BROADBANDBREAKFAST *PRESENTS*

BEAD IMPLEMENTATION SUMMIT

THURSDAY, SEPTEMBER 21, 2023
CLYDE'S OF GALLERY PLACE, WASHINGTON D.C.

BEAD IMPLEMENTATION SUMMIT

Welcome & Introduction: Drew Clark *(9:00 a.m.)*

Welcoming Remarks *(9:15 a.m.)*

CostQuest Associates

DCS Technology Design

Panel 1: Roundtable for State Broadband Leaders *(9:20 a.m.)*

State Broadband Leaders have a vital role to play in the implementation of BEAD. Not only are they responsible for distributing funds that will soon be allocated by the National Telecommunications and Information Administration, they are also poised to play a crucial role in implementing other key programs. This discussion will delve into state initial proposals, state goals and priorities, and high-cost thresholds. What are the next hurdles? How can states support each other?

Angie Bailey, Director, Broadband Infrastructure Office, North Carolina

Valarry Bullard, New Jersey Broadband Director

Andrew Butcher, President, Maine Connectivity Authority

Glen Howie, Director, Arkansas State Broadband Office

Matt Schmit, Director, Illinois Office of Broadband

Drew Clark (moderator), Editor and Publisher, Broadband Breakfast

Break *(10:20 a.m.)*

Panel 2: Precursors to BEAD: ARPA, Capital Projects Fund and Middle Mile Deployment *(10:45 a.m.)*

For at least two years, the Biden Administration has been deploying federal broadband funds through the American Rescue Plan Act, including Capital Project Funds awards. Now, Middle Mile broadband awards were announced on June 16, 2023. How have or will these precursor programs to BEAD operate? What problems have they faced? What are states doing to build on previous investments?

Joel Daly, Senior Vice President of Government Affairs and Product Strategy, Zayo

Chas Eberle, Director of Outreach and Senior Policy Advisor, Capital Projects Fund, Treasury Department

Joel Daly, Senior Vice President of Government Affairs and Product Strategy, Zayo

Dr. Tamarah Holmes, Director of the Virginia Office of Broadband

Laurel Leverrier, Assistant Administrator, USDA's Rural Utilities Service, Telecommunications Programs

Kathryn de Wit (moderator), Director, Pew's Broadband Access Initiative

Remarks: David Don *(11:45 a.m.)*

Senior Vice President for Public Policy, Comcast Corporation

Luncheon *(11:50 a.m.)*

Keynote Address: Evan Feinman *(12:20 p.m.)*

Director, BEAD Program, National Telecommunications and Information Administration,
U.S. Department of Commerce

Panel 3: Matching Funds, Private Sector Investment and Public-Private Partnerships *(1:10 p.m.)*

The BEAD program requires a 25 percent match from its subgrantees and a letter of credit. These requirements have the potential to be a large hurdle for many providers and states. How is the private sector poised to supplement the federal funds being deployed for the BEAD program? How will providers invest this capital into new broadband infrastructure?

Steve Coran, Chair, Broadband, Spectrum & Communications Infrastructure Practice Group, Lerman Senter

Willie Heflin, Managing Director, Kinetic Ventures

Blair Levin, Policy Equity Analyst, New Street Research; Non-resident Senior Fellow, Brookings Institution

Brian Vo, Chief Investment Officer, Connect Humanity

Rob Pegoraro (moderator), Journalist for Fast Company, PCMag, Wirecutter and other outlets

Panel 4: Town Hall on Buy America, Regulatory Compliance and Network Deployment *(2:20 p.m.)*

The BEAD program includes a Buy America requirement that directs providers to source 55 percent or more of material from the United States. Although the NTIA's draft waiver may address some of these concerns, there are other compliance burdens on both private and public internet service providers. Additionally, there will be many "back end" issues as part of BEAD network deployment. This concluding "town hall" session at the Summit will address issues with Buy America, letters of credit, workforce development, supplier diversity, regulatory requirements and rights-of-way.

Angie Kronenberg, President, INCOMPAS, the Internet and Competitive Networks Association

Mike Romano, Executive Vice President of NTCA–The Rural Broadband Association

Scott D. Woods, President of Public-Private Partnerships for Ready.net

David E. Bronston (moderator), Special Counsel, Phillips Lytle LLP

Panel 1: Roundtable for State Broadband Leaders

ANGIE BAILEY
DIRECTOR, BROADBAND INFRASTRUCTURE OFFICE, NORTH CAROLINA

Angie Bailey, director of the Broadband Infrastructure Office within the N.C. Department of Information Technology's Division of Broadband and Digital Equity, focuses on planning and implementation of the infrastructure investment programs that are helping close the digital divide in North Carolina. Bailey previously served as director of N.C. Broadband within the N.C. Department of Commerce and has more than 20 years of experience in broadband planning and development in North Carolina. She has extensive expertise in broadband policy issues, rural and community development, coordination of statewide programs and partnerships with North Carolina's broadband providers. Bailey was named N.C. Tech Association's 2022 Tech Woman of the Year as part of the N.C. Tech Awards.

VALARRY BULLARD
NEW JERSEY BROADBAND DIRECTOR

As the State of New Jersey's first Broadband Director, Valarry drives the state's broadband strategy of equal access for all New Jerseyans and direct substantial federal and state funding that will soon become available by working with industry, communities, and agencies to ensure the greatest impact for digital literacy and inclusion. She also focuses on building out an enhanced staff and processes to manage funding from the Bipartisan Infrastructure Law signed by President Biden.

ANDREW BUTCHER
PRESIDENT, MAINE CONNECTIVITY AUTHORITY

Andrew Butcher is the inaugural president of The Maine Connectivity Authority a new quasi-governmental agency serving as the primary entity charged with achieving universal access of affordable high-speed broadband in the state of Maine. By balancing investments in projects, places and people MCA is advancing digital equity for all. Butcher has over 15 years in community and economic development, social entrepreneurship and connected infrastructure. Prior to his role at MCA he founded an internationally recognized non-profit, served as director of the Maine Broadband Coalition and helped advance numerous innovation and resilience initiatives in Maine.

GLEN HOWIE
DIRECTOR, ARKANSAS STATE BROADBAND OFFICE

Glen Howie is the Director of the Arkansas State Broadband Office, where he serves as the chief broadband advisor to Gov. Asa Hutchinson. He will oversee the state's BEAD and Digital Equity planning and implementation, an effort expected to exceed $1 billion. Starting in his role August 1, he came to Arkansas from the nationally recognized Louisiana Office of Broadband Development and Connectivity.

MATT SCHMIT
DIRECTOR, ILLINOIS OFFICE OF BROADBAND

Matt Schmit currently serves as Director of the Illinois Office of Broadband, where integration of 21st century infrastructure and service delivery is a primary focus of his work and research. He previously held office as a senator in his home state of Minnesota, and has served on many legislative boards on broadband deployment, transportation policy & investment, and community & economic development. In addition, Mr. Schmit has served on the Cook County Council on Digital Equity (CODE), the Agricultural Utilization Research Institute (AURI) board, the Blandin Broadband Strategies board, the St John's University Board of Regents, and the Legislative Water Commission; represented Minnesota on the National Conference of State Legislators Nuclear Energy Work Group and Commerce Committee; and was an active member of the National Caucus of Environmental Legislators and State Ag and Rural Leaders.

