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VIA ELECTRONIC MAIL

To: Jen Leasure, The Quilt

From: Jeff Mitchell

Re: **Monthly Broadband Policy Update – through September 30, 2021**

Capitol Hill

As of September 30, 2021, Speaker Pelosi (D-CA) had not brought the $1.1 trillion Senate infrastructure bill language up for a vote in House.[1] This does not mean the bill is dead, but it shows the Speaker did not have enough votes from House Democrats without simultaneous consideration of a reconciliation package which could include as much as $3.5 trillion in additional spending. The Senate has not yet voted on a reconciliation package, with Sens. Manchin (D-WV) and Sinema (D-AZ) refusing to support the $3.5 trillion number (no Republican votes are needed). Manchin has indicated that, with conditions, he would support $1.5 trillion and negotiations between centrist and progressive Democrats and the White House continue.

Treasury Department

The Department of Treasury has finally released application guidance for the $10 billion Capital Projects Fund, which will provide *non-competitive* grants to states, territories, and Tribal Governments for "critical" broadband connectivity infrastructure projects for the "unserved." Grant recipients (*i.e.*, the states) "may award funds to Subrecipients, such as other levels or units

[1] The broadband provisions include the following:

- $42.45 billion for NTIA broadband grants to states (25% match requirement in most cases)
  - Unserved defined as lacking 25 Mbps down/3 Mbps up
  - Underserved defined as lacking 100 Mbps down/20 Mbps up

    (Based on FCC maps to be established under the previously enacted Broadband Data Act.)
  - Anchor institutions lacking "gigabit level service" apparently receive the lowest priority for funding.
- $1 billion for NTIA middle-mile broadband grants (not to states) "to reduce the cost of connecting unserved and underserved areas to the backbone of the internet" and to promote network "resiliency."

of government (*e.g.*, municipalities or counties), non-profits, or private entities. For example, for Broadband Infrastructure Projects, Subrecipients may include co-operatives, electric utilities, and other entities that build or operate broadband networks, including networks that are owned, operated by, or affiliated with local governments."[2]

The state-specific funding allocations, which are heavily but not exclusively weighted by population, are available here. $100 million is available for Tribal Governments and territories, respectively, with the $9.8 billion balance going to the states. Application windows are as follows:

Type	Application Portal Launch Date	Deadline to Request Funding	Deadline to Submit Grant Plan
States, Territories & Freely Associated States	September 24, 2021	December 27, 2021	September 24, 2022
Tribal Governments	October 1, 2021	June 1, 2022	Not Applicable

Eligible projects include: Broadband Infrastructure Projects (at symmetrical speeds of 100Mbps); Digital Connectivity Technology Projects (for the purchase or installation of devices and equipment, such as laptops, tablets, desktop personal computers, and public Wi-Fi equipment); and Multi-Purpose Community Facility Projects (the construction or improvement of buildings designed to jointly and directly enable work, education, and health monitoring located in communities with critical need for the project). There was a September 30, 2021 webinar for states (slides to be made available); the webinar for Tribal Governments will be on October 6.

Treasury is also administering the Coronavirus State and Local Fiscal Recovery Funds (CSLFR), a $350 billion program to aid states ($195.3 billion) and localities ($154.7 billion) recovering fiscally from COVID-19. CSLFR funds can be used to invest in broadband infrastructure (see Fact Sheet at pages 7-8).[3] The helpful program FAQ was most recently updated in July 2021. The interim rules for the CSLFR required broadband projects to deliver 100 Mbps symmetrical service in most cases. Some rural carrier association comments sought to dilute this standard to 100/20 Mbps.

National Telecommunications and Information Administration (NTIA)

On September 1, NTIA launched an interactive guide to all federal broadband funding. (This interactive guide replaces the previous static guide.)

[2] *See Guidance* at page 2.

[3] We understand that California relied in part on CSLFR funding to launch its $6 billion middle-mile initiative in which CENIC will be a partner.

- Broadband Infrastructure Program (BIP) ($288 million): NTIA announced that it received more than 230 applications representing over $2.5 billion in funding requests across 49 states and U.S. territories. The program's web page has links to the Notice of Funding Opportunity (NOFO), links to the four sets of FAQs, and links to past webinars. (Benton Foundation has good analyses of BIP here and here).

