

**Before the
United States Department of Commerce
National Telecommunications and Information Administration
Washington, D.C. 20230**

In the Matter of)	
)	Docket No. 220105–0002
)	
Infrastructure Investment and Jobs Act Implementation)	<i>Regs.gov</i> Docket No.
)	NTIA– 2021–0002
)	

COMMENTS OF THE QUILT & INTERNET2

On behalf of the U.S. research and education (R&E) networking community, The Quilt and the University Corporation for Advanced Internet Development (d/b/a Internet2) respectfully offer these comments in response to the National Telecommunications and Information Administration (NTIA) January 10, 2022, request for comments (RFC) on the agency’s implementation of certain broadband provisions in the bi-partisan Infrastructure Investment and Jobs Act (IIJA).¹ At the outset, the R&E networking community applauds NTIA’s leadership in recent years, regularly convening broadband stakeholders at the state level to share stories, experiences, and best practices. These efforts have placed NTIA’s current work implementing the IIJA on a sound footing and The Quilt and Internet2 welcome the continuation of this two-way process of listening and learning.

1. About U.S. R&E Networks

Non-profit U.S. R&E networks (RENs), including Internet2 and The Quilt, a coalition of 40 regional and state networks, have a distinct and vital role in our country’s internet landscape.² RENs operate

¹ 86 Fed. Reg. 1122, <https://www.govinfo.gov/content/pkg/FR-2022-01-10/pdf/2022-00221.pdf>; see also Infrastructure Investment and Jobs Act of 2021, Pub.L. 117-58 (2021).

² See <https://www.thequilt.net/about-us/the-quilt-participants/>. Individual R&E network websites may be accessed through this webpage for more information about each R&E networking organization.

private non-profit statewide mission-driven networks that collectively deliver specialized high-capacity data and related services to over 100,000 higher education institutions, K-12 schools, public libraries, cultural institutions, research centers, local/state governments, hospitals/healthcare organizations, and other community anchor institutions (CAIs) across the country.³ These RENS interconnect with our country's national research and education network (NREN), Internet2⁴, and other federal agency mission-driven science networks.

In addition to providing high-capacity advanced network services, internet access, and related services to CAIs across their states, RENS serve in a key role of trusted convener across community and state broadband stakeholders. Most RENS own or control, through leasing or indefeasible rights of use (IRUs), their own middle-mile and some last-mile network infrastructure. RENS across the states and regions connect at the national level to Internet2, which operates the nation's premier publicly available NREN.

By nature, RENS play a vital and expansive role in their respective broadband landscapes. RENS work at the community, state, and national levels to contribute their technical expertise, mission-driven collaborative spirit, and community leadership roles and work opportunistically with member institutions and a wide range of partners to deploy broadband infrastructure to unserved areas. RENS are key partners to federal agencies and their respective infrastructures such as the National Science Foundation, the Department of Energy's Energy Science Network, the National Oceanic and Atmospheric Administration's N-Wave Network, NASA, and others for academic and scientific discovery. RENS also actively participate in federal programs that provide resources to improve technology infrastructure that enables scientific

³ For a map of U.S. RENS, please visit <https://www.thequilt.net/quilt-maps/>.

⁴ For more information about Internet2, please visit <https://www.internet2.edu/>.

discovery, furthers the country's academic enterprise, and facilitates improved broadband connectivity to CAIs such as the Federal Communication Commission's (FCC) E-rate and Rural Health Care programs.

Our R&E networking community welcomes this opportunity to comment on implementation of this historic legislation. We believe RENS' effective partnerships with for-profit providers, our advanced networking expertise, and the diversity of roles we play in the broadband ecosystem make our perspectives on this notice to be both unique and valuable.

2. General Questions

a. Bringing Reliable, Affordable, High-Speed Broadband to All Americans

Question #1: One of the most important steps that NTIA can take to ensure that the bipartisan infrastructure law's broadband programs meet their goals with respect to access, adoption, affordability, digital equity, and digital inclusion is to ensure that state administered programs do not prohibit or restrict any of the eligible entities called out in the IJJA from participating in the grant process.²

Question #3: Regarding transparency and public accountability, NTIA should require states and territories ("states") to tie disbursements to grant subrecipients (those entities that receive sub-awards) to objective project progress metrics. Grantees should be required to semi-annually report these metrics to NTIA for national progress reporting. This will help promote transparency and accountability for IJJA broadband expenditures.

