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VIA ELECTRONIC MAIL

To: Jen Leasure, The Quilt

From: Jeff Mitchell

Re: **Monthly Broadband Policy Update – May 27, 2021**

Capitol Hill

What constitutes "infrastructure" continues to be a sticking point as the White House and Senate Republicans negotiate over a potential bi-partisan spending package. It is unlikely negotiations will stretch much into June. The White House originally started with a $2.25 trillion package; Senate Republicans, led by Sen. Moore Capito (R-WV), responded with a $568 billion counteroffer; last Friday the White House said it would reduce its request to $1.7 trillion which was still more than double what Senate Minority Leader McConnell (R-KY) had said Republicans would be willing to accept. (The White House reportedly has accepted reducing broadband investments from $100 billion to $65 billion.) Latest reports are that Republicans are readying a $1 trillion counter-counter-offer.

Meanwhile, Law 360 reports (behind a paywall) on two other interesting Republican proposals – each would shift funding away from the FCC to USDA and NTIA, respectively:

> The Broadband for Rural Act, introduced by conservatives on the House Agriculture Committee, would shift broadband funding away from being administered by the FCC and instead concentrate it in U.S. Department of Agriculture programs.
>
> The committee's ranking Republican, Rep. Glenn "GT" Thompson of Pennsylvania, said the $3.7 billion annual initiative outlined in the bill stands out because it would help streamline how federal dollars are spent on internet expansion, eliminating areas of federal funding overlap.
>
> There are many broadband infrastructure plans, but the House GOP package puts a detailed plan on paper," he said in a statement, calling his bill the "only proposal that utilizes the expertise of USDA and focuses agencies across the government towards one common goal: connecting all Americans."
>
> Separately, Republicans on the House Energy and Commerce Committee rolled out the American Broadband Act, which would route a five-year, $20 billion broadband

> grant program through the National Telecommunications and Information Administration within the U.S. Department of Commerce. A parallel program would release $3 billion over five years to build out mobile internet infrastructure.
>
> In both cases, the support would be directed to public-private partnerships with "state and local governments that have streamlined their permitting processes so that federal support pays for broadband expansion and not red tape," the committee said in a background sheet. The bill outlines what kinds of red tape slashing local governments must engage in before they'd be considered eligible for the funding.

Treasury Department

In addition to the $10 billion Capital Projects Fund for which rules are overdue, Treasury is also administering a $350 billion program to aid states ($195.3 billion) and localities ($154.7 billion) recovering fiscally from COVID-19: Coronavirus State and Local Fiscal Recovery Funds. Funding from this program can also be used to invest in broadband infrastructure (see pages 7-8) and gives a preview of how Treasury may address allowable broadband speed:

> Treasury's Interim Final Rule [for the $350 billion fiscal recovery program] provides that investments in broadband be made in areas that are currently unserved or underserved—in other words, lacking a wireline connection that reliably delivers minimum speeds of 25 Mbps download and 3 Mbps upload. Recipients are also encouraged to prioritize projects that achieve last-mile connections to households and businesses.

Senator Wyden (D-OR) has sent a strongly-worded letter to Treasury Secretary Yellen asking, among other things, for "served" to be defined as a minimum of 100 Mbps in the final rule. (Coincidentally,[1] a broadband association called "BroadLand" just launched around this very issue. Led by former FCC Commissioner Clyburn, founding members include Google Fiber, Netflix, and various competitive carriers, among others.)

National Telecommunications and Information Administration (NTIA)

On May 19, NTIA's officially launched its $288 million Broadband Infrastructure Grants program – details including links to the Notice of Funding Opportunity (NOFO) available here (click on the "Related Documents" tab). A two-part webinar on the program is scheduled for June 9-10. (Benton Foundation has a good summary here.) There will be two-part webinars on the two other programs in June also: Tribal Broadband Connectivity Grants program ($1 billion), June 16-17;

[1] Not really. There are no coincidences when it comes to Washington policy battles like this.

Connecting Minority Communities Pilot Program ($285 million), June 23-24. Archived NTIA webinars are here.

The monthly BroadbandUSA newsletter for May 2021 can be found here. Among other things, it links to a Congressional Research Service round-up of COVID-19-related federal funding opportunities for broadband for Tribes, Tribal Colleges and Universities, the Bureau of Indian Affairs, the Bureau of Indian Education, and the Indian Health Service. NTIA's National Broadband Availability Map has been updated and now reaches 36 states. The most recently added states are: Arizona, Idaho, Kansas, Maryland, Mississippi, and South Dakota. The map is not publicly available but you can email nbam@ntia.gov for more information.

USDA – Rural Utilities Service

The Consolidated Appropriations Act of 2021 allocated $100 million to the USDA Reconnect program. Minor rule changes to the next round of ReConnect funding became effective April 27, 2021. 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 application cycle has started and closes June 4, 2021.

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 FCC's recently-approved $9 billion 5G Rural Fund will included 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

Details on the May 20, 2021, FCC Open Meeting is available here (no notable broadband items). The agenda for the June 17 open meeting has not been announced yet.

