Resilient and Scalable Networks" on pages 23-24.

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[28] Communications Workers of America, "Fiber: The Greenest Technology," https://drive.google.com/file/d/1RMFoa5i_5N0d5L6gvzu6GUH9QMjIX7Mt/view?usp=sharing.
[29] BEAD NOFO, p. 13, fn 6.

Sample Language

Below we provide language that may be useful as your community crafts its requests for proposals, or engages in rulemaking or updating statutes in preparation to fund broadband projects. Each project is unique, and we are happy to discuss adapting high-road principles for your community's goals and circumstances.

Requests for Proposals

I.   Information Required from Applicants

Applicants should demonstrate that they have the operational, financial, and managerial expertise to effectively perform the contract. [. . .]

A.   Applicants should submit a Workforce Plan that describes how the applicant will ensure safe, effective, and timely project execution. Describe how the applicant will ensure compliance in its own labor and employment practices, as well as that of any contractors and subcontractors. The plan shall include the following information:
1.   Safety and Training - A description of how the applicant will ensure that the workforce is properly trained to conduct the work safely and effectively, including a description of training, certification and/or licensure requirements for each job title, a description of any in-house training program and whether or not training is tied to certifications, titles, and uniform wage scales. Does the applicant participate in a labor-management apprenticeship program? If so, describe the program requirements. Is there a labor-management health and safety committee on the worksite? If so, describe how the committee operates and its composition.
2.   Job Quality - A description of wage scales and minimum wage rates, overtime rates, and benefits for each job title that will carry out the proposed work. For each job title, an estimate of the number of workers or work hours required and the entity that will employ the workforce. Does the applicant have experience on projects with prevailing wage requirements? Does the applicant commit to pay prevailing wage for this project?

3. Accountability and Subcontracting – Will the workforce be directly employed by the applicant? If not, will the applicant subcontract the work to another entity? If the workforce will be subcontracted, describe how the applicant will ensure that the subcontractor will be accountable to the commitments in the Workforce Plan as described in the application.

4. Local Hire and Targeted Hire – Does the applicant have any policies or programs that encourage career pathways and hiring for marginalized communities or the local community, including any programs for women and people of color? What percentage of the existing workforce resides in [zip codes deemed relevant by the agency]? Will the applicant commit to [at least 75%/a percentage] of the workforce residing in [zip codes deemed relevant by the agency]?

a. Ongoing Network Operations – For projects where the applicant will operate the network, does the applicant have an existing workforce to perform the customer service and operations work? Will that workforce be based locally and directly hired by the employer? If those functions will be outsourced, will any of the jobs be overseas? Describe the wage scales, minimum wage rates, and benefits this workforce will receive.

II. Evaluation Criteria

The Agency will evaluate eligible project applications based on the following criteria:

[. . .]

A. Fair Labor Practices (up to 25 percent)
Applicants will be evaluated on their record of labor compliance and their plans to ensure ongoing labor compliance.

1. Ongoing labor compliance (20 percent)
An application that proposes more robust standards to ensure and promote ongoing labor compliance will receive greater credit.
a. Safety and Training – An application that describes a more comprehensive in-house training program, for example, a program tied to certifications, titles, and uniform wage scales and/or

participation in a labor-management apprenticeship program, will receive greater credit.

    b. Job Quality – An application that describes higher wages and more robust benefits will receive greater credit.

    c. Accountability and Subcontracting – An application that commits that a greater proportion of the broadband deployment workforce will be directly employed by the applicant will receive greater credit.

    d. Local Hire and Targeted Hire – An application that describes more robust local hire and targeted hire practices, for example, committing that [at least 75%/a percentage] of the workforce will reside in [relevant zip codes] and/or describing policies or practices that promote career pathways and hiring for marginalized communities or the local community, will receive greater credit.

    e. Ongoing Network Operations – An application that describes more robust high road practices for the workforce that will perform ongoing customer service, installation, and maintenance work, for example, good jobs, a locally based workforce, and/or a directly hired workforce, will receive greater credit.

2. Demonstrated record of labor compliance (5 points)
An application that demonstrates a record of commitment to ensuring labor compliance will receive credit.

    a. Describe the applicant's historical use of contracting and subcontracting arrangements including staffing plans. Describe the contractors and/or subcontractors the applicant will use on this project, if any. For the applicant and all contractors and subcontractors which it will engage in the project, provide a description of instances in which the entity has been found to have violated federal and state labor and employment laws for the preceding three years and a description of active litigation under federal and state labor and employment laws. "Federal and state labor and employment laws" includes the Fair Labor Standards Act, the Occupational Safety and Health Act, Title VII of the Civil Rights Act of 1964, and [state labor laws]. If additional contractors are added after the application period, grantees should be required to submit the same information for each additional contractor.

    b. For the applicant and any contractors or subcontractors, provide certification from an Officer/Director-level employee (or equivalent) evidencing the above.

III. Workforce Plan Reporting

Following an award, the Workforce Plan shall be incorporated as a material condition of the contract with [Agency]. Applicant shall submit on a [regular/quarterly/frequency determined by Agency] basis an updated version of the Workforce Plan required in [Section I] and a description of how the applicant is executing the workforce plan, including but not limited to: (a) The job titles and size of the workforce (FTE positions) performing the work under the contract; (b) For each job title required to carry out the proposed work, a description of (1) minimum wages, benefits, applicable wage scales including overtime rates and a description of how wages are calculated; (2) safety training, certification, and/or licensure requirements; (3) a description of job training, certification or licensure required to perform the work and certification that the workforce performing the work has the required training or licensures; (4) the entity employing the workforce in each job title. Information submitted as part of the Workforce Plan will be public information not subject to any proprietary exceptions for purposes of public records law and may be shared publicly by the Agency.

