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via Federal eRulemaking Portal

Hon. Richard E. Ashooh
Assistant Secretary for Export Administration
Bureau of Industry and Security
U.S. Department of Commerce
14th Street and Pennsylvania Ave., NW
Washington, DC 20230

Docket Number: 200310-0073

RIN 0694-ZA02

RE: Request for Comments on Future Extensions of Temporary General License (TGL)

COMMENTS OF THE RURAL WIRELESS ASSOCIATION, INC.

The Rural Wireless Association, Inc. (RWA)[1] submits these comments in response to the Notification of Inquiry and request for comment published in the *Federal Register* on March 12, 2020.[2]

1. What would be the impact on your company or organization if the temporary general license is not extended?

Not having further TGL extensions would have a detrimental impact on many RWA carrier members and the wireless broadband connectivity they provide in America's

[1] RWA is a 501(c)(6) trade association dedicated to promoting wireless opportunities for rural telecommunications companies who serve rural consumers and those consumers traveling in rural America. RWA's members are small businesses serving or seeking to serve secondary, tertiary, and rural markets. Each of RWA's member companies serves fewer than 100,000 subscribers.

[2] *Federal Register*, Vol. 85, No. 49, pp 14428-14429 (March 12, 2020) (*Federal Register Notice*); *see* https://www.govinfo.gov/content/pkg/FR-2020-03-12/pdf/2020-05194.pdf.

rural markets. Disrupting this connectivity could impact hundreds of thousands of Americans. The last few weeks have borne witness to unforeseen human tragedy followed by global economic uncertainty. In the U.S., the COVID-19 pandemic has forced a surge in study-from-home and work-from-home scenarios. And with "Shelter In Place" orders now in effect in more and more areas of the U.S., streaming video content is now the default entertainment option for most households. All of this has caused operators of wireless networks, whether urban or rural, to closely monitor network performance and eliminate any service disruptions. By stopping TGL extensions now, the Department of Commerce runs the risk of replacement parts becoming unavailable and networks getting shut down.

2. Given the TGL was implemented to prevent the interruption of existing network communications systems and equipment, as set forth in paragraphs (c)(1) through (3) of the TGL, and allow time for companies and persons to shift to other sources of equipment, software and technology (i.e., those not produced by Huawei or one of its listed affiliates), what would be required for your organization or industry to achieve such an end-state? For your industry or organization how long would it take until the authorization(s) in the temporary general license would no longer be required? What are costs associated with this shift and are there issues where the prohibited equipment, software and technology are prevalent and alternative solutions may not be available? Are there specific use cases where cessation of use is not feasible?

In November 2019, the Federal Communications Commission (FCC or Commission) adopted an Order, which among other things, started a rulemaking that would require U.S. carriers to remove Huawei equipment from their networks, provided the FCC found a reimbursement mechanism.[3] RWA has filed numerous comments and reply comments stemming from the Order, including Comments and Reply Comments in response to the further notice of proposed rulemaking portion of the Order (see Attachment A).

In March 2020, President Donald Trump signed into law the Secure Networks Act, which authorizes the FCC to oversee an equipment replace-and-remove program.[4] However, Congress still needs to pass a bill appropriating the reimbursement funding authorized in the Secure Networks Act. Until this appropriation legislation becomes law,

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[3] *In re of Protecting Against Nat'l Security Threats to the Commc'ns Supply Chain Through FCC Programs, Huawei Designation, ZTE Designation*, Report and Order, Further Notice of Proposed Rulemaking, and Order, WC Docket No. 18-89, PS Docket Nos. 19-351, 19-352, 2019 WL 6358656 (rel. Nov. 26, 2019) ("Order").

[4] "Secure and Trusted Communications Act of 2019" ("Secure Networks Act"). Passed by House on voice vote on December 16, 2019. Passed by Senate on voice vote on February 27, 2020. Signed into law by President Donald Trump on March 12, 2020; https://www.congress.gov/bill/116th-congress/house-bill/4998/actions.

either through part of the COVID-19 stimulus packages or the FY2021 budget process, the FCC needs to abstain from formally designating Huawei a “covered company” until required by the Secure Networks Act and the Department of Commerce needs to grant TGL extensions until such time that the current operational equipment and services can be replaced. Based on the requirements imposed by the Secure Networks Act on the FCC, RWA anticipates this occurring no sooner than 18 months after the FCC establishes the rules for its reimbursement process.

RWA stresses that its members fully support the replacement of Huawei network equipment and services. But the timing of each and every federal action is very important. Congress and the President first need to appropriate the reimbursement funding, then the FCC can conduct the replace-and-remove rulemaking and produce a clear roadmap for carriers. The FCC should refrain from formally designating Huaw a covered company until required by the Secure Networks Act, and the Department of Commerce should not lift the TGL until the replacement and removal process in complete nationwide.

Until the networks of rural wireless carriers currently utilizing Huawei equipment are overbuilt (i.e., replaced) and all of their customer bases are transitioned to the replacement networks, those same carriers need replacement parts and components for the legacy networks. Preventing access to those replacement parts risks a complete disruption of mobile communications in many parts of rural America, including rural areas where an RWA carrier member is the only service provider.