² The IJJA specifies that eligible entities in the Middle-Mile program include a "State, political subdivision of a State, Tribal government, technology company, electric utility, utility cooperative, public utility district, telecommunications company, telecommunications cooperative, nonprofit foundation, nonprofit corporation, nonprofit institution, nonprofit association, regional planning counsel, Native entity, or economic development authority" or a partnership of two or more of the above. See IJJA Section 60401(a)(4). While the states are the sole eligible entities for purposes of the Broadband Equity, Access, and Deployment (BEAD) program, see Section 60102(a)(2)(F), NTIA should make clear that, in selecting subgrantees in the BEAD program, states must not exclude any of the eligible entity types identified in Section 60401(a)(4), provided they have the "technical and operational capability to provide the services promised in the subgrant." See Section 60102(g)(2)(A).

Question #4: One way that NTIA can help ensure that IJA funding is used efficiently is to require State Broadband Plans to present a comprehensive and holistic view of recent broadband projects being implemented across all local, state, and federal programs. This would include, but not necessarily be limited to, projects funded through local or state initiatives, the Coronavirus Capital Projects Fund, and the Coronavirus State and Local Fiscal Recovery Fund (CSLFR) (Sections 602, 603, and 604 of the American Rescue Plan Act of 2021 (ARPA) administered by the Department of Treasury).

b. Supporting States, Territories, and Sub-Grantees to Achieve the Goal

Question #6: Quilt members have extensive experience participating in, and conducting, large scale competitive procurements for broadband and telecommunications equipment and services. This includes participation in the FCC's E-rate and Rural Health Care universal service programs which require "fair and open" competitive bidding, and also require adherence to state procurement rules where applicable. Quilt members generally believe states should be allowed (and perhaps required) to follow their own state or local competitive procurement rules. However, we also believe NTIA should require that all states at a minimum employ a formal "request for proposals" (RFP) in seeking sub-grantees, regardless of whether state rules require an RFP. We further would urge NTIA to require states to make the RFP responses public documents to the maximum extent possible, perhaps excluding only the detailed financial responses but including any total costs, service area maps, technical solutions and business plan objectives in public documentation.

Question #7: As consortium purchasers of broadband and telecommunications services, RENS have long participated in public/private partnerships with a range of partners, from national and small rural providers, to state departments of transportation, rural electric cooperatives, and tribal governments. Encouraging such partnerships was a key aspect of the successful Broadband Technology

Opportunities Program (BTOP) projects that Internet2 and many Quilt members participated in during the last large round of NTIA broadband infrastructure funding.

To ensure a high degree of competition in the granting by the states of sub-awards in the IJA broadband programs, RENs strongly believe that all provider types with the technical ability to deliver needed services should be allowed to participate in the competitive processes leading to sub-awards. To this end, each state should be required to publish a list of eligible entity-types in advance and have that list subject to NTIA review and approval. NTIA should also provide for a losing-bidder challenge process for NTIA to review state criteria and RFP evaluation and award.

Question #8: Because unique geographic conditions and topologies often span across state boundaries, multiple states can share similar or identical challenges. The four-corners area of the southwest and the northern tier states provide examples of this. We recommend that NTIA's proposal review criteria for the Middle Mile Broadband Infrastructure (MMBI) grant program recognize the importance of multi-state consortia. Well-designed multi-state projects will provide opportunities for greater economies of scale and other efficiencies than if each state addressed them on their own. Also, we suggest NTIA find ways to encourage states to consider multi-state consortia grant proposals to address such common challenges for the programs and grants that they will administer. In these instances, states may need to call upon NTIA for assistance in reviewing multi-state consortia proposals.

In addition, NTIA should take notice of the Treasury Department's Final Rule for the Coronavirus State & Local Fiscal Recovery Fund (CSLFR), which acknowledged that a regional, "holistic" approach for broadband projects was necessary in some cases to make delivering ubiquitous broadband service to all

households and businesses economical.³ Implicit in the CSLFR Final Rule is the recognition that some overbuilding of existing plant might be necessary to meet the larger goals of the program.

