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*VIA ELECTRONIC MAIL*

To: Jen Leasure, The Quilt

From: Jeff Mitchell

Re: **Monthly Broadband Policy Update – March 30, 2021**

### **Capitol Hill**

President Biden on March 11, 2021 signed a further Coronavirus emergency spending package into law – the [American Rescue Plan \(ARP\) Act](#) (\$1.9 trillion). A high-level summary of the major spending components of the legislation can be found [here](#) (courtesy of CTC Technology & Energy) – but the notable highlights include a \$10 billion dollar “capital projects” grant fund for states<sup>1</sup> (made available through the Department of Treasury) and, of course, \$7.1 billion appropriated to the E-rate Program to support broadband to students outside of the classroom (more below on this in the E-rate section). The Treasury Department’s regulations for the capital projects grant fund are due by May 10, 2021, with interested groups including The Quilt submitting comments.

Legislative attention has shifted to an expected non-emergency infrastructure package that will include major broadband spending. On the House side, the Democrats introduced [HR-1848](#), the Leading Infrastructure for Tomorrow’s America (LITA) Act (sponsored by Rep. Pallone (D-PA)). On the Senate side Sen. Klobuchar (D-MN) introduced [S-745](#), the Accessible and Affordable Internet for All (AAIA) Act – which has a companion bill in the House introduced by Rep. Clyburn (D-SC) (a House Majority Whip summary of this bill is [available here](#)). The AAIA is a reintroduction of \$80 billion legislation we were following [last year](#), but with some notable differences, including the replacement of a reverse auction requirement with a “system of competitive bidding.” Here is the quick summary of that section from the House Majority Whip:

Authorizes \$80 billion to fund competitive bidding systems to build broadband infrastructure. Seventy-five percent of the funding is to be used for a nationwide system of competitive bidding to fund broadband deployment in unserved areas, defined as areas with service below 25/25 Megabits per second (Mbps), and areas with low-tier service, defined as areas with service between 25/25 and 100/100 Mbps. The

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<sup>1</sup> By way of example, this article [highlights the potential impact of this funding in Maine](#) (as much as \$120 million). Senate Democrats provided a breakdown of estimated funding to the various units of government [here](#).

remaining funds (25 percent) are to be distributed among States, by population with a minimum guarantee for each State, to conduct statewide systems of competitive bidding for broadband deployment in unserved areas, areas with low-tier service, and to unserved anchor institutions (anchor institutions with speeds less than 1 gigabit per 1,000 users). Both the Commission and State must first hold a system of competitive bidding exclusively for bidders offering gigabit symmetrical service.

While there is talk of passing [a partisan infrastructure package using the “reconciliation” process](#)<sup>2</sup> (which allows Senate passage with a simple majority), bi-partisan alternatives include the \$10 billion [Eliminate the Digital Divide Act](#) re-introduced on March 23 by Senators Manchin (D-WV) and Cornyn (R-TX). Among other things, [this legislation](#) would “distribute \$10 billion to states to build out broadband infrastructure in unserved areas [and would] create a process to deliver funds directly to states based on their proportion of unserved areas and includes a \$1 billion set-aside for high cost areas like West Virginia.”

### **National Telecommunications and Information Administration (NTIA)**

The March 2021 NTIA webinar addressed [NTIA Grant Programs in the Consolidated Appropriations Act of 2021](#), providing an overview of the new [NTIA grant programs](#), including the Tribal Broadband Connectivity Grants (\$1 billion), Broadband Infrastructure Deployment Grants (\$300 million), and the Connecting Minority Communities Pilot Program (\$285 million). Part 2 of this important webinar is [scheduled for April 21, 2021](#). Archived NTIA webinars are [here](#).

There was no March BroadbandUSA Newsletter. The [February BroadbandUSA Newsletter](#) links to articles on state funding for broadband infrastructure in Pennsylvania and Virginia (among others) – see also [this article about CARES broadband funding in Iowa](#). A [November 2020 PEW article](#) provides an overview of states’ efforts to tap CARES Act funding for broadband, with links to resources to track those efforts. [U.S. DOE has a portal](#) to track state usage of the \$31 billion CARES Act Education Stabilization Fund and the National Governors Association reported in November 2020 on [broadband projects](#) using CARES Act funds. Somewhat related, Education Superhighway has published a comprehensive summary of [federal funding sources for K-12 Home Connectivity](#).