3. If the TGL is extended, what potential revisions should BIS consider to enhance effectiveness for both covered transactions and transactions outside of the scope of the temporary general license?

RWA recommends that covered transactions be limited to existing network coverage and not be extended for expansion of the network. Replacement parts and support services should be focused on existing networks.

4. What potential alternatives to either extending the TGL or allowing it to expire will facilitate compliance with the supplemental requirements of the Entity List entries for Huawei and its listed affiliates while reducing complexity for implementation purposes?

Huawei is a telecommunications equipment manufacturer. The FCC has already established a comprehensive rulemaking regarding the continued use of Huawei equipment and services in the United States. RWA recommends that the Commerce Department and the FCC coordinate their respective actions while being mindful of the need to keep legacy systems active as the U.S. pushes to deploy replacement wireless broadband systems that do not pose a national security risk.

5. There may be further costs associated with the current extension or non-extensions of the current TGL (e.g., lost business opportunities) – what are they and what additional guidance should BIS consider?

Non-extension of the TGL will mean that rural wireless carriers run the risk of not having mission-critical parts available that will keep robust mobile and fixed broadband systems operating at a time when 1-in-3 Americans is being urged to shelter in place and tens of millions of additional wage earners or students are being asked to remain at home. Even rural governments are operating "virtually." To say that there will be "lost business opportunities" by not extending the TGL is a massive understatement. All of the "covered company" Huawei equipment identified by the FCC will eventually be replaced. This is now the law. RWA's carrier members are eager to begin the transition process. However, RWA strongly believes legacy systems need to be maintained, with the aid of USF support, as long as they are operational.

Respectfully submitted,

/s/ Carri Bennet

Carri Bennet, General Counsel
5185 MacArthur Blvd., NW, Suite 729
Washington, DC 20016
(202) 857-4519
legal@ruralwireless.org

Attachment A

Comments of the Rural Wireless Association, Inc. (WC Docket No. 18-89)
Filed February 3, 2020

Reply Comments of the Rural Wireless Association, Inc. (WC Docket No. 18-89)
Filed March 4, 2020

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Protecting Against National Security Threats	)	WC Docket No. 18-89
to the Communications Supply Chain	)	
Through FCC Programs	)	

COMMENTS OF THE RURAL WIRELESS ASSOCIATION, INC.

RURAL WIRELESS ASSOCIATION, INC.
Carri Bennet, General Counsel
5185 MacArthur Blvd., NW, Suite 729
Washington, DC 20016
(202) 551-0010
legal@ruralwireless.org

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SUMMARY

The Rural Wireless Association ("RWA") shares the Commission's desire to ensure the safety, reliability, and security of the nation's communications networks. However, RWA is concerned that the proposed rule: (1) fails to effectively protect national security by arbitrarily narrowing the types of telecommunications carriers required to replace and remove covered company equipment; (2) ignores the degree to which equipment components and sub-components need to be replaced in telecommunications networks, which will in turn increase the total amount needed in the reimbursement fund; (3) unnecessarily diverts USF funds from high-cost support, E-Rate, Lifeline, and schools, libraries and rural health care facilities instead of relying upon a Congressional appropriation for such funding; (4) overlooks the need to have a meticulous catalog of reimbursable costs and a phased replace-and-remove deployment schedule; and (5) fails to include a safe harbor covering equipment that is replaced, or, in the alternative, an FCC certification process for replacement equipment.

As a result of reduced USF support, decreasing roaming revenues, and a litany of significant market-specific economic barriers, rural wireless carriers are caught in a world of ever-shrinking revenues and greater deployment demands. Yet at the same time, these carriers continue in their quest to provide at affordable rates the same modern services offered by the nationwide wireless carriers. The Commission is on a course to completely restrict all USF funding to those very same carriers operating these 3G and 4G/LTE wireless networks that cover sparsely-populated markets – markets that are critical to supporting the nation's energy resources, agricultural production, U.S. military facilities, Tribal and Alaskan Native populations, and National Parks and public lands. Thus, to protect U.S. national security and additionally ensure that those living in and traveling to rural areas have service, the Commission

must adopt rules that apply evenly to all telecommunications carriers (not just ETCs) on an equitable basis, maintain mission-critical and carrier-of-last-resort networks until covered equipment is fully replaced by LTE and 5G equipment, and find adequate reimbursement funding from Congress while at the same time maintaining USF support to rural carriers.

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Protecting Against National Security Threats	)	WC Docket No. 18-89
to the Communications Supply Chain	)	
Through FCC Programs	)	

COMMENTS OF THE RURAL WIRELESS ASSOCIATION, INC.

The Rural Wireless Association, Inc. ("RWA"),[1] files these comments in response to the Federal Communications Commission's ("FCC" or "Commission") *Further Notice of Proposed Rulemaking* ("*FNPRM*") seeking input on various proposed actions designed to address potential national security threats to wireless network equipment supported by the Universal Service Fund ("USF").[2]

On November 26, 2019, the Commission adopted a rule[3] that bars USF recipients from using USF money to purchase or support wireless network equipment manufactured or serviced by a "designated company." The first two companies that have been given an *initial* designation by the Commission are Huawei Technologies Company, Ltd. ("Huawei"), and ZTE Corp. ("ZTE").[4] As soon as Huawei and ZTE, or any other companies, are given a *final* designation by

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[2] *In re of Protecting Against Nat'l Security Threats to the Commc'ns Supply Chain Through FCC Programs, Huawei Designation, ZTE Designation*, Report and Order, Further Notice of Proposed Rulemaking, and Order, WC Docket No. 18-89, PS Docket Nos. 19-351, 19-352, 2019 WL 6358656 (rel. Nov. 26, 2019) ("*FNPRM*").