DREW CLARK
EDITOR AND PUBLISHER, BROADBAND BREAKFAST

Breakfast Media LLC CEO Drew Clark has led the Broadband Breakfast community since 2008. An early proponent of better broadband, better lives, he initially founded the Broadband Census crowdsourcing campaign for broadband data. As Editor and Publisher, Clark presides over the leading media company advocating for higher-capacity internet everywhere through topical, timely and intelligent coverage. Clark also served as head of the Partnership for a Connected Illinois, a state broadband initiative.

Panel 2: Precursors to BEAD: ARPA, Capital Projects Fund and Middle Mile Deployment

JOEL DALY
SENIOR VICE PRESIDENT OF GOVERNMENT AFFAIRS AND PRODUCT STRATEGY, ZAYO

Joel Daly is a seasoned entrepreneur and technology executive with a 25-year track record. He currently holds the position of SVP Government Affairs and Product Strategy at Zayo, where he successfully secured NTIA Middle Mile Awards totaling $93M. Over the past 4 years at Zayo, Joel has served in key leadership roles, including President of zColo, overseeing a $1.4B datacenter divestiture, and SVP of Zayo Central Fiber Region.

CHAS EBERLE
DIRECTOR OF OUTREACH AND SENIOR POLICY ADVISOR, CAPITAL PROJECTS FUND, TREASURY DEPARTMENT

Chas Eberle is the Director of Outreach and Senior Policy Advisor for the Capital Projects Fund, a $10 billion program at the U.S. Department of the Treasury. Prior to joining CPF, Chas served for 10 years at the Federal Communications Commission in a variety of roles as an attorney in the Wireline Competition Bureau and Wireless Telecommunications Bureau Front Office, where his work focused on universal service programs, wireless infrastructure and spectrum policy, and the Broadcast Incentive Auction. Prior to joining the FCC, he was in private practice in Washington.

DR. TAMARAH HOLMES
DIRECTOR OF THE VIRGINIA OFFICE OF BROADBAND

Dr. Tamarah Holmes is director of the Office of Broadband at the Virginia Department of Housing and Community Development. She has served the Commonwealth of Virginia for nearly nine years as a program manager for the Virginia Appalachian Regional Commission. She previously served as a coordinator for the Childhood Lead Poisoning Prevention Program for Newark, NJ, an administrative project analyst for Richmond, and a community development block grant coordinator Chesterfield County.

LAUREL LEVERRIER
ASSISTANT ADMINISTRATOR, USDA'S RURAL UTILITIES SERVICE, TELECOMMUNICATIONS PROGRAMS

Laurel Leverrier is the Assistant Administrator of the USDA's Rural Utilities Service (RUS), Telecommunications Programs, where she oversees RUS' $5 billion portfolio of telecommunications loans and grants. During her eighteen-year career at USDA, Laurel has served in a variety of positions and has participated on a number of federal working groups, including the American Broadband Initiative (ABI). Laurel is a graduate of American University's Key Executive Leadership Program and holds a Bachelor of Arts degree in Business Administration and Economics from Westminster College in Fulton, Missouri.

KATHRYN DE WIT
DIRECTOR, PEW'S BROADBAND ACCESS INITIATIVE

Kathryn de Wit directs Pew's broadband access initiative, which works to accelerate efforts to connect millions of Americans to affordable, reliable high-speed internet. Her team works with broadband offices and state officials across the country, as well as researchers, advocates, and Congress to help states and the field prepare for this momentous federal investment. De Wit holds degrees from Penn State University and the University of Pittsburgh, is a recipient of the Benton Institute for Broadband and Society's Emerging Leader Award, and was named to The Washingtonian's 500 Most Influential People in 2023.

Panel 3: Matching Funds, Private Sector Investment and Public-Private Partnerships

STEVE CORAN
CHAIR, BROADBAND, SPECTRUM AND COMMUNICATIONS INFRASTRUCTURE PRACTICE GROUP, LERMAN SENTER

Steve Coran is chair of Lerman Senter's Broadband, Spectrum and Communications Infrastructure practice group. He represents broadband providers, private equity firms, equipment and technology companies, and new technology firms, serving their policy, transactional, compliance, and licensing needs. He also actively represents a trade association before the FCC, Congress, and other federal agencies in matters involving spectrum policy, Internet regulation, the Universal Service Fund, and other proceedings affecting wireless broadband service providers and other wireless technology interests.

WILLIE HEFLIN
MANAGING DIRECTOR, KINETIC VENTURES

William Heflin is Managing Director at Kinetic Ventures, an investment firm with over 35 years of history investing in the technology and services industries. Kinetic's most recent investment fund will focus on investing in rural broadband and digital infrastructure businesses. Willie has led investments in the communication and software areas. Prior to his work with Kinetic he worked for IBM. He received his BS and MS in engineering from the University of Illinois and his MBA from the MIT Sloan School of Management.

BLAIR LEVIN
POLICY EQUITY ANALYST, NEW STREET RESEARCH; NON-RESIDENT SENIOR FELLOW, BROOKINGS INSTITUTION

Blair Levin has worked for the past 30 years at the intersection of broadband policy and capital markets. From 1993-1997 Levin served as Chief of Staff to FCC Chairman Reed Hundt and subsequently oversaw the development of the 2010 United States National Broadband Plan. He has also worked as a policy equity analyst, which he now does for New Street Research, while also serving as a non-resident Senior Fellow of the Metropolitan Policy Project of the Brookings Institution.

BRIAN VO
CHIEF INVESTMENT OFFICER, CONNECT HUMANITY

Brian Vo is the Chief Investment Officer at Connect Humanity, an impact fund investing in broadband infrastructure targeting low-income, rural, and BIPOC communities. Connect Humanity provides structured loans to ISPs, municipalities, co-ops, and others building and operating affordable broadband. Prior to impact investing, Brian was with McKinsey & Company's Strategy and Corporate Finance Practice, Macquarie's Private Equity team, and Jefferies Investment Bank.

ROB PEGORARO
JOURNALIST FOR FAST COMPANY, PCMAG, WIRECUTTER AND OTHER OUTLETS

Rob Pegoraro covers the problems and possibilities of consumer technology — computers, gadgets, telecom, social media, apps, and other things that beep or blink — for Fast Company, PCMag, Wirecutter and other outlets. He also speaks frequently about them on radio, podcasts, TV and at conferences. Pegoraro has met most of the founders of the Internet and once received a single-word e-mail reply from Steve Jobs.

Panel 4: Town Hall on Buy America, Regulatory Compliance and Network Deployment

ANGIE KRONENBERG
*PRESIDENT, INCOMPAS,
THE INTERNET AND COMPETITIVE
NETWORKS ASSOCIATION*

Angie Kronenberg is President of INCOMPAS, the internet and competitive networks association. Angie is responsible for managing the INCOMPAS policy team and its work before federal, state, and local governments, and she leads the association's efforts on membership and business development. Angie has successfully influenced and shaped some of the most complex, high-profile matters in the communications space, and she is an expert on technology and telecommunications policy, including broadband deployment, access, and availability, universal service, net neutrality, merger reviews, competition policy, and administrative law.

MIKE ROMANO
*EXECUTIVE VICE PRESIDENT,
NTCA–THE RURAL BROADBAND
ASSOCIATION*

Mike Romano is the Executive Vice President of NTCA–The Rural Broadband Association, overseeing NTCA's public policy and business development initiatives, the educational and community-focused mission of the Foundation for Rural Service, and several areas of association operations including member engagement, information technology, and human resources. Before joining NTCA, Mike was of counsel with Morgan Lewis, served as the founding vice president and general counsel of GTT Communications, and held a variety of positions with America Online and Level 3 Communications.