- Tribal Broadband Connectivity Grants Program ($980 million): On September 8, 2021, NTIA announced it received more than 280 Applications representing over $5 Billion in funding requests.

- Connecting Minority Communities Pilot Program ($285 million): Applications are due by December 1, 2021. The page above links to the Notice of Funding Opportunity (NOFO), FAQs, and past webinars. The next webinars will be held October 20 and 21.

USDA – Rural Utilities Service

Proposed Reconnect projects can be viewed here (must create free log-in to access); 2019 awardees are identified here; 2020 awardees are here; proposed and funded projects are depicted on an interactive map here. The most recent RUS Community Connect Grant program annual application window is now closed; the Distance Learning & Telemedicine Grant Program annual application window has also now closed.

Precision Agriculture

The next meeting of the FCC's Precision Agriculture Connectivity Advisory Task Force will be October 14, 2021. Their most recent interim report is from March 2021: Accelerating Broadband Deployment on Unserved Agricultural Lands. Background and links to prior meetings are available here. John Deere has a recent FCC filing highlighting their latest technology. The FCC's Office of Economics and Analytics in December 2020 released a working paper on the impact of broadband availability on agriculture. NTIA's September 2020 webinar on precision agriculture is available here. Purdue University announced in August 2020 that it was collaborating with the National Science Foundation-funded Engineering Research Center to develop the Internet of Things for Precision Agriculture.

Mapping

NTIA has released an interactive national broadband mapping tool intended to identify "Indicators of Broadband Need" in specific regions or localities. This tool is separate from NTIA's National Broadband Availability Map (NBAM) (scroll down), which reaches 37 states but is not public. For more information about NBAM, email nbam@ntia.gov. Microsoft in August 2021 updated its cloud-based measurement of the number of people accessing the internet at

broadband speeds, reporting to the FCC that "in October 2020 approximately 120.4 million people in the United States – more than a third of the U.S. population – were not using the internet at broadband speeds (greater than or equal to 25 Mbps)."

Federal Communications Commission

The FCC at the September 30, 2021, open meeting approved two items Reassessing the 4.9 Ghz Band for Public Safety including a request for comment, and issued a Public Notice Authorizing 6 GHz Band Automated Frequency Coordination Systems, among other things. These are addressed briefly in the **Spectrum** section below. The agenda for the next open meeting on October 26 has not been released yet.

Connected Care Pilot Program

On July 14, 2021, the Commission announced program deadlines, including a January 17, 2022 deadline to post an initial request for services (Form 461). The Commission released additional rules and guidance for the program in June 2021. About $57 million of the $100 million in funding has now been awarded – the full list of approved projects is here. The FCC's Connected Care Pilot webpage has full background on the program.

COVID-19 Telehealth Program

Congress in December 2020 authorized $249.95 million for Round 2 of COVID-19 Telehealth Program awards. The FCC released Round 2 program rules in March 2021 (the application window is closed). The FCC on September 29, 2021, announced the second group of Round 2 COVID-19 Telehealth applicants, representing $41,113,186 in funding to 72 health care providers. (To date, 134 awardees have received funding commitments for $83,093,531.) Invoicing guidance for Round 2 was released in August 2021.

Emergency Broadband Benefit Program

The $3.2 billion Emergency Broadband Benefit (EBB) FCC program created by Congress launched May 12, 2021. A program overview with links to more information is available here and within the public notice. While the EBB was a COVID-19 initiative, it was a pre-cursor to a permanent Lifeline program that supports broadband. The bi-partisan infrastructure bill, if it

passes, will provide $14.2 billion for this new program, called the Affordable Connectivity Program.

Emergency Connectivity Fund

The FCC webinars on the $7 billion Emergency Connectivity Fund (ECF) (from June 25 and August 3) are viewable here. The initial 45-day application window closed August 13, 2021. The FCC in August announced that over $5.1 billion in funding requests were filed during the first window – and that a second window would open from **September 28 to October 13, 2021**. The FCC announced on September 21, 2021, that late filed first-window applications would be automatically considered timely-filed in the second window without further action by applicants. Notably, this second window will continue to address *the current school year* (July 1, 2021 to June 30, 2022) rather than reimburse for prior eligible purposes (made between March 1, 2020 and June 30, 2021). Application information is available here.

