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VIA ELECTRONIC MAIL

To: Jen Leasure, The Quilt

From: Jeff Mitchell

Re: **Monthly Broadband Policy Update – through October 31, 2021**

Capitol Hill

House Progressives continue to hold firm in their refusal to vote for [the \\$1.1 trillion bi-partisan Senate infrastructure bill language](#)¹ unless it is paired with a larger (but shrinking) social spending package which would be passed through the Senate via budget reconciliation (requiring no Republican votes). While Pelosi scheduled a stand-alone vote for bi-partisan bill on October 28, that vote never happened. A “placeholder” draft of the reconciliation language was released October 28 – it included \$300 million in additional spending for the Emergency Connectivity Fund, down from \$4 billion in an earlier draft. A House vote on both bills [could happen this week](#).

Meanwhile, needed Senate confirmation hearings for the [nominations of Gigi Sohn and Jessica Rosenworcel](#) to the Federal Communications Commission (covered in more detail below) creates additional pressure on the legislative calendar. Notably, Rosenworcel’s current FCC term lapsed last year. Unless she is confirmed to a new term, she cannot serve once the new Congress begins on or about January 3 – creating the theoretical possibility of a Republican majority on the Commission until either Rosenworcel or Gigi Sohn are confirmed.

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.”

Treasury Department

The Department of Treasury has 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. The state-specific funding allocations are available [here](#). Eligible projects include: Broadband Infrastructure Projects (at symmetrical speeds of 100 Mbps); 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).

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

There was a September 30, 2021 webinar for states ([slides here](#); [webinar recording](#)); the webinar for Tribal Governments was October 6, 2021 ([slides here](#); [webinar recording](#)).

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).² The [interim rules for the CSLFR](#) required broadband projects to deliver 100 Mbps symmetrical service. The helpful [program FAQ](#) was most recently updated in July 2021. In October 2021 Treasury provided [a summary of projects so far](#).

National Telecommunications and Information Administration (NTIA)

President Biden has nominated [ex-Google and Mozilla Foundation executive Alan Davidson](#) to head NTIA. On September 1, NTIA launched an [interactive guide to all federal broadband funding](#). (This interactive guide replaces [the previous static guide](#).)

² 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](#)). NTIA published [proposed service areas](#) on October 4, 2021.
- [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.

USDA – Rural Utilities Service

USDA on October 25, 2021, announced [a third round of the Reconnect Program](#) which will award as much as \$1.15 billion in new funding.³ Similar to prior rounds, there will be a mix of loans and grants, with \$200 million in 100% loans, \$250 million in projects combining loans and grants, and \$350 million in grants only. The maximum grant size is \$25 million and all grants require 25% in match funding. There is also a new 100% grant category which will provide \$350 million for tribal governments and “socially vulnerable communities” with no match requirement and a \$35 million maximum award amount. Several Reconnect webinars are [scheduled in November](#).

Eligible areas and broadband speed requirements, however, have changed in the third round. FCC Rural Digital Opportunity Fund (RDOF) areas are not excluded this time. In addition, prior rounds targeted areas which lacked access to broadband service with speeds of at least 10 Mbps up and 1 Mbps down (10/1) and projects were required to provide service offering at least 25/3. This new round targets areas which lack 100/20 and projects will be required to commit to offering 100/100 symmetrical service. This change has brought [criticism from WISPA](#) (the Wireless Internet Service Providers Association) because it will likely exclude WISPA members from being able to participate and [could result in the overbuilding of existing wireless networks](#).

The most recent RUS [Community Connect Grant](#) program annual application window is now closed; the [Distance Learning & Telemedicine \(DLT\) Grant Program](#) annual application window has also now closed. [USDA also announced](#) \$50 million in awards from the last funding window for DLT – those can be [seen here](#).

³ Previously proposed Reconnect projects can be viewed [here](#) (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](#).

Precision Agriculture

The Benton Institute for Broadband & Society has released a report on precision agriculture: [The Future of American Farming: Broadband Solutions for the Farm Office, Field, and Community](#). The FCC’s [Precision Agriculture Connectivity Advisory Task Force](#) met on [October 14, 2021](#); their next meeting is scheduled for November 10, 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).” A company called LightBox has a similar [effort apparently relying on data from Wi-Fi access points](#).