SCOTT D. WOODS
*PRESIDENT OF PUBLIC-PRIVATE
PARTNERSHIPS FOR READY.NET*

Scott D. Woods is the President of Public-Private Partnerships (P3) for Ready.net, Inc. Scott facilitates and develops key public-private partnerships with state broadband offices, service providers, anchor institutions, and local communities. He also focuses on providing a platform for local communities to express their needs for broadband access and digital equity investments. He also develops industry partnerships and fosters alliances with key stakeholders across the country to advance and support community-based broadband education and advocacy initiatives. Scott currently hosts the Ready or Not? Podcast, where he shares his deep knowledge of the broadband industry while giving local ISPs and communities a voice and a platform.

DAVID E. BRONSTON
*SPECIAL COUNSEL,
PHILLIPS LYTLE LLP*

David Bronston, former general counsel for the NYC Department of Information Technology and Telecommunications, is an authority on fiber and wireless network deployment in public and private rights of way. Bronston has obtained and negotiated licensees, franchise leases and authorizations necessary for digital infrastructure deployments of towers, small cells, Distributed Antenna Systems, data centers, metro enterprise and middle mile networks. A builder of both telecommunications and professional networks, Bronston and Phillips Lytle can assist with public private partnership and joint venture agreements, financing transactions and network build agreements. In other words, the regulatory, operational and transactional elements of successful network deployments.

Keynote

EVAN FEINMAN
DIRECTOR, BEAD PROGRAM, NTIA, U.S. DEPARTMENT OF COMMERCE

Evan Feinman is the director of the Broadband Equity, Access, and Deployment (BEAD) Program, the primary program deploying broadband created by the Bipartisan Infrastructure Law. He has previously served in multiple roles within government, on political campaigns, and in the private sector, most recently directing both the Virginia broadband effort and a state economic development agency. Feinman received his bachelor's degree from UVA, his law degree from Washington and Lee, and has completed multiple public policy fellowships. He lives in Richmond, Va., with his wife, Annalisa Feinman, a Richmond public defender, and his son, Bennett.

Remarks

DAVID DON
SENIOR VICE PRESIDENT FOR PUBLIC POLICY, COMCAST CORPORATION

David Don serves as Senior Vice President for Public Policy at Comcast Corporation. He is responsible for developing and implementing the company's strategies before federal and state governments. David has worked extensively on public policy, infrastructure, and spectrum allocation for over 25 years, and he often represents Comcast in public fora examining the most relevant issues of the day.

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A Deep Dive into Allocations Under the Broadband Equity, Access and Deployment Program

BROADBAND BREAKFAST CLUB | *JULY 2023*

The Broadband Equity, Access and Deployment program will invest $42.5 billion in high-speed internet across the country. Following the White House funding announcement on June 26, 2023, state broadband offices have begun to react and release reports on their next steps in the landmark broadband infrastructure measure.

States react to award allocations

The BEAD program, implemented by the Commerce Department and its National Telecommunications and Information Administration, allocates funds directly to state broadband offices, which are in charge of developing their own programs and issuing subgrants to qualifying internet service providers. ISPs can include private, public/municipal or cooperative entities. States have a lot of work to do to prepare for the federal funding coming down the pipeline.

In late 2022, the NTIA awarded BEAD planning grants that funded state processes in developing a five-year action plan for BEAD awards. States have 270 days from the receipt of planning grants to release their five-year plans intended to "provide a foundation for alignment with future initial and final proposals."

The NTIA has provided states with a five-year action plan template that includes a statement of a clear vision for broadband deployment and digital equity. It outlines goals and objectives that ensure all residents will have access to high-speed internet and empower local municipalities to develop and implement lasting broadband infrastructure across the state or territory.

Additionally, states must list all existing broadband programs or offices, relevant partnerships with stakeholders, and a needs and gaps assessment of the obstacles residents face in connecting to the internet.

State digital equity plans must identify the barriers to digital equity and measurable objectives for documenting and promoting the availability, affordability and accessibility of digital equity programs. They must provide an assessment of how the objectives will impact and interact with other state economic and social goals.

Louisiana was the first state to publicly release its five-year and digital equity plans in May. Since then, Delaware, Hawaii, Idaho, Maine, Montana, North Carolina, Ohio and Utah have released drafts of their five-year plans for public comment. Maine, Michigan, Montana and Utah also released their draft digital equity plans. And Virginia and Louisiana have both released the first volume of their draft BEAD Initial Proposals.

Analysis of states' five-year action plans

Due to each state's unique situation, each five-year action plan lays out different priorities and goals.

Although its deadline is August 12, Utah posted its draft five-year plan for comment in early June. Its public comment period closed early July. The state's plan highlights the role of public-private partnerships and develops a middle mile prioritization strategy to reach all unserved and underserved areas of the state, said **Utah** Broadband Office Director **Rebecca Dilg**.

While Utah's plan focuses heavily on middle mile prioritization, **Maine**'s primary strategy is to "prioritize funding to maximize impact, balancing urgency, universality, and equity" by "managing the dynamic tension of designing solutions for everyone while prioritizing those who are most disadvantaged."

The focus of its five-year action plan is to design strategies that will expand and enhance the foundation for digital equity by raising awareness and strengthening feedback loops.

To meet these goals, Maine says it will "tell a broad range of stories in various mediums to illustrate the real impact of the digital divide on people and communities." Its approach focuses on its vision to improve the lives of its residents by leveraging relationships and existing programs.

By contrast, **North Carolina**'s five-year action plan focuses primarily on BEAD's role to supplement programs supported by the American Rescue Plan Act funds.

North Carolina has already invested more than $50 million in state funds and $272.2 million in ARPA funds to connect more than 145,000 unserved homes and businesses, it stated in its plan. In addition to ensuring that BEAD funds build infrastructure to 100 percent of all underserved households, high-cost locations and community anchor institutions, the state plans to use the remaining funds on affordability programs. It wants to ensure a high take rate on broadband deployment.

Additionally, the state has already invested $50 million to create awareness and support digital literacy and skills training programs that help its residents participate in the digital economy, it said. It hopes to continue to promote enrollment in the Affordable Connectivity Program to include 1 million North Carolina households, currently 774,327.

Meanwhile, **Ohio** has outlined a simple four-pronged vision to achieve its goals with BEAD funds: Promote the creation of world class broadband networks across the state via the use of best-in-class technologies; enable participation in the modern economy; empower Ohioans through training, device access and digital skills; and bring reliable, affordable high-speed internet to every Ohioan.

The state's goals to achieve these objectives include plans to connect community anchor institutions to serve as digital hubs with at least 1 Gigabit per second (Gbps) symmetrical service, expand tele-health access and usage via targeting programming, expand access to remote education opportunities,

invest in workforce development and remove barriers to deployment.

Ohio is focusing its attention on high-quality investments that will benefit its residents for decades to come and will set a precedent within the state for high quality service. "We are confident Ohio will continue to meet all federal requirements, from the challenge process to the initial and final proposals," said **Brian Bohnert**, senior public information office in Ohio's Department of Development, told Broadband Breakfast.

With the state's five-year action plan submitted, BroadbandOhio has pivoted to working on its initial proposal, Bohnert said. "Ohio will have all the required components of the initial proposal done well before the end-of-year deadline."

Montana is the nation's fourth largest state, but ranks number 44 in population, with a population density of just 7.4 people per square mile. It also has the unique topography of two distinct geographic regions: the Great Plains and the Rocky Mountains. In light of these barriers, which are likely to present significant costs, its five-year action plan outlines steps to reach unserved locations in "the most high-impact and cost-effective way possible."

The state's second aim is to develop programs and partnerships that "address core factors impacting digital participation for Montanans." Included in that goal are initiatives to further the state's information technology strategic goals for each individual state agency.