Rulemaking or Ordinances

I. Prioritizing High Road Labor Practices

   A. In developing and adopting rules for [Broadband Grant Program], [Agency] shall prioritize applicants in accordance with the following:
      1. Demonstrated commitment by the applicant to robust training programs with requirements that are tied to titles, uniform wage scales, and skill codes recognized in the industry and to require OSHA safety training.
      2. Use of a directly employed workforce, as opposed to a subcontracted workforce, to perform the contracted work. Public entity applicants may meet this criterion by use of a directly employed workforce or committing to contract with an internet service provider that will use a directly employed workforce.
      3. Demonstrated commitment that the workforce performing the work will receive high quality wages and benefits.
      4. Demonstrated commitment to retaining a locally based workforce and/or establishing programs to promote training and hiring pipelines

for underrepresented communities, and commitment to continuing such;

5. Having a robust record of compliance with labor and employment laws, including but not limited to the Occupational Safety and Health Act, Fair Labor Standards Act, Title VII of the Civil Rights Act of 1964, the [State] Labor Code, and any other applicable labor or employment laws, for the preceding 5 years, or have mitigated violations with labor compliance agreements and measures to ensure future labor compliance.

B. In projects funded by the Broadband, Equity, Access, and Deployment (BEAD) program, the criteria in subpart A shall receive a substantial point allocation in the point scheme for project applications, such that the criteria in subpart A and the "Fair Labor Practices" criteria as defined in the NTIA's Notice of Funding Opportunity published on May 13, 2022 regarding the BEAD Program, shall together constitute at least 25 points of the evaluation scheme, out of 100. In projects not funded by the BEAD program, the criteria in subpart A shall receive a substantial point allocation, constituting at least 15 points.

C. Applicants' disclosures responding to the criteria in subpart A shall be publicly available on the [Agency] website and shall become enforceable, certified commitments and conditions of the grant.

D. Projects funded by the [Broadband Grant Program] shall be subject to prevailing wage requirements as set out in [relevant state statute section].

E. Workforce Plan Data

1. Participants in the program shall be required to provide in [regular/quarterly/frequency determined by Agency] reports:
   a. Whether the workforce will be directly employed by the grantee/ISP or whether work will be performed by a subcontracted workforce;
   b. The entities that the contractor plans to subcontract with in carrying out the proposed work, if any;
   c. The job titles and size of the workforce (FTE positions) required to carry out the proposed work over the course of the project;
   d. For each job title required to carry out the proposed work, a description of
      i. Wages, benefits, applicable wage scales including overtime rates and a description of how wages are calculated;

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ii.   Any in-house training program, including whether the training program is tied to titles, uniform wage scales, and skill codes recognized in the industry;

iii.   Safety training, certification, and/or licensure requirements, including whether employees are required to have completed OSHA safety training or any training required by law;

iv.   The entity employing the workforce in each job title.

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e.   Any other Workforce Plan information as determined by the Agency.

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2.   Following an award, the Workforce Plan and the requirement to submit ongoing workforce reports shall be incorporated as material conditions of the contract with [Agency] and become enforceable, certified commitments. [Agency] will conduct regular reviews to assure compliance and take appropriate measures for enforcement.

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F.   Public Agencies. In the event the successful applicant is a public agency, the public agency will be subject to the requirements of this section regardless of its public agency status, including as to any further subgranting the public agency conducts, consistent with the contracting requirements of the public agency.

G.   Failure to meet requirements or falsification of data. In the event that successful applicants fail to meet the Program Requirements or Workforce Plan Data requirements, or otherwise falsify information regarding such requirements, [Agency] shall investigate the failure and issue an appropriate action, up to and including a determination that the applicant is ineligible for future participation in the [Broadband Grant Program].

II. Resilient and scalable networks

A.   The [Agency] shall design programs in accordance with the following: public investments should go towards networks that are reliable, resilient, and scalable in accordance with the rapidly increasing demand for bandwidth; end-to-end fiber technology is the superior choice in order to easily scale speeds over time, meet the evolving connectivity needs of households and businesses, and support the deployment of evolving wireless technologies and other advanced services.

B.   Evaluating projects

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a.   In designing its broadband funding programs and creating point schemes to evaluate projects and subgrantees, [Agency] shall

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prioritize projects that are able to reliably meet or exceed 100 mbps symmetrical speeds, and further give additional priority to projects that are capable of delivering gigabit symmetrical speeds. [Agency] shall also consider the scalability of the project's technology and infrastructure beyond the project's current maximum speed offering for future increases in bandwidth.

b. The [Agency] shall fund projects using non-fiber technologies only in situations where fiber-optic architecture would be physically impossible based on geography or topography or excessively financially burdensome. Such projects must obtain a waiver from [Agency], and provide an explanation regarding cost and technical feasibility to the satisfaction of [Agency]. [Agency] may grant waivers limited to specific locations or parts of projects.

c. [Agency] shall set the Extremely High Cost Per Location Threshold as laid out in the BEAD program consistent with the requirements of this section.