[3] 47 C.F.R. § 54.9.

[4] *See FNPRM*, 2019 WL 6358656, at *1 ¶ 2.

the Commission, USF recipients will be prohibited from spending any of those funds on equipment or services provided by a formally designated company.[5]

Also on November 26, 2019, the Commission, through its *FNPRM*, sought comment on, among other things, a proposal to amend 47 C.F.R. § 54 so that eligible telecommunications carriers ("ETCs") receiving USF support would agree "to remove and replace covered equipment and services from their network operations."[6] To mitigate the impact of any potential replacement-and-removal mandate, the Commission also "propose[s] to establish a reimbursement program to offset reasonable transition costs."[7] RWA's comments address many of the legal, logistical, and financial issues stemming from such a monumental endeavor and respectfully offer practical guidance on how best the Commission can successfully execute, with the necessary legal authority, a nationwide replace-and-remove initiative.

I. INTRODUCTION.

RWA believes that, if the Commission proceeds with a plan to restrict USF funding to telecommunications carriers using covered equipment, it should do so knowing that many rural carriers (and consumers) would suffer, with many carriers being forced to shut-down wireless networks in markets where they are the only wireless provider. Prudent public policy dictates that small and rural carriers with plans to decommission 2G and 3G networks that use covered equipment should be allowed to continue operating with such covered equipment, rather than being forced to expend valuable resources to replace that equipment given that these 2G and 3G technologies are going to be shut down in two to five years as they reach end of life.

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[5] *See id.* at *13 ¶ 40.

[6] *Id.* at *39 ¶ 122.

[7] *Id*.

Additionally, RWA believes that, if the Commission adopts a rule to force some or all U.S. carriers to remove all equipment manufactured or serviced by a covered company, it should do so in a comprehensive and equitable manner. First, any replace-and-removal mandate should be predicated upon access to sufficient congressionally-appropriated funding (with actual funds derived from FCC spectrum auctions) and not be dependent in any way on current universal service funds (including money currently earmarked for high-cost support). Second, the ability to participate in such a replacement program needs to be open to all users of such equipment, whether they are USF recipients, ETCs, or neither. Third, any replace-and-remove initiative should have very clear terms and conditions and clearly identify what components or sub-systems can remain and what must be removed and destroyed. This prospective 'ban' list should also provide carriers with a safe harbor so that remaining equipment (or newly installed equipment) is deemed safe and secure, either because it is certified by the FCC or because carriers using it will be eligible for a waiver of the rules in the future. Fourth, the actual reimbursement policy needs to be clearly spelled-out via a pre-approved Catalog of Eligible Reimbursement Expenses that is similar to what was used in the Television Broadcast Incentive Auction. Finally, the Commission should adopt a replacement-and-removal program timeline, whereby the actual network construction and transition periods are grouped into phases across the nation and timed to ensure there are no procurement burdens on approved equipment manufacturers, a sufficient number of work crews, and as few disruptions as possible.

II. ANY REPLACE-AND-REMOVE MANDATE SHOULD BE EXPANDED TO INCLUDE ALL SIMILARLY-SITUATED CARRIERS, NOT JUST ELIGIBLE TELECOMMUNICATIONS CARRIERS.

The Commission proposes to "limit the removal and replacement requirement to ETCs."[8] However, it also asks whether this particular criterion should be expanded or modified to account for other companies or organizations using covered equipment in the United States, including schools, libraries, and non-ETC telecommunications companies.[9] RWA believes that, if the purpose of the rulemaking is to protect national security by securing the national supply chain, the FCC's "forklift" operation must be comprehensive, or not done at all. While a workable solution should contain a methodical, phased approach to replacing and eventually removing covered equipment, its ultimate goal should be national security integrity. The old adage that "a chain is only as strong as its weakest link" rings true. Therefore, if the Commission willingly overlooks or, even worse, ignores a perceived national security threat in one corner of our country's communications system and instead focuses solely on another corner, it completely misses the forest for the trees.[10]

So long as Congress ties sufficient appropriations to a replace-and-remove mandate, it should not matter whether a company or organization is or is not an ETC, nor should it matter whether that company or organization is a USF recipient. Any FCC effort to protect America's national security needs to focus on all covered equipment deployed throughout the country. However, if being an ETC remains a requirement under the Commission's rules, then the Commission should "allow for otherwise qualifying carriers to become ETCs for the sole

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[8] *Id.* at *41 ¶ 128.

[9] *See id.*

[10] This is particularly concerning where the only distinction between these two corners is how their particular communications sub-systems are funded.

purpose of participating in any removal and replacement program."[11] Similarly, any "small businesses" utilizing covered equipment should also qualify for reimbursement, provided they self-identify as a small business and meet the "small business" term as defined in any reimbursement legislation passed by Congress or rules adopted by the FCC.