While Montana outlined a basic structure for its state challenge process, **Louisiana** was the only state that detailed its challenge procedures in the five-year plan. Louisiana's plan outlines key activities the state will implement to encourage digital inclusion, including creating a digital equity platform that tracks clearly defined access and affordability metrics such as service availability, speeds and prices in unserved areas.

The state will also design future grant programs to prioritize access and affordability for covered populations. It will use accessible online resources, community centers, libraries and other resources to promote and host in-person events that educate on available programs.

Massachusetts, which will receive $147 million, told Broadband Breakfast only that plan development is ongoing. It has adopted a statewide Digital Equity Survey that seeks input from Massachusetts residents about their barriers to internet access, affordability and adoption.

B.J. Tanksley, director of the Office of Broadband Development in **Missouri**, told Broadband Breakfast that the state is working diligently to prepare for BEAD funding by hosting a 23-stop tour around the state to hear from residents about the strengths and challenges of each region of the state. "During the tour we gathered valuable insight that will serve the team through our efforts," he said, stating that Missouri is wrapping up its planning efforts and is "on track" to submit its challenge process, initial proposal, five-year plan and digital equity plan in the coming months.

How were BEAD allocations determined?

Congress directed that the BEAD allocation process be composed of three segments: Minimum award amounts for states and territories, high-cost locations and remaining funds.

Each state was guaranteed to receive at least $100 million and territories a minimum of $25 million. High-cost allocations, which represent 10 percent of the total program funds, target unserved areas where the cost of building broadband infrastructure is higher than construction in other unserved areas across the country. The remaining funds were divided among the states based on the number of unserved locations in each.

State allocations were based on the second version of the Federal Communications Commission's national broadband map, released early June.

In addition to their five-year action plan and digital equity plan, awardees are required to release an initial proposal for their plan to implement the subgrantee process in which they will allocate funds to eligible entities to build broadband infrastructure. States will have access to at least 20 percent of their total allocations once the initial proposal is approved by NTIA officials.

Final proposals are due no later than 365 days after the approval of the initial proposal and must include the state's subgrantee selection process, its plan for allocating funds to subgrantees, a timeline for the project, a certification from subgrantees that they will service all unserved and underserved locations, and an oversight and accountability process.

Additionally, states are required to present matching funds of at least 25 percent of projects costs, assess climate-related threats to broadband infrastructure, make initial proposals available for public comment and develop a challenge process to allow commenters to contest the state's claims on whether certain locations have broadband service.

As part of the program structure, fiber projects are prioritized for all areas except for those that are determined by the state or territory to be "extremely high cost" locations.

Analyzing the allocation amounts

At the White House announcement of the funding amounts on June 26, President **Joe Biden** said, "These investments will help all Americans. We are not going to leave anyone behind." In addition to connecting more Americans, the fund will also provide more high paying jobs and invest in American manufacturing, he continued.

Texas is the highest-awarded state with more than $3.3 billion, and **California** is the second highest with $1.8 billion. Nineteen states are set to receive more than $1 billion in funding. Other high awardees include **Alabama**, **Georgia**, Louisiana, **Michigan**, Missouri and North Carolina. Each state is set to receive a baseline of $107.7 million.

"It's good to see our hard-earned tax dollars coming back to Texas, and you can be certain that each of those dollars will be spent wisely," said Texas Comptroller **Glenn Hegar** in a statement following the allocation announcement.

Hegar expects that the Texas Broadband Development Office will begin accepting applications for the BEAD program in 2024. "Texas has a significant share of unserved areas spread over a vast and geographically diverse landscape," he said. "I am encouraged that NTIA recognizes the challenges we face in Texas."

Other state broadband offices expressed their support for the allocation announcements. **Minnesota** was awarded $651 million, in line with the Advanced Communications Law and Policy Institute at the New York Law School's [prediction of](#) $620 million.

"In Minnesota, we've made historic investments to connect more homes, businesses, and communities with the high-speed internet that today's economy requires," said Gov. **Tim Walz** in June. "The funding will help us make sure those efforts reach each and every household across our state." The state has not yet released its digital equity plan or five-year plan.

Pennsylvania Broadband Development Authority attributes its allotment of $1.16 billion through BEAD to the work of Penn State Extension, which developed and updated state broadband service availability maps to help the state in its challenges to fix discrepancies in the FCC maps.

[According to the Pennsylvania BDA](#), the work helped identify more than 50,000 service-availability claims that were incorrectly reported, 28,000 of which were upheld by the FCC and resulted in an estimated $117 million increase in the state's share of federal funding.

Wyoming is working with consultants to gather public input from many sectors of its residents and businesses to determine the best way to invest their funds, **Elaina Zempel**, broadband coordinator at Wyoming Business Council, told Broadband Breakfast.

"The amount of funds does not solve Wyoming's connection issues but gets us a long way down that road," she said. Zempel reported that the state's 5-year action plan and digital equity plan are set to be released soon for public comment.

Topography and population density are major concerns for Wyoming, and its broadband office is exploring many different options that will provide high-speed internet to its residents, Zempel said.

Utah received $317 million, an increase from most estimates which put it in the high $200 million range. "Utah has led the way in bringing broadband to our rural communities, installing it in our state freeway systems and connecting our anchor institutions," Utah's Dilg told Broadband Breakfast. "The $317 million will be a huge asset to encourage affordable

broadband expansion to the last unserved locations."

Missouri was likewise optimistic about award amounts. "While $1.7 billion is on the higher end of what we estimated, we believe it is reflective of the reality in our state. We have a large number of unserved locations and a number of those locations fall within the high-cost criteria," said Tanksley of the state.

The $800 million that Ohio is set to receive is "game changing," said an official from the state.

Critics of the BEAD funding process

The BEAD program allocates a minimum of $100 million to each state, the District of Columbia and Puerto Rico, regardless of the need or population in that state. As a result, several small states with a greater percentage of residents connected to high-speed internet received more money per capita than larger states.

An [analysis of FCC data by Broadband Now](#) found that 99.8 percent of **Rhode Island** residents have broadband access. The state received more than $108 million in BEAD funds, equating to over $49,000 per unserved resident. The **District of Columbia** similarly received $30,000 per unserved resident.

These per capita awards provide a stark contrast to large states and states that have the lowest percentage of broadband access. For example, **West Virginia** will receive less than $2,100 per unserved resident and Texas less than $900, based on FCC data on the number of unserved locations in each state.

Additionally, many experts have raised issue with the FCC's national broadband map, claiming that it inaccurately represents the unserved and underserved areas of the country and is detrimental to grant and subgrant processes that seek to prioritize areas most in need of funding.

The [Reid Consulting Group analyzed](#) more than 14 million consumer-initiated speed tests over a three-year period in Ohio. The resulting map provides a stark difference to the FCC maps, which are based on ISP coverage claims. RCG's map shows that over 50 percent of the state receives below 100 download and 20 upload Mbps capacity, while the FCC map shows

the vast majority of the state receiving speeds above that threshold.

Ohio was not the only state that displayed such discrepancies. Mapping discrepancies are a serious concern for the industry, as subsequent FCC maps and state challenges will denote the amount of funds each subgrantee will be awarded for specific areas in each state.

Mike Conlow, a broadband data and internet policy analyst and blogger, released a report in May that pointed out the filing issues that occur when ISPs report on their own data.

According to Conlow, almost 40,000 locations in Michigan were moved from unserved to underserved or served in the second version of the FCC maps following ISP filings that potentially cost the state millions of dollars in BEAD allocations. Although the filings were compliant to FCC rules, they were based on the "maximum advertised" throughput instead of the "maximum actual."