The ECF order was published in May 2021 with final (corrected) rules published in July 2021. Funding for new network construction is available in very limited circumstances. The subsidy is 100% and there is no separate competitive bidding requirement – although state and local procurement rules apply. The Pennsylvania Department of Education has prepared a helpful summary of the order here; American Library Association's summary is here.

E-rate

The annual request for comment on next year's eligible services list (ESL) is underway with reply comments due October 12, 2021. Although the FCC cannot use the ESL process to add new services (vs. clarifying existing service categories), many commenters take the opportunity to advocate for new services anyways. SHLB filed comments this year supporting the addition of cybersecurity services and Wi-Fi on school buses to the ESL.

FCC on September 30, 2021, clarified its definition of eligible library to ensure that all Tribal libraries could participate in the program. The FCC in June 2021 granted SHLB's request for a further extension of the deadline to complete special construction projects until June 30, 2022. In July 2021, SHLB and several other groups requested a further extension of the pandemic-driven E-rate gift rule waiver until June 30, 2022, which would line up with the ECF gift rule waiver.

Rural Health Care

On August 13, 2021, the FCC granted waiver relief to the Utah Education and Telehealth Network (UETN) on a competitive bidding issue dating back to funding year 2017. UETN submitted a master contract in the Rural Health Care (RHC) program that UETN had negotiated in the E-rate

program, which is generally allowed under RHC program rules. However, at the time UETN submitted the contract to USAC, USAC's E-rate division had not yet formally approved the contract. While the E-rate division did eventually approve it, USAC refused to accept the contract in the RHC program because it had not been approved at the time it was initially submitted. The FCC had previously denied UETN's appeal and request for waiver however, on reconsideration, upheld its previous denial but found it was in the public interest to grant a waiver of its rules.

The American Hospital Association in May 2021 released a report from its Future of Rural Health Care Task Force that is quite thorough.

Spectrum

In this section of the monthly broadband policy update, we are maintaining short summaries of selected FCC spectrum proceedings that are active and which are expected to impact the public availability of broadband. Because each of these items are often quite complex, we are focused on broad summaries and major developments only.[4]

L-Band (1.0GHz to 2.0GHz)

Although unanimously approved by the Commission, the April 2020 Ligado Networks (f.k.a. LightSquared) decision allowing use of a portion of the so-called L-band spectrum, the decision continues to draw opposition. Because Ligado's spectrum is close to spectrum reserved for GPS, the Department of Defense (DOD), Department of Transportation (DOT), and aviation and other interests strongly opposed the FCC's move. NTIA (on behalf of DOD and DOT) challenged the FCC's decision through a petition for reconsideration and a petition for stay, however the FCC in December 2020 denied NTIA's petition. A high-profile lobbying campaign is apparently underway to reverse the decision (April 2021) and it has borne fruit, with Sen. Inhofe successfully including provisions in the 2021 Defense Authorization Act requiring DOD to report on damage to DOD systems caused by Ligado and, more recently, introducing a bill with bi-partisan support that would require Ligado to compensate satellite users harmed by interference. Sen. Inhofe recently

[4] Here is a short but helpful backgrounder on the relative importance of the different bands in the 5G era (courtesy Jeremy Horowitz at venturebeat.com):

> The . . . low band tier covers a lot of space, slowly, while the . . . mid band covers less space at faster speeds, and the . . . high band covers the least space at super-fast speeds. . . . One low band (600-700MHz) tower can cover hundreds of square miles with 5G service that ranges in speed from 30 to 250 megabits per second (Mbps). A mid band (2.5/3.5GHz) tower covers a several-mile radius with 5G that currently ranges from 100 to 900Mbps. Lastly, a high band (millimeter wave/24-39GHz) tower covers a one-mile or lower radius while delivering roughly 1-3Gbps speeds. Each of these tiers will improve in performance over time.

got the new Secretary of Commerce to restate the Department's previous opposition to the FCC's Ligado order (NTIA is part of the Department of Commerce).