Question #9: Concerning the sources of required match funding, NTIA should be flexible, allowing matching funds within a proposal to come from sub-recipients and partners of the primary applicant. This is particularly important for the non-profit and government participants that Congress explicitly included in the IJJA NTIA broadband programs. If a funded recipient is unable to complete its proposal obligations or sustain its business model, any entity that takes over these assets should be required to adhere to the same terms and conditions of the program that funded the infrastructure, specifically including but not limited to open access and interconnect requirements and agreements.

c. Ensuring the Future of America is Made in America by All of America's Workers

Question #10: Ongoing supply-chain issues can be expected to impact IJJA project timelines and NTIA rules should expressly recognize documented instances of these as “extenuating circumstances” allowing extension of statutory deadlines for deployment.⁴ NTIA rules should then establish (or require) a process for seeking no-cost extensions by projects in good-standing where supply-chain issues can be documented as a significant cause of the delay. NTIA should similarly consider well-documented workforce challenges as a valid extenuating circumstance warranting extensions. In addition, however, NTIA should require states to address these constraints in their five-year action plans and describe how they plan to help sub-awardees mitigate the challenges associated with them.

³ See CSLFR Final Rule, at 302-303 (rel. Jan. 6, 2022) (Federal Register publication pending) (“Households and businesses with an identified need for additional broadband infrastructure investment do not have to be the only ones in the service area served by an eligible broadband infrastructure project. Indeed, serving these households and businesses may require a holistic approach that provides service to a wider area, for example, in order to make ongoing service of certain households or businesses within the service area economical.”), <https://home.treasury.gov/system/files/136/SLFRF-Final-Rule.pdf>.

⁴ See IJJA § 60102(h)(4)(C) and § 60401(e)(5).

Question #11: NTIA’s rules should require states, as part of their required five-year action plans, to address workforce development plans related to broadband. Immediate and significant workforce development efforts focused on broadband networks can help ensure American workers are available to construct and operate new broadband networks and facilities. States should be encouraged and incentivized to partner with their public education institutions, including technical and community colleges, on workforce development programs. We encourage program rules that expressly recognize the importance of public access to the internet at public-service institutions such as libraries, schools, community colleges, community centers, and other CAIs.

Question #12: While RENs fully support the “Buy American” requirements in the IJJA, we are concerned that strict enforcement of these provisions may exacerbate supply chain problems. We therefore support a reasonable and streamlined exception or waiver process for these requirements.

2. Broadband Equity, Access, and Deployment (BEAD) Program

a. Ensuring Publicly Funded Broadband Networks That Sustain and Scale

Question #13: NTIA should require service providers seeking to be grant recipients or sub-recipients to provide samples of actual performance metrics reflected in their current deployments. NTIA should also encourage states to ask for submissions from grant applicants specifically addressing network design and resiliency. Does the provider have a “headroom” policy for bandwidth availability, segmentation, and augmentation in its last-mile, middle-mile and backbone networks? Does the provider have standards for resolution in cases of packet errors or loss? Will the proposed last-mile network have temporary battery or indefinite generator backup power? Does the design lend itself to total outages or partial outages in neighborhoods when a cable/fiber is cut? Does it lend itself to rapid restoration after storm damage or natural disaster? Does the design create single points of failure? NTIA should provide technical assistance and templates to states to help ask these questions and provide evaluation criteria examples they could use in their RFP processes.

Question #14: Regarding ensuring sustainability of grant-funded networks and the affordability of their services, NTIA should require proposed projects to provide an 8-10-year business plan for sustainability that includes a capital refresh plan. This could be based on sustainability modeling in prior NTIA programs. In order to ensure that funded programs provide affordable options to households, NTIA should consider adopting similar components of the CSLFR final rules of affordability such that last-mile providers must participate in the FCC's Affordable Connectivity Program and provide at least one low-cost solution that does not impose data caps.⁵

Ultimately, NTIA has an important coordinating, convening, and technical assistance role to play helping ensure state broadband leaders have the tools they need to be both successful and visionary as they undertake this historic effort.

Question #15: To ensure maximum scalability and future proofing, NTIA should allow states to set forward looking standards in addition to the minimums prescribed by Congress. For example, NTIA should explicitly recognize that CAIs, businesses, and places of assembly will require much greater capacity for internet access as well as other services such as transport or fiber leases far beyond the minimums set for individual residential subscribers over time. NTIA should require states to ask questions and include criteria for both the current and future needs of grant applicants for all different types of network end-users within the proposed service area. NTIA can provide states with templates and technical assistance to help them meet these needs.

Grant recipients should be required to provide a technology roadmap for how they plan to scope their networks to meet demand in 5, 10, and 20 years after its initial deployment. States should be encouraged to provide higher scores to proposals that have more comprehensive open capacity roadmaps.