Conlow also highlighted the issue that the law requires that 10 percent of the total BEAD dollars go to areas that are more than 80 percent unserved, which could present a significant problem for those states that have widely dispersed unserved locations.

Yet another concern is the NTIA's requirement that grant applicants must provide a letter of credit to demonstrate their financial capacity to meet the program's obligations throughout the construction process. A letter of credit is a document a bank provides on behalf of a network operator to guarantee that in the event of default of the build, the bank will reimburse the agreed upon funds to the NTIA.

Subgrant awardees are required to submit a letter of credit of 25 percent of the project costs on top of the 25 percent match requirement. With limited exceptions, the NTIA will enforce this regulation rigorously, the Commerce agency has said.

Experts claim that due to the large investment, banks insist on cash collateral, which significantly increases the cost of receiving grant funds. Furthermore, the cash held by banks as collateral is essentially untouchable during the project, which limits the capital available to invest in the projects.

Despite these concerns, some experts believe that the $42.5 billion allocated under the BEAD program will be enough to connect the "vast majority" of American households to high-speed internet, as heard during a Broadband Breakfast Live Online event on July 5.

Business consultant group Cartesian believes that some states will be able to deploy fiber to every location while still others will have money left over for affordability programs.

Next step: Challenge process coordination

At the moment, states are still grappling with the next steps of the challenge process coordination. "The looming concern facing us right now is development of the online state challenge process," said Utah's Dilg. "Requiring each state to do it rather than a central process is stretching our resources a bit and feels duplicative of the FCC map challenge."

Dilg stressed that although the challenge process will be difficult, Utah has a history of developing and maintaining its own broadband availability maps and that it is "confident and working on some ideas that will make it another valuable tool for pinpointing unserved broadband locations."

Montana specified that it would collect challenges from institutions based on the FCC's most recent map of broadband service availability in the state and will evaluate challenges based on successful applications. It will submit these challenges to the NTIA for review and approval, and to be added to the FCC's map.

Louisiana stated that it will adopt the NTIA's model challenge process, which outlines a highly controlled system in which the the agency will review and approve each challenge process and its results.

The state's broadband office, ConnectLA, will allow challenges to the map data only on the identification of eligible community anchor institutions, existing broadband serviceable locations, enforceable commitments and planned service. Challenges may be submitted by nonprofit organizations, units of local and tribal governments, and broadband service providers.

Precursors to BEAD Implementation

The process of rolling out broadband funds under the country's bipartisan infrastructure law has begun in earnest, with the White House announcement in June of allocations for each state under the Broadband Equity, Access and Deployment program. States, meanwhile, are deeply in the midst of planning for BEAD implementation.

The Broadband Breakfast community will be exploring the details of this rollout at the BEAD Implementation Summit in Washington on Sept. 21, 2023. In preparation for the summit, Broadband Breakfast is producing three monthly reports.

In our July 2023 Exclusive Report, we reviewed the state allocations under BEAD, considering the approaches being taken by a multitude of state broadband offices.

In this August 2023 Exclusive Report, we're considering some of the precursor programs to BEAD — and what those involved in the BEAD Implementation can learn from these prior programs.

In our September 2023 Exclusive Report, we'll be considering the role of matching funds and public-private partnerships in the rollout of BEAD.

Is the past prologue for the historic BEAD?

The $42.5 billion dedicated to the BEAD program is commonly touted as a historically large investment as part of the once-in-a-generation Infrastructure Investment and Jobs Act, which allocated $1.2 trillion to American infrastructure across the country.

"I truly believe that 50 years from now, historians are going to look back at this moment and say, that's the moment America began to win the competition of the 21st century," said President **Joe Biden** at the signing of the bill.

Chair of the White House Council of Economic Advisors **Cecilia Rouse** said that the bill is "designed to be the most strategic, effective investments so that we can continue to compete against China and other countries that are making bigger investments in their infrastructure."

Under the announcements, each state is set to receive a baseline of $107.7 million and allocations were based on the Federal Communications Commission's second version of its national broadband map. Some states are receiving far more. For example, Texas will receive $3.3 billion, California will receive $1.8 billion, Missouri will receive $1.7 billion, Michigan will receive $1.56 billion and North Carolina will receive $1.53 billion.

States have 180 days from the receipt of the formal notice of allocation on June 30 — the end of December 2023 — to submit initial proposals for how they will run their subgrant programs. Once plans are approved by the NTIA, states will be able to access at least 20 percent of their allocated funds.

With these allocations, the White House anticipates that each state and territory will have the resources it needs to connect every resident and small business to reliable, affordable high-speed internet by 2030.

One key difference between BEAD and predecessor programs is that other broadband efforts funded infrastructure from the federal level. Now that the state-by-state allocation decisions have been made under BEAD, state broadband officers will be responsible for deciding where funds are allocated.

Although the BEAD program represents the largest to-date federal investment in broadband infrastructure, it is not the first of its kind. Congress has allocated billions of dollars through several grant and loan programs to invest in American broadband networks over the past decade.

This report will consider these other programs, including investments under the American Rescue Plan Act, the ReConnect Program, the Universal Service Fund and the Rural Digital Opportunity Fund.

American Rescue Plan Act

In 2021, stories of young students unable to log in to digital classrooms, workers without in-home connectivity being forced to work in unsafe work environments and sick people unable to get access to healthcare during the pandemic awoke lawmakers to the issues posed by digital inequity. These challenges disproportionately impacted low-income, minority and rural communities.

A year after the pandemic began, in March 2021, Biden signed into law the American Rescue Plan Act, a $1.9 trillion economic stimulus bill that provides additional relief to address the impact of the COVID-19 pandemic on the economy, public health, state and local governments, individuals and businesses.

"More than 9.5 million workers have lost their jobs in the wake of COVID-19, with 4 million out of work for half a year or longer. Without additional government assistance, the economic and public health crises could drag on and our national vaccination program will be hobbled at a critical moment," read the White House's announcement of the program.

The Act established the Emergency Connectivity Fund (now the Affordable Connectivity Program), which provides $7.2 billion to reimburse schools and libraries for providing free broadband services and devices to students and residents. Eligible equipment includes Wi-Fi hotspots, modems, routers and devices. Entities can also receive funding for broadband service that provides a fixed or mobile broadband connection for off-campus use by students, staff and patrons.

ARPA also authorized the State and Local Fiscal Recovery Fund program, which provides $350 billion to states, territories, local and tribal governments across the country. Of the money, $219.8 billion is dedicated to states, territories and tribes and $120 billion to local governments and counties for local economic recovery purposes. Although this money is not specified for broadband uses, many states have chosen to allocate these dollars to expand broadband access.

SLFRF provided over 30,000 recipient governments with the money to invest in the unique needs of their local communities and create a stronger national economy. Funds can be used to replace lost public sector revenue due to the pandemic, respond to the public health and negative economic impacts of the pandemic, provide premium pay for essential works, and invest in water, sewer and broadband infrastructure.

California was awarded $27 billion total funding through the SLFRF, seconded by Texas with $15 billion and New York with $12 billion.

ARPA also includes $10 billion that will go toward the Capital Projects Fund, which will help states, territories and tribes carry out critical capital projects. A key priority of this program is to make funding available for reliable, affordable broadband infrastructure.

The Treasury department announced the first CPF awards in June of 2022. Eligible uses of the grant funding include broadband infrastructure projects that reliably meet or exceed symmetrical speeds of 100 Megabits per second (Mbps), digital connectivity technology projects including the purchase or installation of devices and equipment, and multi-purpose community facility projects that improve buildings designed to enable work, education and health monitoring.