### **USDA – Rural Utilities Service**

The Consolidated Appropriations Act of 2021 allocated \$100 million to the USDA Reconnect program. [USDA is currently seeking comments](#) on proposed changes for the next round of the ReConnect Program funding – comments are due April 27, 2021, the same day as the proposed

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<sup>2</sup> The linked article discusses [President Biden’s \\$2.2 trillion infrastructure package](#), announced March 31, 2021, which we will address further next month.

changes become effective. There is a USDA webinar on April 14, 2021 at 2:00 PM ET providing an overview of the last two rounds of funding and discussing the rule changes – [register here](#).

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 application window is now closed; the [Distance Learning & Telemedicine Grant Program](#) is currently closed.

### **Precision Agriculture**

The most recent meeting of the FCC's [Precision Agriculture Connectivity Advisory Task Force](#) was March 12, 2021 and can be viewed [here](#). Background and links to prior meetings are available [here](#). The FCC's Office of Economics and Analytics on December 15, 2020, [released a working paper](#) on the impact of broadband availability on agriculture:

The working paper analyzes the impact of increased broadband availability in rural areas on the productivity of U.S. farms, drawing on both FCC data on broadband availability by census tract and U.S. Department of Agriculture data on agricultural productivity by county, for key row crops like corn, cotton, hay, and soybeans. The working paper finds statistically significant effects of increased broadband service, both in terms of lower costs (fertilizer, fuel, seed, etc.) and higher production (yield). To cite one striking result, the analysis finds that a 1% increase in the number of 25 Mbps/3 Mbps or better broadband connections per 1,000 households is associated with a 3.6% increase in corn yields, as measured in bushels per acre.

The FCC's recently-approved [\\$9 billion 5G Rural Fund](#) will include a \$1 billion set-aside for agricultural use in Phase 2. [Farms are already using private LTE networks with CBRS spectrum](#), including greenhouse monitoring in Missouri and supporting drone-mounted cameras to make real-time decisions on herbicide applications in North Dakota. NTIA's September 2020 webinar on precision agriculture is available [here](#). The April 2019 USDA report on rural broadband infrastructure and next generation 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.

### **Federal Communications Commission**

With [Commissioner Rosenworcel elevated to Acting Chair of the Commission](#), the FCC is deadlocked with a 2-2 tie (Ds Rosenworcel and Starks; Rs Carr and Simington). Until a third Democrat is nominated and confirmed by the Senate, Commission actions will be limited to those that can garner at least one Republican vote. In response to this deadlock, pressure could build

for bureaus to implement certain new policies on “delegated authority” – which do not require a Commission vote but which, if controversial, will increase partisan rancor.

The agenda for the April 22, 2021 FCC Open Meeting has not been announced. The [March 2021 Open Meeting](#) included two items addressing the 3.45 GHz band of spectrum (more below) and an item addressing [5G Open Radio Access Networks](#) – [a fascinating inquiry](#) that could eventually lead to better diversification of 5G equipment supply chains. The [February Open Meeting](#) mainly included staff presentations on new programs or spending recently authorized by Congress, including: the \$3.2 billion for Emergency Broadband Benefit Program; the \$249.95 million for another round of the COVID-19 Telehealth Program; and the \$65 million for the Commission finally move forward on broadband mapping.

## **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.<sup>3</sup>

### **L-Band (1.0GHz to 2.0GHz)**

The [FCC in April 2020 unanimously approved](#) a long-pending request by Ligado Networks (f.k.a. LightSquared) to utilize a portion of the so-called L-band spectrum. 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](#). While [Ligado has raised \\$4 billion](#) to implement 5G deployment in the cleared spectrum, [the cloud of DOD opposition remains](#) with the most recent National Defense Authorization Act (which became law January 1, 2021) authorizing DOD to conduct an independent technical review of the impact of the FCC’s order.

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<sup>3</sup> 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.

### 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](#). 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 proposed auction procedures for an auction by the end of 2021. The 3.1-3.55 GHz band is currently used by DOD for fixed and mobile radar as well as secondary non-federal amateur and experimental users. WISPA, the Wireless Internet Service Providers Association, in March 2021 [announced an innovative 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 on August 24, 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). More 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](#).

Recently Dallas schools were in the news [installing their own wireless towers using CBRS](#). UETN was in the news in October 2020 [announcing deployment of a private LTE network to 25 schools](#) using GAA CBRS spectrum. UETN’s project is expected to deliver robust parking lot access to school networks featuring high speeds and content filtering. [A California K-12 school district](#) is also successfully using CBRS to connect directly with students off-campus (1000 feet and beyond). [Virginia Tech](#), which claimed eight PALs CBRS licenses, is expected to combine those with GAA use to develop innovative private LTE applications.