⁵ See CSLFR Final Rule, at 308-09.

b. Allocation and Use of BEAD Funds to Achieve Universal, Reliable, Affordable, High-Speed Broadband

Question #16: With respect to broadband projects that are planned or underway through other federal or state funding programs, NTIA should require their likelihood of completion to be assessed using timelines consistent with BEAD timelines (four years). NTIA should encourage states to consider past performance of prior public service commitments from providers for line extension, service upgrades, or service expansion before deprioritizing projects that plan to offer higher quality services in an incumbent's existing service area. The promise of an upgrade should not, on its own, cause a state to not pursue superior services. NTIA should allow states to verify a provider's claim that an upgrade and/or expansion is underway by requiring verification of approved capital budgets, sharing of designs, examples of materials inventory for the work, etc. States should be encouraged to require binding commitments to complete such projects, including financial penalties equal to the cost of completing the IJJA-funded overbuild that would therefore be deferred.

Question #17: In addition to the well-recognized cost challenges facing geographically remote, topographically complex, and low population areas, NTIA may also wish to consider whether lack of underground conduit infrastructure in certain urban areas may be a relevant "high cost" criterion.

Question #18: Because of the wide variety of challenges that states will face addressing their broadband needs, RENS strongly support NTIA designating additional eligible uses of BEAD funding. We recommend allowing states and grant subrecipients to use up to 5 percent of funds to support project management, technical assistance, stakeholder engagement, public communications, collaboration, and sustainability during the program administration.

We strongly recommend that priority be assigned to those grant proposals that connect CAIs with not only the minimum of 1 Gbps internet connection but also include plans to scale to these institution needs over time.

In addition, NTIA should allow for BEAD funds to address digital equity across higher education institution campuses within the states and territories, including community colleges, Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), and other Minority Serving Institutions (MSIs). Major research universities have for decades benefited from world-class broadband infrastructure; they are in many ways first-generation internet citizens, having helped create the internet itself. This includes the concepts and systems that made the internet so ubiquitous and increasingly capable as it spread from defense department labs to supercomputing centers to campuses and to residence halls, long before first-generation broadband reached the home. With their leading broadband infrastructure, these institutions have led a generation of discovery and change through their connectivity to RENs and Internet2. But this work is uneven and remains incomplete. In many states, RENs are either poorly funded or financially out of reach for numerous institutions, or they are unable to provide equitable services to the hardest-to-reach communities. The preponderance of community colleges, MSIs, and colleges and universities still lack the type of high-quality connectivity that would allow them to participate at the forefront of STEM research and educational opportunities. Focusing on digital equity for higher education means prioritizing funding to connect every community college, every MSI, and every college and university to a world-class and secure REN infrastructure, with particular attention to institutions that have been chronically underserved. R&E networking organizations (or lead universities in areas that lack a formal R&E networking organization) are willing and capable partners to support this program focus.

c. Establishing Strong Partnerships Between State, Local, and Tribal Governments

Question #19: State planning activities should be required to seek comments and engage representatives of community anchor organizations, including Library Service Centers, Regional Education Service Centers, local councils of government, statewide RENs, chambers of commerce, and individual

county and municipal leaders. Proposals that include letters of support that show knowledge of the proposed plan and coordination from broad cross-sections of these groups should be prioritized in state funding determinations.

Question #20: NTIA should recognize the unique role played by the higher education community including HBCUs, TCUs, and MSIs and encourage stakeholder groups at all levels to include representatives from these organizations in their planning efforts. In addition, NTIA should encourage states, as they draft their own program rules, to draw on the expertise of each state agency with expertise in information technology, utility regulation, education, higher education, housing, aging, building and construction standards, right of way management, public safety, economic development ,and any state-run networks. Ideally, state governments should create cross-agency teams, sourced from all such groups or agencies to support their broadband offices and five-year plans.