Grantees are required to produce a quarterly report to the Treasury that provides information on projects funded, obligations, expenditures, project status, outputs and performance indicators, among other information. An annual report that provides information on CPF-funded programs and describes the outputs and outcomes of the programs is also required.

California was once again the highest awarded state through the CPF with $540.2 million, with Texas and Florida at $500.4 million and $366 million respectively.

Recipients must obligate all funding through the SLFRF by Dec. 31, 2024 and spend it by the end of 2026. Money from ARPA will be deployed simultaneously with BEAD funding. The ARPA funds are less restrictive regarding technology than BEAD, which highly prioritizes fiber builds. Experts expect that the money will help fill in gaps that would otherwise be left by BEAD regulations and restrictions.

The USDA's ReConnect program

A large portion of the United States is rural, and often in areas that are hard to reach and costly to deploy to. The Rural eConnectivity Program, or ReConnect, sought to remedy the issue. It began in 2018 to provide grants and loans to broadband providers serving rural communities in America. The U.S. Department of Agriculture's Rural Development office runs programs intended to improve the economy and quality of life in rural parts of the country. Most are run by the Rural Utilities Service.

Congress provided $600 million for the Secretary of Agriculture to conduct a new broadband loan and grant pilot program through the Consolidated Appropriations Act in 2018, legislation that funds the federal government spending during a fiscal year. The program was given $550 million in 2019, and another $555 million in 2020. Another $100 million was provided through the Coronavirus Aid, Relief and Economic Securities Act of 2020, a pandemic relief package passed during the Trump administration. Congress has not authorized ReConnect in legislation outside of the annual agriculture appropriations act.

Corporations, cooperatives, states, tribes, territories and local governments are eligible to apply for assistance under the ReConnect Program. Funds may be used to fund the construction or improvement of facilities required to provide fixed terrestrial broadband service and the acquisition of an existing system that does not currently provide sufficient access to broadband.

Only projects that the USDA deems to be "financially feasible and sustainable" are under review for the ReConnect program. Any applicant must demonstrate a positive ending cash balance as reflected in the cash flow statement for each year of the forecast period.

In the first round of funding, RUS awarded approximately $744.3 million to 82 applicants in 34 states and territories at speeds of at least 25 Mbps down and 3 Mbps up. The second round awarded almost $512 million for buildouts. Round 3 and subsequent rounds, under the Biden Administration, adopted a new speed requirement of 100 Mbps symmetrical,

only areas in which at least 50 percent of households lack access to 100/20 Mbps service. USDA invested $1.67 billion in the third round of funding.

To date, the administration has announced $777.1 million for projects in the fourth round of funding, for a total of $3.86 billion invested through the program. Cordova Telephone Cooperative was awarded $34.9 million through ReConnect to deploy a hybrid fiber-coax and fixed wireless to Alaska residents. Among the highest awards to projects serving areas where 90 percent of households lack sufficient access, Cal-Ore Telephone Company was given $24.9 million to deploy a fiber-to-the-premises network to California residents.

In addition to the ReConnect program, RUS administers three other rural broadband connectivity programs: the Telecommunications Infrastructure Loan program, the Community Connect Grant program, and the Rural Broadband Access Loan and Grant program.

The Telecommunications Infrastructure Loan program offers only loans and Community Connect offers only grants. The criteria for eligible service areas is narrower for the ReConnect program than for the Rural Broadband Access program. For ReConnect eligibility, at least 90 percent of households in an area must lack access to broadband service at speeds of 10 Mbps download and 1 Mbps upload. For Rural Broadband Access, 50 percent or 90 percent of households must lack access to 25/3 Mbps broadband speeds for loans and grants respectively.

The Farm Bill, a piece of legislation covering agricultural and food programs revisited every five years, is due for renewal on Sept. 30, 2023. The Farm Bill administers funds for rural broadband programs administered by the USDA, including ReConnect. The Congressional Research Service noted in 2022 that Congress could consider a longer-term funding mechanism for ReConnect in the 2023 Farm Bill.

Universal Service Fund

A large investment into American broadband comes from the Federal Communications Commission's Universal Service Fund, established through the Telecommunications Act of 1996.

The fund is contributed to by wireline, wireless and interconnected voice over internet protocol providers. These companies are required by law to contribute to the USF from a percentage of end-user interstate and international revenues, which percentage is called the contribution factor. The contribution factor shifts each quarter to represent the demand for universal service support.

The USF was established to provide all Americans with access to rapid, efficient, nationwide communications services at a reasonable price. Today, it provides support through four programs.

The Connect America Fund provides funding for telephone companies that provide services to high-cost areas, locations across the country that are hard to reach due to varying geographical factors. Commonly referred to as the high-cost program, CAF is a complex program split into two phases.

The first phase began in 2013 and authorized $255 million to five telecommunications providers — AT&T, Lumen, FairPoint Communications, Frontier Communications and Windstream Corp — in exchange for broadband build-out commitments to serve just under 400,000 unserved or underserved addresses in 41 states in six years.

The second phase offered funding in two separate stages. The first stage offered funding to large local telephone companies on a state-by-state basis in certain high-cost unserved and underserved areas in exchange for those companies offering voice and broadband services meeting certain requirements to a required number of locations in eligible areas. These carriers, called price cap carriers, were required to complete their program deployment by the end of 2020, a six-year timeline.

In areas where carriers did not accept the model-based support, funds were allocated through a reverse auction model in which service providers competed to receive funding in exchange for offering voice and broadband services meeting certain requirements to a number of locations in the eligible areas.

Over 100 bidders won $1.49 billion in 2018 to provide fixed broadband and voice services to over 700,000 locations in 45 states over the course of 10 years. This high cost support is ongoing and funds speeds of at least 10/1 Mbps.

Recipients were required to offer 40 percent of the required numbers of locations in a state by the end of the third year of support and an additional 20 percent in each subsequent year. Programs are expected to be completed by the end of the sixth year of support, with the exact deployment schedule determined by the carriers.

They are required to file annual reports and data on the locations where service is available with the Universal Service Administrative Company, which runs under the direction of the FCC. According to FCC guidelines, failure to do so could result in the withholding and/or recovery of support.

The second program as funded by the Universal Service Fund, the Lifeline program, helps low-income people pay for phone services. As of 2016, as ordered in the Lifeline Modernization Order, the fund also supports internet connectivity. It provides a subsidy of up to $10 per month for Americans below a certain poverty line threshold.

The third program, the Rural Health Care program, provides subsidies to health care providers for telehealth and telemedicine services. Typically, the money funds video conferencing infrastructure and high-speed internet access that enables doctors to work remotely with patients and targets rural areas where health care providers are often miles away from residents.

Three components of the Rural Health Care Program include the Telecommunications Program, which provides discounts for telecommunications services for eligible health care providers; the Healthcare Connect Fund Program, which establishes a 65 percent discount on eligible expenses related to broadband connectivity; and the Pilot Program, which funds up to 85 percent of eligible costs of construction or implementation of statewide or regional broadband networks.

The fourth Universal Service program is commonly called the E-Rate Program and provides subsidies for internet access for schools and libraries. Subsidies through this program typically pay between 20 and 90 percent of costs based on need. Rural and low-income schools receive the greatest subsidies.

These programs are administered through an independent American nonprofit corporation, the Universal Service Administrative Company. It manages the contribution of revenue and distribution of funds through the USF.