2.5 GHz (formerly EBS)

The FCC in 2019 decided to auction remaining unlicensed Educational Broadband Spectrum (EBS) (2.5 GHz band) to commercial users. This spectrum is suitable for mobile and fixed point-to-point wireless services. Prior to the auction, tribal entities in rural areas had a limited opportunity to apply for licenses for available 2.5 GHz spectrum in their areas through a "Rural Tribal Window." That window closed in September 2020 and the FCC is processing and accepting applications. (Once accepted, applications are subject to further review and a public comment period before they are finally approved.) Tribal license grants so far are listed here (click the "Releases" tab) – the most recent license grants occurred August 21, 2021. The Commission in January released a Public Notice seeking comment on proposed auction procedures, the first step toward conducting auction of the remaining spectrum, possibly in 4Q 2021 but more likely in 1Q 2022.

3.45-3.55 GHz

The DOD in August 2020 agreed to vacate a 100 MHz band from 3.45 to 3.55 GHz to allow for 5G use, clearing the way for an auction of this valuable spectrum for 5G deployment. The FCC in March 2021 established rules for the new band and the auction is scheduled to begin in October 2021. The Wireless Internet Service Providers Association (WISPA), in March 2021 announced a proposal to the FCC to obtain 200 MHz between 3.1 and 3.55 GHz "for coordinated, non-auctioned, high-powered, point-to-multipoint use, on either a shared or licensed-by-rule basis."

Citizens Broadband Radio Service (CBRS) (3.55-3.65 GHz)

The FCC's CBRS auction of Priority Access Licenses (PALs) closed in 2020 netting over $4.5 billion, with all three major wireless carriers bidding. General Authorized Access (GAA) allow unlicensed access to available channels managed by a frequency coordinator called a Spectrum Access System (SAS). Information about SAS functionality – which is critical to all future spectrum sharing applications – is available here and here. A good general non-legal web resource for CBRS is available here. Rural carriers in April 2021 began an effort to get the FCC to modify the power rules for CBRS – a modification that could impact lower power users. A good article about CBRS networks helping K-12 schools bridge the homework gap is here.

C-Band (3.7-4.2 GHz)

The C-Band auction ("Auction 107") commenced December 20 and wrapped up January 15. Up for grabs was 280 megahertz of spectrum in the 3.7–3.98 GHz well-suited for 5G. All 5,685

available spectrum blocks were auctioned with gross proceeds exceeding $80.9 billion – far in excess of the $60 billion estimated. Complete auction results are available here and here.

4.9 GHz Band

Since the September 2020 reform order was passed on a party-line vote, taking a state-by-state approach to repurposing 50 MHz of the 4.9 GHz spectrum, public safety interests were opposed. They ultimately circulated a petition to have the spectrum allocated instead to FirstNet. The Commission in September 2021 voted to vacate the 2020 decision, instead launching a new rulemaking that will explore options for a unified national approach.

5.9 GHz Band

The Commission in late 2020 approved rules to reorganize spectrum previously reserved for the transportation sector ("Dedicated Short-Range Communications" or DSRC) making 30 MHz available in the upper band to support development of next generation "Cellular Vehicle to Everything" (C-V2X) technology, while freeing up the lower 45 MHz of the 5850-5925 MHz band. The reorganization increased spectrum available for unlicensed Wi-Fi utilization – strongly supported by Qualcomm and silicon valley interests – but was opposed on safety grounds by transportation interests including state departments of transportation for all 50 states. Congress continues to apply pressure on the FCC to revisit the decision and the Biden Department of Transportation is apparently open to reexamining these concerns. In early June 2021, transportation interests filed suit in the D.C. Circuit; petitioners include the Intelligent Transportation Society of America and the American Association of State Highway and Transportation Officials, and the Amateur Radio Emergency Data Network, a nonprofit that runs a high-speed data network designed for emergency communications and amateur radio.

6 GHz Band

In April 2020 the FCC authorized 1200 MHz of spectrum to be available for two kinds of unlicensed use of the 6 GHz band: low power indoor usage (Wi-Fi) and standard power usage anywhere. Some claim this is the most important decision the FCC has made on unlicensed spectrum use in 25 years. In October 2020, the DC Circuit denied emergency requests to stop the 6 GHz order from taking effect – however the cases continue. Interests opposed to the FCC's 6 GHz order included AT&T, the National Association of Broadcasters (NAB), public safety groups, and incumbent utilities. Generally, opposing interests fear interference with incumbent operators with AT&T, for example, expressing concern that existing microwave links used for network backhaul will be disrupted. In a September 2021 Public Notice, the FCC began the process for authorizing an automated frequency coordinator (AFC) that will be required for standard power usage (outside of the home).