3. Implementation of the Digital Equity Act

a. State Digital Equity Plans

Question #28: One way that NTIA can ensure State Digital Equity Plans address the outcomes specified in the IJA as to workforce development and education is to require states to promote digital equity for higher education as a priority within their plans. Indeed, the National Urban League’s “The Lewis Latimer Plan for Digital Equity and Inclusion” issued in April 2021 states that one of the greatest issues that our country faces in digital equity is in higher education:

While colleges and universities have some of the best networks and highest levels of connectivity in the world, problems persist. Some students, forced to study from home or facing greater economic difficulty due to COVID-19, risk being disconnected from an education that increasingly relies on broadband at home. A larger problem is that colleges and universities remain an underutilized resource for digital equity and inclusion. Colleges and universities that directly serve students negatively impacted by failings of digital equity and inclusion often lack the resources to assist students in developing skills to thrive in the digital economy and society. Broadband skills and resources that are in abundance in leading universities have not been tapped to reach locations where robust networks are absent. Research has failed to close the gaps in performance in our current educational system with digital solutions.⁶

⁶ <https://nul.org/program/lewis-latimer-plan> at p.144.

We strongly recommend that NTIA ensure that State Digital Equity Plans impact and interact with workforce development and education by prioritizing digital equity within higher education. State Digital Equity Plans should provide a roadmap as to how each community college, MSI, and tribal institution, as well as other colleges and universities, will be connected to world-class and secure R&E networking infrastructure, with particular attention to institutions and their surrounding community that have been chronically underserved. R&E networking organizations (or lead universities in areas that lack a formal R&E networking organization) are willing and capable partners in this planning process.

b. Digital Equity Coordination Requirements

Question #30: In providing oversight of State Digital Equity Plans, for the reasons already discussed, R&E networks recommend NTIA should ensure states include representatives of HBCUs, TCUs, and other MSIs in their planning and stakeholder efforts. We would also strongly encourage broad stakeholder engagement across the full spectrum of government, public, and private sector entities to include departments of housing, educational institutions at all levels, economic development, and other entities that might coordinate with or depend on digital equity programs.

4. Implementation of MMBI Grant Program

For decades, R&E networks have operated high capacity, highest performance optical networks to support our public-service missions. Most R&E networks own and control their own middle-mile and some last-mile network infrastructure. This allows R&E networks to respond to the unique requirements of CAIs and support the sustained increases in bandwidth utilization by these institutions over time.

As large-scale consortium purchasers, R&E networks have a successful history of forming lasting public/private partnerships with commercial telecommunications carriers and other industry partners. These partnerships have resulted in the ability for schools, libraries, and other CAIs to cost-effectively access R&E networks' shared infrastructure while increasing revenue and lowering administrative costs for these commercial partners. This benefit was specifically recognized in the 2010 National Broadband Plan. Many

of these RENs successfully received past federal grant funds to build out middle mile infrastructure, upgrade broadband connections, and add new connections to CAIs in their states, leading to over 18,000 of new, upgraded, or leased fiber miles. These projects and their new facilities have provided critical infrastructure available for interconnection to last-mile providers as well as connecting an additional 4,700 CAIs to our networks optimized to meet unique CAI requirements.

Question 32: Middle-mile infrastructure should promote access, resiliency, and competition. To ensure that MMBI investments are appropriately targeted to areas where middle-mile service is non-existent or relatively expensive, NTIA should require GIS/mapping evidence of need using federal and locally produced last-mile maps as a basis for an explanation for the need of middle-mile access to the unserved areas and proposed set of open access interconnect facility locations to address last-mile needs. MMBI proposals should be allowed to reference state and locally developed broadband mapping information by reputable and authoritative sources.

In much of the US, if middle-mile infrastructure exists at all it is often considered “proprietary” by its owner and only available for its exclusive use. Middle-mile infrastructure, or lack thereof, can be used to control access to and limit competition. The MMBI should consider middle-mile infrastructure non-existent when it is not “readily available” – meaning that it is not actively marketed on a neutral, non-discriminatory basis at prices that would not preclude the success of last-mile networks that the facilities would ultimately serve.

Any proposal that includes the construction of new infrastructure should be required to demonstrate that it is being built with the expectation that selected components can remain in service over the long term (at least 20 years). There must be clear expectations and a functional open interconnection approach that is both actionable by infrastructure operators and enforceable by NTIA. There are examples from prior programs where the absence of this framework limited access to federally

funded infrastructure, which was ultimately against the public interest. There should be a transparent public mechanism to report on open access interconnect requests, approvals, and denials and an enforcement capability within NTIA that supports non-discriminatory interconnection consistent with commitments made by applicants in their proposals.

As an alternative to new construction where middle-mile fiber-optic routes do exist, NTIA should support the acquisition of fiber optic strands via long-term capital leases and IRUs in order to reduce the cost barriers faced by last-mile networks.