III. ANY REPLACE-AND-REMOVE MANDATE SHOULD BE EXTENDED TO INCLUDE NON-USF RECIPIENTS.

Whether non-USF recipients can be part of a comprehensive replace-and-remove initiative is an important issue that must be resolved. RWA is aware of small companies that are not USF recipients that have deployed Huawei or ZTE equipment in their networks. If those small carriers who could not otherwise afford to replace their covered equipment were to "miss the boat" on a comprehensive network replacement program, then the potential risk to U.S. national security would continue to exist. RWA believes the Commission has existing authority to require all users of covered equipment to replace it, provided sufficient funding exists to do so. For companies utilizing spectrum, the authority rests in the FCC's licensing authority under Section 316 of the Communications Act ("Act"). Under that authority, the Commission may require its licensees to abide by technical and other standards as long as it provides a reasoned explanation and notice.[12]

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[11] *FNPRM* at *41 ¶ 128.

[12] The Court of Appeals for the D.C. Circuit ("D.C. Circuit") has repeatedly found agencies' rulemaking power proper when the issues at stake involve legislative, rather than adjudicative, facts and where the proposed rules will have prospective effect and class wide applicability, as in this case. *See, e.g.*, *Comm. for Effective Cellular Rules v. FCC*, 53 F.3d 1309, 1319 (D.C. Cir. 1995); *see also, e.g.*, *Telocator Network of Am. v. FCC*, 691 F.2d 525, 551 (D.C. Cir. 1982); Karen L. Nachbar, *Cellular Telephone Service – Reaffirming the FCC's Authority to Modify Technical Requirements for Licensing,* 64 GEO. WASH. L. REV. 937 (1996).The D.C. Circuit has specifically held that the Commission has authority to change its licensing standards in a rulemaking as long as it provides a reasoned explanation for doing so. *Fla. Cellular Mobile Commc'ns Corp. v. FCC*, 28 F.3d 191 (D.C. Cir. 1994), *cert. denied*, 514 U.S. 1015 (1995). Moreover, the D.C. Circuit has repeatedly held that agencies have wide latitude to change their own policies and the manner in which those policies are implemented. *See, e.g.*, *Rainbow Broad. Co. v. FCC,* 949 F.2d 405, 409 (D.C. Cir. 1991); *see also, e.g.*, *Comm. for Effective Cellular Rules v. FCC,* 553 F.3d 130 (D.C. Cir. 1995). The D.C. Circuit explains that this flexibility is necessary to allow agencies, particularly the FCC, to respond to rapidly changing technological, commercial, and societal aspects as they fulfill their delegated duties.

Section 316(a)(1) of the Act states:

> Any station license or construction permit may be modified by the Commission either for a limited time or for the duration of the term thereof, if in the judgment of the Commission such action will promote the public interest, convenience, and necessity, or the provisions of this Act or of any treaty ratified by the United States will be more fully complied with.[13]

Indeed, it is well established that protecting our national security clearly meets the public interest test.[14] Moreover, the D.C. Circuit has made clear that a change in policy is not arbitrary or capricious merely because it alters the current state of affairs; the Commission is entitled to reconsider and revise its views as to the public interest and the means needed to protect that interest if it gives a reasoned explanation for the revision.[15] Accordingly, under its licensing authority, the Commission may require FCC licensees to comply with its regulations regarding covered equipment, no matter whether the licensee is an ETCs or receives universal service funds.

Under Section 214 of the Act, the FCC similarly has the authority to regulate wireline carriers that do not hold FCC licenses for spectrum.[16] Section 214(a) prohibits any wireline carrier from constructing, extending, acquiring, or operating any line, and from engaging in transmission through any such line, without first obtaining a certificate of authorization from the Commission.[17] Under section 214(c), the Commission may attach to the issuance of the

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See Rainbow Broad. Co., 949 F.2d at 409. Moreover, Congress, in adopting Section 316, broadened the FCC's discretion by providing the FCC with the authority to modify licenses without licensee approval. *See id.*

[13] 47 U.S.C. § 361(a)(1).

[14] *See id.*; *see also In re Metro. Transp. Auth.*, Proposed Order and Order on Reconsideration, FCC No. 16-15, 31 FCC Rcd. 1436 (2016); *Mobile Relay Assocs. v. FCC*, 457 F.3d 1 (2006); *Cal. Metro Mobile Commc'ns, Inc. v. FCC*, 365 F.3d 38 (2004).

[15] *See Mobile Relay Assocs.,* 457 F.3d at 1.

[16] *See* 47 U.S.C. § 214(a).

[17] *See id*.

certificate such terms and conditions as it deems necessary to promote public convenience and protect the public interest.[18] Where an authorized Section 214 holder cannot satisfy the terms upon which the authorization is granted, the FCC may terminate such authority.[19] Accordingly, the FCC may conduct a rulemaking to place a condition on all wireline carriers operating under Section 214 to ensure their compliance with the Commission's proposed equipment restrictions based on the public interest concerns related to national security issues and protecting the communications supply chain.