### 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

From the [Commission’s background on this item](#):

Nearly two decades ago, the Commission designated the 4.9 GHz (4940-4990 MHz) band for use in support of public safety. Today, the 4.9 GHz band remains underused outside of major metropolitan areas, with stakeholders citing high equipment costs and limited availability of broadband equipment, among several barriers to its use. Currently, access to the 4.9 GHz band is restricted to certain entities and use of the spectrum is limited to public safety purposes. Licensees do not receive exclusive use licenses for the spectrum but rather operate pursuant to a coordination framework for shared use of the band. Although nearly 90,000 public safety entities are eligible under our rules to obtain licenses in the band, there are only 3,559 licenses currently issued to 2,090 individual licensees.

[The order](#), which was approved in September 2020, eliminated the exclusive public safety use requirement for the spectrum and permits “one statewide 4.9 GHz band licensee per state (the State Lessor) to lease some or all of its spectrum rights to third parties, including commercial, critical infrastructure, and other users, thus making up to 50 megahertz of mid-band spectrum available for more intensive use.” Public safety interests are upset with the item and have [a petition circulating](#) to have the spectrum allocated instead to FirstNet.

### 5.9 GHz Band

The Commission at the November 2020 open meeting approved rules to reorganize spectrum previously reserved for the transportation sector (“Dedicated Short-Range Communications” or DSRC) in order to support development of next generation “Cellular Vehicle to Everything” (C-V2X) technology in the upper band, while freeing up the lower 45 MHz of the 5850-5925 MHz band. The reorganization increases spectrum available for unlicensed Wi-Fi utilization – strongly supported by [Qualcomm](#) and [silicon valley interests](#) – but continues to be staunchly 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.



### 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 and standard power usage anywhere. By expanding Wi-Fi and increasing opportunities for innovation, the FCC's action is widely expected to [create billions in value for the economy](#). [Some claim](#) this is the most important decision the FCC has made on unlicensed spectrum use in 25 years. On October 2, [the DC Circuit denied emergency requests](#) to stop the 6 GHz order from taking effect – however those cases will continue to be heard. Interests opposed to the FCC's 6 GHz order included AT&T, the National Association of Broadcasters (NAB), and public safety groups. 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.

### 12 GHz

[This October 2020 article from Fierce Wireless](#) provides a good overview of the complicated politics around 12 GHz, which is a band [currently licensed exclusively to satellite providers \(and used by SpaceX among others\)](#), but is suitable for 5G. The [NPRM](#) adopted in January 2021 seeks comment on whether it is possible for mobile service to share use with the current satellite users.

### 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. [In March 2020](#) the FCC proposed updated rules to facilitate increased innovation in the white spaces area. [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 essentially 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](#)." Notwithstanding these well-funded, glitzy LEO start-ups, [skeptics remain](#). [Starlink ended up being a big winner](#) in the

just concluded Rural Digital Opportunity Fund (RDOF) reverse auction, winning \$885.5 million of the \$9.2 billion available. ([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](#).)

### **Universal Service/Digital Equity**

The FCC has released the [2020 Universal Service Monitoring Report](#) containing summary data for all universal service programs (data through September 2020). The current universal service construct, which is over 25 years old, is straining to address the equitable distribution of limited broadband resources – partly reflected in a universal service fund contribution factor just jumped in one quarter from 27% [to almost 32%](#). In March 2021 the FCC announced that the [2<sup>nd</sup> Quarter 2021 Contribution factor will be 33.4%](#). Notably, the related concepts of universal service and digital equity seem to merging, as illustrated by this recent comprehensive Benton report: [“Broadband for America NOW”](#).

### **COVID-19: New Telehealth Programs**

Connected Care Pilot Program: The Commission in January issued a public notice with the first group of awardees in the \$100 million Connected Care pilot program (application window closed December 7): [\\$26.6 million for a group of 14 projects](#), including awards to University of Virginia, University of Mississippi, Duke University, and Temple University. The FCC’s [Connected Care Pilot](#) webpage has full background on the program.

COVID-19 Telehealth Program: Congress in December 2020 authorized a further \$249.95 million for another round of COVID-19 Telehealth Program awards (Round 2). After [briefly seeking public comment](#) on selection criteria for Round 2 [the FCC on March 30](#) released program rules for Round 2. They indicated that an application window for Round 2 will be announced shortly. During the spring of 2020, Congress directed the FCC to establish the [COVID-19 Telehealth Program](#) as part of the CARES Act, appropriating \$200 million for awards (Round 1). Funding for the initial round was exhausted by June 2020 and the final list of awardees is available here ([Excel](#); [PDF](#)). Successful applicants received funding commitments that they can claim by demonstrating the purchase of eligible goods or services by September 30, 2020. [The FCC in September 2020](#) extended that purchase deadline until December 31, 2020; invoices for reimbursement must be submitted to the FCC by July 31, 2021 (more information on invoicing [here](#)).