Question 33: The primary purpose of middle-mile infrastructure is to interconnect areas or regions. Often it is the case that the middle-mile is used to interconnect less populated areas to areas of greater population densities where more opportunities exist, at lower costs, to interconnect with internet transit and content providers. A key component of middle-mile infrastructure is provider-neutral interconnection points. Today, very few such facilities exist outside the 50 largest cities in the U.S.⁷ By comparison, the European Union has a much greater density of exchange points located in its member nations.⁸ By establishing additional provider-neutral interconnection points closer to the “edge” or last-mile of the internet the MMBI will improve affordability, redundancy, and resiliency in these “edge” markets.

MMBI proposals should not only fund the capital cost of establishing these carrier-neutral interconnection points but also give priority to proposals that either include such facilities or at least demonstrate how the proposal will better facilitate connectivity to existing carrier-neutral interconnection points by last-mile networks/providers. MMBI grants should allow for the funding of start-up operations for power, colocation space, and maintenance for up to three years.

⁷ <https://www.internetexchangemap.com/#/>.

⁸ <https://ixpdb.euro-ix.net/en/>.

Question 34: We recommend that there should not be specific requirements for where splice points are located as there are many variables with respect to network design. Federal mandates should focus on open access requirements and enforcement mechanisms. Middle-mile proposals should be required to disclose the location of interconnect points as part of the network design along with a description of the open access plans for these locations. Proposals that include letters of support from last-mile service providers indicating intent to interconnect and leverage the middle-mile infrastructure should be given priority. Open access requirements should provide multiple options that include access to interconnection, conduit, long-term fiber leases (IRUs), and colocation space. As part of the program, NTIA should provide a challenge process to report violations of open access requirements.

Question 35: Regarding leveraging existing infrastructure and rights of way, NTIA should support the acquisition of fiber optic strands via long-term capital leases and IRUs in order to reduce the cost barriers faced by last-mile networks. In addition, and to the extent practical, any proposal that can demonstrate that it is increasing the availability, improving the quality, or reducing the cost of broadband services by leveraging existing assets owned by a third party should be favored, but only if it leads to a more financially competitive proposal.

Every statewide REN across the country is an active testimony of a successful deployment and operations of middle-mile infrastructure with the purpose of serving our public-service missions to continuously improve CAI access and use of the internet and applications. This includes the successful deployments of open access middle-mile infrastructure by R funded by past federal grant programs and matching funds which, years later, continue to be instrumental in delivering affordable internet access to unserved and underserved areas through open-access partnership agreements.

Question 36: The key to scalability is fiber deployment with number of fibers (highest number possible) and conduits as key considerations. NTIA should require applicants to demonstrate how they

will support growth in demand over the long term, particularly for physical-layer deployments in their financial sustainability strategy and initial design. Any new construction should include additional capacity for future growth beyond what is needed to meet the immediate need. For example, NTIA could require that for any new duct constructed, inclusion of hard or fabric innerducts to allow overpull of additional fiber cables be required. For fiber cables, NTIA could require a decreasing unallocated and excess of spare fiber strands based on the cable size for future open access use (20 percent for cables planned to use up to 80 strands, 10 percent for cables planned to use 81 to 220 strands and 5 percent for cables greater than 221 strands).

We recommend that the MMBI proposal scoring rubric award increase points for proposals with heightened levels of open access that not only include actual physical fiber strands but also other methods of achieving open access, *e.g.* dark wave optical services. This approach provides applicants with more flexibility while achieving the same goal. The number of access/interconnection/colocation facilities is also an important element to consider. Entities that design with higher numbers of these facilities per mile should receive a higher score.

We also recommend that NTIA award extra points in the proposal scoring rubric for a project that demonstrates substantial re-use or retooling and upgrade of existing infrastructure and additional points to applicants that are granular and explicit with their open access criteria.

5. Conclusion

We very much appreciate the opportunity for our national community of non-profit research and education networks to offer its knowledge and experience to this establishment of the IIA broadband infrastructure programs. We look forward to supporting NTIA and the states with implementing these historic programs.



Jen Leasure
President & CEO
THE QUILT
2442 NW Market Street, #68
Seattle, Washington 98107



Jeffrey A. Mitchell
MITCHELL LAW, PLLC
2917 39TH STREET NW
Washington, DC 20016
Counsel for The Quilt



John S. Morabito
Vice President, General Counsel, and Corporate Secretary
Internet2
1150 18th Street, NW
Suite 750
Washington, DC 20036