The Communications Assistance for Law Enforcement Act ("CALEA") also provides the Commission with the authority to impose an equipment replacement requirement.[20] Pursuant to the express terms of CALEA, and under Section 229(b) of the Act, the Commission, is required to prescribe rules that will prevent any interception of communications or access to call-identifying information without authorization.[21] As the Commission's ultimate goal in imposing equipment restrictions stems from the need to prevent unauthorized access and interception, the Commission may, under CALEA, adopt rules that limit or prohibit all carriers from using covered equipment. Furthermore, because CALEA requires both the government and carriers to obtain appropriate authorization to intercept communications or access call-identifying information, and because the Commission views the covered equipment entities as an arm of a foreign government, the Commission may adopt rules to prevent these governments from

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[18] *See* 47 U.S.C. § 214(c).

[19] *See In re Space Net, LLC*, Termination of International Section 214 Authorization, DA 19-143, 2019 WL 1055380 (rel. Mar. 4, 2019); *see also In re Jube Commc'ns, LLC*, Termination of International Section 214 Authorization, DA 16-720, 31 FCC Rcd. 7096 (2016); *In re Wypoint Telecom, Inc.*, Termination of International Section 214 Authorization, DA 15-1343, 30 FCC Rcd. 13431 (2015).

[20] *See* 47 U.S.C. § 229(a).

[21] *See* 47 U.S.C. § 229(b).

gaining unauthorized access to carriers' communications networks. This includes the ability to adopt rules that ban the use of equipment or software that could provide foreign governments with unauthorized access.

IV. THE COMMISSION MUST ENSURE ANY IMPOSED REPLACE-AND-REMOVE MANDATE IS UNAMBIGUOUS IN ITS TERMS AND REQUIRES ONLY A "ONE-TIME" ACTION BY CARRIERS.

As RWA noted above, any FCC plan to protect America's national security should be holistic and not leave behind any lingering threats. No matter whether the lingering risk is posed by a small mobile wireless carrier, a rural health care center's computer system, a suburban library's public wireless network, or a mobile device provided to a Lifeline subscriber, *every* potential security risk created by a covered company should be addressed in the Commission's forthcoming regulations. Additionally, both equipment and services should fall under this regulatory umbrella. Furthermore, the Commission must recognize that both wireless and IP networks are constructed in such a manner that replacing one component requires not just the replacement of that piece of equipment (and all sub-components not manufactured by a covered company), but also one or more upstream or downstream network components. This daisy-chain effect has its origins in the way networks are designed, either because of the physical compatibility of certain components, or because certain components operate on the same software, or because those components were provisioned by the manufacturer or system-installer to 'work together' but not necessarily apart. In short, then, any replace-and-remove program must include all operators of covered equipment and must further command that said operators also replace non-covered equipment if said equipment must work with covered equipment to operate successfully. Ensuring these equipment replacement requirements are holistic will be an

exhaustive process which should not be taken lightly. RWA proposes guidelines for the Commission to follow in drafting its replace-and-remove mandate.

First, any FCC program must be universal in nature and methodical in its planning and execution. Similar to the Commission's Broadcast Incentive Auction – whereby all TV stations above Channel 37 were required to sell, shut-down, or migrate their broadcast operations to lower channels in the UHF and VHF Bands – the Commission's decision to replace and remove covered equipment from the country's interconnected networks should apply to *all* impacted network operators. Allowing just some network operators to continue supporting designated equipment defeats the purpose of promoting genuine national security. The total pool of impacted equipment and services, and, by extension, the carriers or network operators reliant on that equipment and those services, must be defined early in the process.

Second, the Commission or the Universal Service Administrative Company ("USAC") must develop a list of equipment and services that must be removed. Deviating from that bright-line objective will encourage future exploitation of remaining security holes. Additionally, any subsequent mad rush to fix those security holes will inevitably lead to service disruptions for consumers relying on those legacy systems. However, any final list of impacted equipment requiring removal should also consider the natural life cycle of certain mission-critical systems. In other words, some equipment that might qualify for removal should be exempt and be allowed to remain operational until the end of the transition period. For example, CDMA (2G and 3G) systems have a life-cycle that will expire in just a few short years. This equipment is also not available from other sources and serves as voice fall-back for larger carriers who roam on these networks because Voice-over-LTE ("VoLTE") roaming agreements are not yet in place. Thus, any wireless carrier still using CDMA systems from covered companies should be permitted to

continue operating them, as their components will be naturally retired at approximately the same time any comprehensive FCC replace-and-remove program is complete.[22] Furthermore, shutting down communications equipment *before* deploying a replacement system is simply not feasible and should be a non-starter. Communications will grind to a halt, regional and nationwide carriers will be unable to roam in rural markets (and vice versa), and, where a market contains no other service providers, emergency calls may go into the ether. These negative outcomes certainly are not in the public interest.