### **E-rate**

With Congress authorizing a [\\$7.1 billion E-rate “Emergency Connectivity Fund” providing support for off-campus use](#) (from the Treasury, not from the USF), events have overtaken the [petition](#)



[filed](#) by SHLB and a group of education advocacy organizations seeking to use regular E-rate funding for the same. Rules for what is essentially a new program must be enacted within 60 days of enactment (by May 10). The Commission on March 16 [initiated an expedited public comment cycle](#), with initial comments due April 5 and replies due by April 23. The Commission noted the scope of funding as follows:

In providing support through the Emergency Connectivity Fund, the American Rescue Plan directs the Commission to reimburse 100% of the costs associated with the purchase of eligible equipment and/or advanced telecommunications and information services, “except that any reimbursement of a school or library for the costs associated with any eligible equipment may not exceed an amount that the Commission determines, with respect to the request by the school or library, is reasonable.” Section 7402 of the American Rescue Plan defines eligible equipment to mean (1) Wi-Fi hotspots, (2) modems, (3) routers, (4) devices that combine a modem and router, and (5) connected devices. It also provides that the term “advanced telecommunications and information services” means advanced telecommunications and information services, as such term is used in section 254(h) of the Communications Act.

### **Rural Health Care**

The FCC on February 12, 2021, extended the RHC filing window to June 1, 2021, granting [SHLB’s request for the same](#). On March 12, 2021, the FCC announced that [the inflation-adjusted RHC program caps for funding year 2021](#) (July 1, 2021 through June 30, 2022) would be \$612 million for the overall program and \$154.5 million for upfront payments and multi-year commitments under the Healthcare Connect Fund Program. The problems rolling out the 2019 reforms to the Telecommunications Program are reflected in two recent Commission actions: in [late December](#) directing USAC to update the database to include the most recent approved rates; and in [January](#) allowing Alaska health care providers to use rural rates from prior years, thereby exempting from rates in the new database for the next funding year. SHLB [in the letter linked above](#) also asked the Commission to adopt a similar waiver for the lower 48 but extend it to urban rates as well. That request remains pending.

### **Net Neutrality**

[Tech lobbying](#) for the FCC to restore net neutrality has begun – however it is unlikely the Commission will consider acting until the Democratic majority is in place sometime later this year. [Net neutrality legislation in the Democratic congress](#) is also back under consideration. In the meantime, litigation at the state level continues. 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.

In addition to 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 or the federal government. The likely reason for no new cases is potential litigants were looking to the California and Vermont cases to see what those courts do (litigation update below). Meanwhile, Public Knowledge [highlights some of what carriers are up to](#) in the absence of federal net neutrality rules.

#### Federal Courts:

- Eastern District of California. In October 2018, SB 822, the [California Internet Consumer Protection and Net Neutrality Act of 2018](#) was challenged in federal district court in California by the U.S. Department of Justice (DOJ) and [several industry groups in a separate suit](#). The Biden DOJ in early February withdrew its challenge and in late February 2021 [the District Court denied the industry groups' request for an injunction](#) – allowing the law to finally go into effect. The wireless trade group CTIA has appealed this decision to the 9<sup>th</sup> Circuit Court of appeals.
- Vermont District Court. In October 2018 the same industry groups – American Cable Association (ACA), CTIA - The Wireless Association (CTIA), NCTA - The Internet & Television Association (NCTA), and USTelecom challenged Vermont's net neutrality law and executive order in federal district court there and in January 2019 [sought summary judgment](#). [The parties agreed to stays](#) the case, first pending the outcome of the Mozilla case, and then the motions for injunctions in the California litigation. With the California injunction denied, [we will be watching Vermont as well as laws in other states](#).

Controversy over enforcement of the California law erupted immediately [as wireless carriers began claiming](#) the California law prevents them from providing zero-rated bandwidth for a veterans telehealth service provided via mobile devices. [While the carrier claims are contested](#), talks underway are expected to quickly resolve this particular situation.

#### States

The National Conference of State Legislators (NCSL) features a summary of net neutrality efforts by state for 2020 [here](#) (updated January 19, 2021). *Note this list does not identify current laws, only current efforts to pass new laws.*