Federal Communications Commission

On October 26, 2021, President Biden renominated Jessica Rosenworcel (D) for another term as Commissioner and appointed her as Chair of the Commission (which was effective immediately). Biden also nominated Gigi Sohn to fill the open seat on the Commission. [Sohn is co-founder of public interest firm Public Knowledge](#) and was former FCC Chairman Wheeler’s Chief of Staff during the battle over net neutrality. If both nominations are confirmed by the Senate, Democrats will have their 3-2 majority, allowing passage of more controversial items on their agenda such as net neutrality. On the other hand, if Senate Republicans block or delay confirmation hearings until 2022, Chairman Rosenworcel would have to leave the Commission in early January, temporarily leaving a 2-1 Republican majority.

The FCC at the [October 26, 2021 open meeting](#) approved a further round of Connected Care pilot projects (more below). The agenda for the next open meeting on [November 18, 2021](#), and

includes (among other things) [consideration of a petition by Kinéis](#) to deploy Low Earth Orbit (LEO) satellites support Internet of Things devices in the United States.

Connected Care Pilot Program

The Commission released additional rules and guidance for the Connected Care Pilot Program [in June 2021](#). In July 2021 the Commission [announced program deadlines](#), including a January 17, 2022 deadline to post an initial request for services (Form 461). About \$69 million of the \$100 million in funding has been awarded – the full list of approved projects is [here](#) (new projects [announced October 27, 2021](#)). The FCC’s [Connected Care Pilot](#) webpage has more background.

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 (for E-rate)

The initial 45-day application window for the \$7 billion [Emergency Connectivity Fund \(ECF\)](#) closed in August 2021 with [over \\$5.1 billion in funding requests](#) filed and over \$2.3 billion committed ([as of October 12, 2021](#)). A second ECF window ran from September 28 to October 13, 2021 and the FCC recently announced almost [\\$1.3 billion in requests were received](#). Notably, the second window also addresses *the current school year* (July 1, 2021 to June 30, 2022) needs rather than reimbursing for prior eligible purposes. Application information is available [here](#); the FCC FAQ for the program is [here](#).

E-rate

The annual [request for comment on next year's eligible services list \(ESL\)](#) is underway; reply comments were due October 12, 2021. Although the FCC cannot use the ESL process to add new services (vs. clarifying existing 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.

On October 7, 2021, the FCC granted a [request by SHLB and several other groups](#) request [to further extend the pandemic-driven E-rate gift rule waiver](#) until June 30, 2022. The E-rate and ECF gift rule waivers both expire in June 30, 2022. FCC in September 2021, [clarified its definition of eligible library](#) to ensure that all Tribal libraries could participate in the program.

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.

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

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.

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 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 [October 29, 2021](#). The Commission in January 2021 released a [Public Notice](#) seeking comment on proposed auction procedures, the first step toward conducting auction of the remaining spectrum, possibly as soon as 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](#). 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. Recent developments in the proceeding are [discussed here](#); in October 2021, Public Knowledge filed [an amicus curiae brief](#) in support of the FCC.

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

MIT Technology Review in September 2021 offered a review of [Starlink service and plans](#). Starlink competitors in June 2021 failed to convince D.C. Circuit to block the FCC’s authorization for Starlink to begin launching satellites, however the case is continuing with briefs filed in late October and oral arguments scheduled for December 2021.

Amazon’s competing [LEO project](#) called “[Kuiper](#)” plans over 3200 satellites [but has yet to launch its first](#). The project got a boost in October 2021 when Verizon announced it would partner with Amazon in order to use [the Kuiper satellites for cellular-backhaul](#). Amazon’s FCC license gives it until July 2026 to deploy half of the planned number of Kuiper satellites.

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. A lawsuit was filed in October 2021 in the Sixth Circuit challenging the USF on several grounds including over-delegation of authority to USAC. SHLB and other parties plan to petition to intervene in the lawsuit.

The Electronic Frontier Foundation on October 27, 2021, released a report showing that open access networks are the most efficient way to solve the digital divide: [Wholesale Fiber is the Key to Broad US Fiber to the Premises Coverage](#). Deloitte in April 2021 released a 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.