The pivotal question then becomes how soon legacy equipment should be replaced. Immediately? Not necessarily. Those carriers still operating on 2G and 3G CDMA networks will need to deploy LTE/5G systems that utilize VoLTE, as no CDMA-comparable equipment exists. These carriers, then, should be permitted to continue operating legacy systems using USF support and also be afforded the ability to have newly deployed LTE/5G systems fully reimbursed.[23] Any rule requiring CDMA operators to shut down their 2G and 3G systems on an expedited schedule runs the risk of decommissioning an entire network with no operational backup network in place and imposing unnecessary and duplicative costs. Indeed, even if the LTE/5G replacement system is fully deployed on an expedited basis, that effort would carry not just the minimum cost of the full LTE/5G deployment, but also the costs associated with quickly acquiring and distributing VoLTE-capable handsets to 100 percent of the subscriber base. These

[22] RWA expects that the vast majority of legacy CDMA 2G and 3G networks will be fully retired between 2023 and 2025.

[23] RWA believes that the Commission should delay the release of any final designation of an equipment manufacturer until the entire replace-and-remove program is adopted and only after Congress passes a funding bill. If the Commission proceeds with classifying manufactures with final designations before any of this happens, it should grant blanket waivers to rural carriers with mission-critical non-4G/LTE/5G equipment that has a remaining life cycle of fewer than five years.

supplemental costs would not be necessary if these carriers' legacy systems are allowed to complete their natural lifecycles.

Third, the Commission must require all prospective reimbursement recipients (and particularly those receiving USF support) to track all relevant expenditures. Once Huawei and ZTE are finally designated as covered companies, Rule 54.9 compels the Commission to restrict USF funding to carriers still operating covered equipment unless those carriers can show that USF funds are not used to support or maintain covered company networks.[24] Many impacted carriers will already be doing just this. To the extent carriers will be maintaining separate accounts for their USF rather than comingling it with a general operating account, this will aid the Commission in ascertaining project costs, both at the carrier and national level, to ensure there are adequate reimbursement funds in the program's coffers.

V. ANY REPLACE-AND-REMOVE MANDATE MUST INCLUDE A CONGRESSIONAL APPROPRIATION COMPONENT AND CANNOT RELY ON EXISTING USF SOURCE FUNDING.

The Commission's proposal for a successful replacement-and-removal program hinges on a clear and sufficient reimbursement mechanism. The absence of a financial reimbursement component to replace covered equipment is ill-advised, and illegal. Requiring small carriers with no means of paying to replace covered equipment constitutes an unfunded federal mandate. RWA implores the FCC to only require replacement of equipment if, and only if, sufficient funding is available to small carriers to replace covered equipment and services. The Commission proposes but two funding sources: the existing USF Fund and some type of congressional appropriation. Only the latter option is a realistic solution. The USF simply cannot afford the price tag of a nationwide remove-and-replace program. RWA and numerous

[24] *FNPRM* at *26 ¶ 72.

other parties calculate the total cost of such an effort to conservatively exceed $1 billion.[25] Indeed, just this past year, Huawei publicly acknowledged that a drop in sales in the U.S. led to a $30 billion revenue hit.[26] If American telecommunications providers are spending tens of billions of dollars *annually* on Huawei equipment and services that must be replaced by another vendor, and at a significant cost, then how can the USF at less than $12 billion annually be expected to cover the cost? [27] Assuming the final price tag to replace covered equipment for small carriers is over $1 billion, a USF-only funding source would drastically effect the subsidies available for other USF programs, including rural health care, Lifeline and E-Rate.

Diverting such a large amount of money to individual USF recipients is simply robbing Peter to pay Paul. Thus, the Commission must work with Congress and the Trump Administration to facilitate the adoption of legislation that sufficiently funds the replacement-and-removal program via other avenues, such as through proceeds obtained in future FCC spectrum auctions.[28] The House of Representatives has already passed H.R. 4998[29] and the U.S. Senate was poised to do the same until Senator Mike Lee blocked the vote noting that funding

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[25] *See* Letter from Caressa D. Bennet, General Counsel, Rural Wireless Association, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 18-89, at 1-2 (July 1, 2019); Letter from Sarah Tyree, Senior Vice President – Policy and Public Affairs, CoBank, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 18-89, at 2 (July 1, 2019). Indeed, the replace-and-remove program may very well cost more than $1 billion if the reimbursable costs include ancillary equipment dependent upon covered equipment and all associated administrative costs.

[26] *See* Sijia Jiang, *Huawei Says U.S. Ban Hurting More Than Expected, To Wipe $30 Billion Off Revenue*, REUTERS (June 17, 2019), *available at https://www.reuters.com/article/us-huawei-tech-usa-revenue/huawei-says-u-s-ban-hurting-more-than-expected-to-wipe-30-billion-off-revenue-idUSKCN1TI0KL*.

[27] In 2018, however, USF funding was less than $12 billion for *all* programs, with just $4.5 billion allocated for high-cost support. *See In re Universal Serv. Contribution Methodology*, Notice of Proposed Rulemaking, WC Docket No. 18-89, 2019 WL 2366900, at *3 ¶ 9 n.22 (rel. May 31, 2019) ("*USF NPRM*").

[28] *See* Anne Cullen, *FCC Nets $7.6B in Latest Auction for 5G-Primed Spectrum*, LAW360 (Jan. 31, 2020), *available at https://www.law360.com/telecom/articles/1239326/fcc-nets-7-6b-in-latest-auction-for-5g-primed-spectrum*.