12 GHz

This October 2020 article from Fierce Wireless and an April 2021 article from the American Enterprise Institute provide a good overview of the issues around 12 GHz, which is a band currently licensed exclusively to satellite providers (and used by SpaceX among others), but is also suitable for 5G. The NPRM adopted in January 2021 sought comment on whether it is possible for mobile service to share use with the current satellite users. With the comment period now closed, battle lines have formed between those who believe the spectrum can be shared and those who see a threat to existing satellite service.

White Spaces

The unused spectrum between TV station channels or in places where channels are vacant are called "white spaces." This vacant broadcast spectrum represents a resource for mobile broadband, particularly in rural areas. The FCC approved proposed rules in October 2020 that are expected to protect broadcasters while allowing innovative 5G and broadband deployment in the unused channels. These rules were the product of a negotiated industry consensus between broadcasters and groups such as Microsoft who have helped perfect the technology necessary to make spectrum sharing in these spaces work.

Low-Earth Orbit (LEO) Satellite

Elon Musk's SpaceX in October 2020 launched its "Better Than Nothing Beta" test of its Starlink LEO satellite internet service. The beta has a $499 set up fee associated with the equipment needed to connect, and a $99 monthly fee. A Starlink spokesperson explained: "Expect to see data speeds vary from 50Mb/s to 150Mb/s and latency from 20ms to 40ms over the next several months as we enhance the Starlink system. There will also be brief periods of no connectivity at all." Amazon is also launching a massive LEO project, called "Kuiper." SpaceX ended up being a controversial big winner in the Rural Digital Opportunity Fund (RDOF) reverse auction, winning $885.5 million of the $9.2 billion available.[5] Separately, early June 2021 saw three separate court challenges of FCC decisions regarding Starlink from Dish Network, Viasat, and a consulting firm called the Balance Group (via Law360 [subscription required]). Viasat's request for a preliminary injunction was denied on July 20, 2021.

[5] AT&T has a useful overview of the complete RDOF auction results that, of course, also provides the big ISP perspective. A more skeptical perspective on the RDOF results can be found here. In May 2021, RDOF came under new attack from the Center for Individual Freedom and other groups based on a just-released study from the Competitive Carriers Association (CCA) showing that "286,000 locations with almost 403,000 people that are poised to receive [RDOF] subsidies already have robust connectivity" – even though RDOF was intended for areas "wholly unserved" by broadband. More on RDOF problems in this Benton Foundation analysis.

Universal Service/Digital Divide

SHLB finally released its report on the future of the Universal Service Fund (USF) – available here. SHLB's report pegs the major decline in the revenue base in recent years to the shift away from voice to data within the mobile service revenue category. Recent public statements from some FCC officials are favorable to a reform initiative.

Deloitte in April 2021 released an interesting report providing a good summary overview of the current digital divide. The Verge also has an updated (May 2021) look at the broadband gap using Microsoft cloud services data. For a comprehensive look at the problem along with specific policy recommendations, the National Urban League in April 2021 released the "The Lewis Latimer Plan for Digital Equity and Inclusion" – essentially a privately commissioned reboot of the National Broadband Plan of 2011 (with Blair Levin among other influential authors). The FCC's 2020 Universal Service Monitoring Report contains summary data for all universal service programs (data through September 2020). USAC's 2020 Annual Report (released March 31, 2021) also provides a useful overview of USF data.

Net Neutrality

Recall the DC Circuit in upholding the FCC's repeal of net neutrality rules reversed the FCC claim of blanket preemption of state-specific rules – meaning preemption claims must proceed case-by-case. Other than California and Vermont, four other states have enacted some form of net neutrality law (Colorado, Maine, Oregon, and Washington), none of which have yet been challenged by industry. Oral arguments in the California case (appeal from the court's denial of an injunction against the California law) occurred September 14, 2021. The following Amicus briefs were filed in May 2021: Access Now, et al.; Professors of Communications Law and Media Democracy Fund; Electronic Frontier Foundation, et al.; state of New York, et al.; Santa Clara County, California, et al.; and Internet Law Professors. California's answer is here.

The National Conference of State Legislators (NCSL) features a summary of net neutrality efforts by state for 2021 here. The NCSL page now also provides a narrative summarizing the status of previously passed net neutrality laws or resolutions.