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.[2]

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. A high-profile lobbying campaign is apparently also underway to reverse the decision (April 2021).

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 May 13, 2021. The Commission in January released a

[2] 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.

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.

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.

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

In September 2020, the Commission on a party-line vote approved an order eliminating the exclusive public safety use requirement for the 4.9 GHz, permitting "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 were upset with the item and circulated a petition to have the spectrum allocated instead to FirstNet. Acting Chair Rosenworcel is reportedly circulating an order that would pause the current plan.

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. 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.

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.[3] Competitor Viasat is now challenging certain of Starlink's service claims that qualified it for RDOF funding and, separately, is challenging recent Commission decisions allowing Starlink to move its satellites closer to the earth.

Universal Service/Digital Divide

Deloitte in April 2021 released an interesting report providing a good summary overview of the current digital divide. The Verge also has a look 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

[3] 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.

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 universal service fund ("USF") data.

The current USF construct, which is over 25 years old, is straining to address the equitable distribution of limited resources for broadband – partly reflected in a universal service fund contribution factor that is now over 33%. In response, SHLB may soon be launching a USF contributions initiative which may stimulate action – and even USTelecom (the largest carrier trade group) is now publicly supporting some type of USF contributions reform.

On May 24, 2021, FCC Commissioner Carr through an opinion piece in Newsweek called for USF contributions reform – either through Congress or the FCC – to end the current phone-bill based assessment mechanism and tap "Big Tech" revenues instead. Carr argued:

> [O]ne study shows that the online streaming services provided by just five companies—Netflix, YouTube, Amazon Prime, Disney+ and Microsoft—account for a whopping 75 percent of all traffic on rural broadband networks. The same study shows that 77-94 percent of total network costs are related to adding capacity or otherwise supporting the delivery of those streaming services. Ordinary Americans, not Big Tech, have been footing the bill for those costs.
>
> Yet Big Tech derives tremendous value from these high-speed networks. Indeed, Facebook, Apple, Amazon, Netflix and Google generated nearly $1 trillion in revenues in 2020 alone—an almost 20 percent increase over the prior year. It would take just 0.009 percent of those revenues to eliminate entirely the unsustainable 30 percent tax that currently hits consumers on their monthly bills.

While Carr certainly grabbed attention with his piece – whether this political stunt will actually become a serious policy proposal. Carr notably opposed relying on congressional appropriations to fund the USF.

Emergency Broadband Benefit Program

Because it is primarily consumer-facing, we have not been closely tracking the $3.2 billion Emergency Broadband Benefit (EBB) FCC program recently created by Congress. While the EBB is a COVID-19 initiative, it is clearly a pre-cursor to a permanent Lifeline program that supports

broadband. The FCC has announced that EBB is set to launch on May 12 – a program overview with links to more information is available here and within the public notice.

New Telehealth Programs

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

COVID-19 Telehealth Program: On April 29, 2021, the *very short* application window for Round 2 of the COVID-19 Telehealth Program opened. Applications were accepted through May 6, 2021 and had to be submitted online. Congress in December 2020 authorized a further $249.95 million for Round 2 of COVID-19 Telehealth Program awards. After briefly seeking public comment on new selection criteria, the FCC on March 30 released program rules for Round 2.

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.

E-rate

On May 10, 2021, the FCC released final rules governing the Emergency Connectivity Fund ($7.1 billion authorized by Congress as part of the American Rescue Plan of 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. There will be an initial 45-day application window between July 1, 2021 to June 30, 2022, to purchase eligible equipment/services. If funding remains after the initial window, a "retroactive" window will be opened to reimburse prior eligible purchases (purchases made between March 1, 2020 and June 30, 2021). The Pennsylvania Department of Education has prepared a helpful summary of the order here; American Library Association's summary is here. It is likely SHLB or other groups will seek clarification and possibly reconsideration of certain aspects in the order.

SHLB has filed a request for a further extension of the deadline to complete special construction projects until June 30, *2022*. In March 2020 the Commission provided a one-year extension for special projects that had a June 30, 2020, deadline – mostly funding year 2019 projects but apparently including some older projects that had already received extensions. SHLB argued in its new petition that COVID-19 continues to impact service providers' and applicants' ability to complete projects, affecting up to 90 currently pending projects.

Education Superhighway has released a funding guide for all of the various sources for educational broadband funding (Federal Funding to Close the Homework Gap & Digital Divide).

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. On April 18, 2021, the Commission granted a two-year waiver of the urban and rural rates database for all program participants.

Net Neutrality

Net neutrality legislation in the Democratic congress is 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 outcome in the California case (litigation update below). Meanwhile, Public Knowledge highlights what carriers are up to in the absence of federal net neutrality rules.

The following Amicus briefs were filed recently in the federal appeal of the denial of an injunction against California's law: 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 Vermont case has been stayed pending outcome of the case in California. (Links courtesy NECA Washington Watch.)

States

The National Conference of State Legislators (NCSL) features a summary of net neutrality efforts by state for 2021 here (updated January 20, 2021). *Note this list does not identify current laws, only current efforts to pass new laws*.