[29] Secure and Trusted Communications Networks Act of 2019, H.R. 4998, 116th Cong. (2019).

for the legislation needed to be resolved. RWA agrees that passing legislation without appropriate funding is a problem and urges the Commission to work with Congress to establish a clear mechanism for funding the replacement-and-removal program. Funding could come from a future spectrum auction by setting up a Secured Network Replacement and Removal Fund. Specifically, the Congress could target five percent of the proceeds from a future spectrum auction or $1 billion, whichever is greater, to create a "Secured Network Replacement and Removal Fund".

VI. THE COMMISSION SHOULD ADOPT AN UNAMBIGUOUS REIMBURSEMENT POLICY THAT CAN ACCOMMODATE UNFORSEEN CIRCUMSTANCES.

As RWA noted above, the Commission's final rules should accommodate technology upgrades that would naturally occur over the course of the transition period but for the replace-and-remove requirement (*i.e.*, 2G/3G to LTE/5G). And while the appropriation legislation should provide for a sufficient amount of funding to cover all facets of this transition, to the extent there is any need to prioritize reimbursement funds, priority should be given to the smallest carriers (by revenue and size),[30] as the nation's larger carriers have lower CAPEX costs per-subscriber and higher operating revenue overall, meaning they can more easily cover the replace-and-remove costs internally and through their consumer bases. RWA remains hopeful that the Commission and Congress will work collaboratively to ensure that any forthcoming replace-and-remove regulations are handcuffed to a sufficiently large enough source of funding and prioritization for small rural carriers.

[30] RWA agrees with Section 4 of H.R. 4998, which caps reimbursement to providers "of advanced communications services" with "2,000,000 or fewer customers." *See id.* § 4, *available at* https://www.congress.gov/bill/116th-congress/house-bill/4998.

The Commission's actual reimbursement policy should closely mirror the structure used for the Broadcast Incentive Auction. Specifically, the Commission should have outside engineers and cost consultants develop a comprehensive and detailed database of costs associated with the transition process. These costs should include not just capital costs for equipment, but also operational costs for everything from contractors to engineering and RF consultants and legal and accounting fees.[31] By establishing clear reimbursement cost mechanisms, the Commission will be assured that waste, fraud, and abuse of the reimbursement funds will not occur.

VII. THE COMMISSION SHOULD AUTHORIZE ALTERNATIVE SOURCES FOR EQUIPMENT AND SERVICES TO AVOID A REPEAT OF THE PRESENT SITUATION.

The Commission is correct when it notes that some parties, including RWA carrier members, purchased equipment from covered companies because of significant price savings compared to equipment from other vendors.[32] To ensure small, rural carriers are not forced to make such decisions moving forward, the Commission must take a bold stand and create a system whereby any equipment designated for removal is replaced by a new system that will not itself be suspect to the very same proposed rules at issue here. RWA members do not want to see a repeat of this same problem down the road. RWA suggests that the FCC should create an equipment certification program clearly specifying that the equipment satisfies U.S. national security requirements. RWA's carrier members are experienced in providing built-to-last wireless networks in remote corners of rural America and in complying with Commission rules

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[31] *See Catalog of Eligible Reimbursement Expenses (as of Feb. 9, 2017)*, FCC, *available for download at* https://www.fcc.gov/about-fcc/fcc-initiatives/incentive-auctions/resources.

[32] *FNPRM*, 2019 WL 6358656, at *44 ¶ 139.

and policies. However, they are not experts on foreign affairs and the intricacies of national security. Thus, their (and any other carriers') participation in the Commission's replace-and-remove program must provide clear guidance and FCC certification that the newly purchased equipment is acceptable and meets U.S. national security requirements.

VIII. THE REPLACE-AND-REMOVE MANDATE MUST PROVIDE A REASONABLE TRANSITION PERIOD AND RECOGNIZE INHERENT MARKETPLACE REALITIES.

RWA recommended *supra* that the Commission adopt a reimbursement regime similar to that used for TV broadcasters who had to relocate to new facilities in the UHF and VHF Bands. In conjunction with that recommendation, RWA recommends the Commission also adopt a transition timeline that is divided into replace-and-remove deployment phases.[33] Any transition must last between five and ten years to account for the fact that no two network operators are the same, and thus will require varying amounts of time to complete the required tasks.

After the Commission knows the scope of the entire project (*i.e.*, total number of network operators, size of the networks involved, cost of the respective network migrations, etc.), it can then work to schedule the transition into an orderly, multi-phase project timeline. Smaller replace-and-remove projects (*e.g.*, carriers with a small number of cell sites) can be done during one of the earlier phases, while larger projects (*e.g.*, carriers with large number of cell sites, carriers in challenging environments, or carriers who have larger customer bases) can be done during one of the later phases, thereby affording them more time to work through the process. To the extent carriers are slated to complete a transition and pledge to replace and remove covered equipment and services, they should still be eligible to receive financial support in the

[33] The FCC adopted a 39-month, 10-phase transition in which 987 broadcast television stations were repacked from above Channel 37 to a new broadcast facility below Channel 37. *See* https://www.fcc.gov/about-fcc/fcc-initiatives/incentive-auctions/transition-schedule.

interim. The Commission's overall replace-and-remove program would consist of the following timeline *after* Congress has approved the requisite funding: (1) calculate the scope of the replace-and-remove program; (2) estimate the program's costs; (3) finalize the program's transition timeline; (4) provision advanced upfront funds to carriers; (5) begin executing replacement network deployments in phases; (6) begin migrating subscribers; (7) begin removing and destroying covered equipment; (8) provision final payments to carriers for the cost of destroying equipment; (9) request and receive certifications from carriers; and (10) conduct carrier audits and request carrier reports. During the transition period, all impacted carriers should be required to perform some type of network monitoring designed to detect security threats and to submit reports detailing any network intrusions to the relevant federal authorities.