Rural Digital Opportunity Fund

In addition to the various USF programs, in August of 2019, the Republican-headed FCC proposed a program called the Rural Digital Opportunity Fund that directed $20.4 billion to expand broadband in rural areas. It was adopted in January of 2020 and built on the success of the CAF Phase II auctions. It is similarly funded by the Universal Service Fund.

The program was to be divided into two phases. The first was a reverse auction that awarded support to bring broadband to over 5 million homes and businesses in census blocks that were entirely unserved by voice and broadband with download speeds of at least 25 Mbps. The second phase covered census blocks that were partially serviced and locations not funded in phase one.

Prior to bidding, providers were required to determine whether they have a sustainable business case with and without RDOF funds. Once funds are accepted, the provider effectively promises to deliver broadband and voice services to all funded locations identified in the application.

The largest recipients of RDOF phase one funding were LTD Broadband with $1.2 billion to connect over 520,000 locations in 15 states, Charter with $1.2 billion to connect 1 million locations in 24 states and Rural Electric Cooperative Consortium with $1.1 billion to connect over 600,000 locations in 22 states. Other high awardees included SpaceX with $885.5 million and Windstream with $522.8 million.

However, according to an estimate from rural broadband consultancy Cooperative Network Services, of the $9.2 billion won in the phase 1 auction, more than $2.8 billion has defaulted.

Several awardees filed requests for relief from penalties of $3,000 per violation for bringing forth admission that certain areas for which they won money from RDOF to build in may already have adequate

internet. Some attributed their enlightenment to updated FCC maps.

In May, the FCC proposed more than $8 million in fines against 22 RDOF applicants for defaulting on their obligations. "When the FCC set up this program, it set clear rules of the road to ensure that winning bidders would fulfill their promise to use this funding to build new broadband infrastructure," said Chairwoman **Jessica Rosenworcel**.

This was not the first fine the FCC proposed for defaulting winners. The program has been widely criticized. A report from the Free Press organization, a media advocacy group, found the program was "riddled with errors, waste and insufficient oversight. The RDOF auction's design flaws led to granting subsidies in areas that are already served or could be served without subsidies, but in rural and urban areas."

Mike Romano, executive vice president at the NTCA, the Rural Broadband Association, praised the accountability measures of BEAD, and — in light of RDOF's perceived failings — warned states against adopting the reverse auction process as adopted under prior programs. Reverse auctions, he said, were a "race to the bottom" harming providers and consumers. He suggested that states use a model more similar to ReConnect's scoring mechanism, which considered measures such as experience of the provider, level of performance the provider promises and characteristics beyond price.

Other minor broadband programs before IIJA

There are also several programs that are smaller in scope and size than the larger ARPA, ReConnect, USF and RDOF programs. These programs are run by different federal agencies and can often be overlooked in the face of larger programs.

The U.S. Department of Agriculture runs the Distance Learning and Telemedicine Grant program, a competitive program that helps rural communities use advanced telecommunications technology to connect to the internet.

Funds are used for supporting health care needs stemming from the COVID-19 pandemic, ensure racial equity, rebuild rural economy, and address the climate crisis. It provides 100 percent grants, combination loan-grants and 100 percent loans. The program is authorized by the Food, Agriculture, Conservation, and Trade Act of 1990.

Administered by the NTIA, the Broadband Infrastructure Program under the appropriations law passed in December 2020 allocated $288 million for partnerships between state-owned and fixed broadband service providers. Applications closed in August of 2021. Over 230 applications requesting $2.5 billion were reviewed through an initial administrative and eligibility review, merit review and programmatic review.

The Department of Commerce's NTIA awarded Broadband Infrastructure Program grants in 2022 to connect more than 133,000 unserved households. The program was established by the Consolidated Appropriations Act of 2021. Priority projects were those that provide broadband service to the greatest number of households in an eligible service area, provide broadband services to rural areas, and be most cost-effective in providing broadband service.

Other minor broadband programs within IIJA

Despite the myriad of federal broadband funding programs, in 2021, Biden signed the largest to date investment in American infrastructure, the $1.2 trillion Infrastructure Investment and Jobs Act. Of the $1.2 trillion in infrastructure spending under IIJA, $64 billion was dedicated for broadband investments.

Besides the $42.5 billion Broadband Equity Access and Deployment program, $2.4 billion was dedicated to the Digital Equity Program, which funds digital equity initiatives across the states and seeks to provide equitable options for all Americans. The Enabling Middle Mile Infrastructure program received $1 billion for building the middle mile infrastructure that connects the last mile to the internet.

Additionally, the IIJA appropriated $14.2 billion for the Affordable Connectivity Program, which provides a discount of up to $30 or $75 per month for low-income and tribal homes, $2 billion for Tribal Broadband Connectivity Program grants, $2 billion for the RUS's grant and loans programs, and $600 million in private activity bonds for broadband projects.

A Deep Dive Into the BEAD Program's Matching Funds

BROADBAND BREAKFAST CLUB | *SEPTEMBER 2023*

Following [announcements from large fiber equipment providers](#) that they are building fiber equipment manufacturing plants in the United States, the telecommunications industry is turning its focus from domestic manufacturing requirements to other regulatory burdens that have the potential to bar Broadband Equity Access and Deployment projects.

Of those regulations, matching and letter of credit requirements could be the major hurdles. Rules for the $42.5 billion BEAD program require that grantees produce a match of at least 25 percent of total program awards on top of a letter of credit. A letter of credit certifies that a bank will reimburse the federal government with 25 percent of program awards in the event of a default.

"Nobody wants to see BEAD funding go to waste. But requiring applicants to provide a 25 percent match *and* a 25 percent letter of credit risks shutting out those best-placed to bridge the digital divide and does little to protect U.S. taxpayers," Connect Humanity CEO **Jochai Ben-Avie** told Broadband Breakfast. Connect Humanity is a digital equity advocacy group that invests in community connectivity providers.

Matching requirement

Many small, rural, minority and women-owned internet service providers and municipalities are ready and willing to build affordable, high-speed broadband in America's least served and most marginalized communities, said Ben-Avie. "But, unlike the large incumbents, they don't have millions of dollars spare to scale the BEAD capital hurdle," he said. He called the letter of credit requirement a test of a provider's ability to lock up working capital rather than the provider's ability to deliver high-speed broadband.

"Past federal broadband investments had either a match requirement *or* a letter of credit — not both,"

said Ben-Avie. This combination of requirements will lock out community-oriented providers and take the 'equity' out of BEAD. He concluded that "it's baffling that the [NTIA] thinks the least connected, most in need communities have the $25 billion plus that would be needed to meet these match and letter of credit requirements."

Matching funds come in the form of cash matches or in-kind contributions, in which the match is a non-cash donation of property, goods or services which benefit the project. In-kind contributions are eligible to meet match requirements so long as they meet certain criteria.

[Eligible in-kind contributions](#) include employee or volunteer services, equipment, supplies, indirect costs, computer hardware and software and the use of facilities. Additionally, states and municipalities could contribute access to rights of way, pole attachments, conduits, easement or access to other types of infrastructure.

Expectations for BEAD match

Jorge Fuenzalida, managing partner at consulting firm JLA Advisors, told Broadband Breakfast that he expects there to be a total of $20 billion in matching funds, both cash and non-cash, to be provided over the course of the BEAD program. He expects that it will be higher than the minimum $14 billion due to the subgrant bidder's inclination to end at a higher percentage when they have a plant nearby or when the density of the targeting area is higher.

"In general, the more urbanized the area, the higher amount of match," Fuenzalida predicted. He added that states will likely provide matching funds as well in the form of a non-cash contribution, "such as offering locations, towers, rights of way and in some cases access to a state-owned fiber network."

Remaining funds from some of the previous federal programs may be able to be tapped into as matching funds, he said.

Fuenzalida said that the matching fund requirement causes investors and operators to have some "skin in the game" which is a positive motivation to develop high-quality, enduring service. "It will allow entities that have already invested and committed to certain communities have a strong chance to further serve those surrounding areas," he said. However, small operators without ready access to capital may get outbid by those with greater access to capital.

John Windhausen, executive director of the Schools, Health and Libraries Broadband Coalition advocacy organization, told Broadband Breakfast that he would not expect more than 25 percent match for the BEAD program.

Due to the nature of the BEAD program to finance builds into high-cost, hard to reach areas of the country, there is not likely to be much competition in the program. He claimed that providers will not be incentivized by competition enough to offer higher amounts of matching funds. He added that in more mountainous areas, networks will need to be built from scratch and even a 25 percent match will be a stretch.

Operating costs of these rural networks will be significant as well, he said. The Federal Communications Commission may be obligated to provide support for operating expenses down the road as networks are built in outlying areas, which it is already doing through the high-cost program.

The industry may see waivers for match requirements in certain areas that are hard to reach and so costly that the 25 percent match will discourage applicants. Yet the coalition is primarily concerned with the letter of credit requirement.

Letter of credit

Under current regulations, grant applicants must provide a letter of credit for 25 percent of project costs. This is designed to demonstrate their financial capacity to meet the program's obligations.

Matching funds provide reassurance that providers and municipalities are invested in the process, said **Kelty Garbee**, executive director of Texas Rural Funders, a rural advocacy group. "But the letter of credit requirement will make it impossible for many small and rural communities to access BEAD funds."

The CEO of provider Totelcom Communications, **Jennifer Prather**, told Broadband Breakfast that "this definitely favors large national providers who have the collateral and banking relationships to easily meet the letter of credit requirements."

Where can providers find matching funds?

Procuring the required matching funds is a sizable concern for many providers. Experts have suggested a variety of sources, including counties and other federal funds.

Darren Farnan, chief operating officer of rural electric co-op United Fiber, said in a recent "Where's The Funding?" event that counties can help network operators with the matching piece with money from other federal funds. Missouri counties used Capital Projects Fund and Rural Digital Opportunity Fund money to help with the co-op's broadband applications.

"Getting counties involved early is extremely beneficial," he said. He urged providers to build trust and partnerships with county officials. Widespread internet connection cannot happen without utilizing all the funding available to get networks to areas that would never have gotten it otherwise, said Farnan.

He added that electric co-ops are uniquely positioned to fund rural buildouts. Community builds — networks that have 40 to 60 homes per mile rather than the 2 to 4 addresses per mile in extremely rural areas — can be used as a funding mechanism, he said. Community builds balance out homes per mile and can fund networks in extremely rural areas.

This approach is unique to co-ops because they do not operate for profit and can use community builds to subsidize high-cost areas. Co-ops can also offset

cost of both electric and broadband builds by combining the processes and workforce in the company, he concluded.

Savid Johnson of the U.S. Department of Housing and Urban Development added that the Community Development Block Grant program is one of the only federal grant program that allows its funds to be used to meet minimum match requirements for other programs. The program provides annual grants to states and local governments to be used for economic and community development for low and moderate-income individuals.

HUD Community Planning and Development Specialist **Erik Pechuekonis** said that the program "can also function as a gap filler so if you don't get quite enough funding, we can step in and fill that role as well... We generally work well with other federal state programs."

Connect Humanity Chief Investment Officer **Brian Vo** has advised providers looking at the looming matching requirement to start "with a conversation on how you want to optimize your capital." A provider with 10,000 subscribers might be interested in more of a project or revenue-based financing where small providers may want to avoid banks completely due to recessionary and inflation pressure, he said.

Vo added that nonprofit organizations often have greater flexibility in providing funding compared to government agencies and banking institutions, but still require applicants to be knowledgeable about their financial abilities, market conditions, potential partnerships, risks and threats.

Best practices for finding the funding

Regardless of where the money is coming from, most experts agree that it is important for providers and potential subgrantees to start the matching process as early as possible by researching funding options and building capital stack and financing resources.

JLA Advisors' Fuenzalida cautioned that the BEAD process is different from previous broadband programs:

"It will take time and effort to identify where you want to bid, what it will cost you to serve, what will be your resulting business case including competition, and finally what level (cash or in-kind) matching funds you will require."

Providers need to be creative and take a long-term view: "Providing broadband to these unserved and underserved geographies will provide these communities opportunities that will support them and the provider for decades."

Chris Perlitz, managing director with Municipal Capital Markets Group, talked up the role of municipal bonds for their tax-exempt benefits for investors. Such bonds are debt obligations issued by a municipality. They are often among the most affordable means of raising capital, he said in a "Where's The Funding?" session.

He predicted that municipally owned or operated broadband networks are the future. Because of that, financing options for the future should leverage the strength of municipalities. "Donations and grant products are usually going to flow toward municipalities much easier than it will to for profits."

Among the various forms of financing for broadband providers include bank debt, mezzanine debt, convertible notes and equity, added **David Hartin**, president of ITC Holding, a private equity firm with holdings in telecommunications. Providers must be mindful of the cost per passing and return on investment when participating in grant funding, he continued.

Mezzanine debt refers to debt that offers repayment terms adapted to a company's cash flows. Convertible notes refer to a type of bond that the holder can convert into common stock in the issuing company or cash of equal value and functions like a hybrid security with debt and equity-like features.

"Make sure your valuation expectations are right," Hartin said. "There's so many times that we meet with entrepreneurs and they're thinking that they heard a valuation that somebody got a couple years ago and just make sure that's applicable to your business because as you know, the smaller you are, the smaller the multiples will be because there's less upside."

Hartin suggested the providers adopt tools to help manage financial management topics such as cash flow, obtaining letters of credit, navigating the current market environment and managing construction costs. He also advised applicants to build relationships with their state broadband offices to discover additional funding sources and consider partnering with private equity firms.

Pierce Verchick, head of broadband lending at LiveOak Bank, said that banks will help providers in whatever way they can to get the money they need to build out BEAD networks, referring to ways banks can help ease letter of credit burdens.

Middle mile program match

Included in the Infrastructure Investment and Jobs Act which authorized the BEAD program was the Enabling Middle Mile program which set aside $1 billion for middle mile infrastructure across the United States. The program reported in June that it nearly doubled the amount of federal funds in private matching totaling $930 million.

In addition to the federal funds awarded, entities brought forth $848 million in other funding. That is the equivalent of 47 percent of the total project cost, or more than 91 percent match of the federal project funds.

The money will support 35 projects across 35 states to invest in the network that connects to last mile infrastructure. The match amount for awarded projects was high because of the competitiveness of the program, said CEO of telecom company Tilson, **Joshua Broder**. Experts estimate that the ideal investment in middle mile would be close to $7 billion, a $6 billion deficit.

Furthermore, many middle mile projects needed little subsidy to make the investment profitable for providers, added Broder. In contrast, BEAD program investments are last mile networks in unserved or underserved areas which increases cost for build out, making them less economically feasible for providers and thus limiting the amount of match funds available to the projects.

Middle mile had more bidders because it attracts more customers and users with more competition that is easier to finance due to the certainty of return and fewer operating costs in comparison to last mile through the BEAD program, agreed Windhausen.

Mark Goldstein, president at the International Research Center, said that the 25 percent match in the BEAD program will be difficult for providers to achieve.

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