IX. CONCLUSION.

RWA and its members appreciate the Commission's decision to take a serious look at the security of America's interconnected telecommunications networks. The ability for nefarious foreign actors to disrupt or infiltrate these telecommunications systems is akin to a virus. However, in trying to eradicate the virus, the Commission must take care to ensure the vaccination is not worse than the disease itself. Accordingly, the public interest is best served by permitting legacy CDMA networks not reliant upon parallel 4G/LTE systems to remain functional – and eligible for USF support – during any transition period. In due course, these networks will be relied on less and, eventually, decommissioned. In the meantime, the Commission should focus on finalizing which 4G/LTE/5G components and reliant network elements are "safe" and which parts are "harmful." Once that is done, the FCC should proceed with an unambiguous reimbursement policy contingent upon new network deployments (funded by an act Congress). The actual network deployments should be well organized, reimbursed

according to an FCC-approved cost replacement program, and performed in phases to guarantee limited consumer disruptions and a seamless consumer migration. If the Commission takes this approach, it will reach its goal of replacing covered companies' equipment and ensuring that the U.S. has communications networks that are better able to protect our national security interests in five to ten years' time, while also ensuring that the 60 million or more rural consumers and those traveling through rural and remote areas currently served by covered companies' networks do not lose service.

Respectfully submitted,

RURAL WIRELESS ASSOCIATION, INC.

By: */s/ Carri Bennet*

Carri Bennet, General Counsel
5185 MacArthur Blvd., NW, Suite
729 Washington, DC 20016
(202) 551-0010
legal@ruralwireless.org

February 3, 2020

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Protecting Against National Security Threats	)	WC Docket No. 18-89
to the Communications Supply Chain	)	
Through FCC Programs	)	

REPLY COMMENTS OF THE RURAL WIRELESS ASSOCIATION, INC.

RURAL WIRELESS ASSOCIATION, INC.
Carri Bennet, General Counsel
5185 MacArthur Blvd., NW, Suite 729
Washington, DC 20016
(202) 551-0010
legal@ruralwireless.org

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SUMMARY

Maintaining U.S. national security is a key public interest objective, especially when it comes to protecting telecommunications and Internet infrastructure. Based on the record developed in this proceeding, there is strong industry support for the Commission's authority to take action to enhance national security.

If the FCC proceeds with a replace-and-remove mandate, it must apply to all covered company equipment -- including schools, libraries, and health care centers -- regardless of whether the operating entity is an ETC or a recipient of USF support. Because wireless networks are complex systems consisting of hundreds of upstream, downstream, and peripheral parts that are not necessarily manufactured or serviced by a covered company (and which serve no operational purpose once covered company equipment is physically removed), any replace-and-remove mandate should apply to entire systems, not just specific pieces of covered company equipment. The requirement to install replacement equipment and remove legacy equipment should be carried-out in phases over a period of five to ten years. The replacement equipment should be approved by the FCC via a publicly-available "white list," or alternatively, be purchased based on a manufacturer certification of compliance. All reasonable costs incurred by carriers replacing legacy equipment and purchasing replacement equipment should be 100% reimbursable, including all reasonable construction, engineering, legal, accounting, and administrative costs. Now that Congress has authorized spending up to $1 billion to fund a reimbursement mechanism, the goal of the Commission should be full elimination of covered company equipment, with priority for reimbursement funding given to small wireless carriers serving fewer than two million subscribers.

The Commission should refrain from issuing any formal "covered company" designations until after: (1) it deliberates with other federal agencies and departments; (2) it plans a comprehensive solution for the industry; and (3) Congress appropriates a source of funding for reimbursement. During the intervening period, carriers receiving USF support should continue receiving USF support for end-of-lifecycle equipment still in the field, provided such carriers agree to replace-and-remove the legacy equipment during the Commission's designated transition phases.

Before the
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In the Matter of	)	
	)	
Protecting Against National Security Threats	)	WC Docket No. 18-89
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Through FCC Programs	)	

REPLY COMMENTS OF THE RURAL WIRELESS ASSOCIATION, INC.

The Rural Wireless Association, Inc. ("RWA"),[1] files these reply comments in response to the *Further Notice of Proposed Rulemaking* ("*FNPRM*"), and submissions of other commenters, in the above captioned proceeding.[2]

I. INTRODUCTION.

In its *FNPR*M, the Federal Communications Commission ("FCC" or "Commission") sought comments on a variety of proposals, including a proposal that any eligible telecommunications carrier ("ETC") receiving Universal Service Fund ("USF") support "not use or agree to not use within a designated period of time, communications equipment or services

[1] RWA is a 501(c)(6) trade association dedicated to promoting wireless opportunities for rural telecommunications companies who serve consumers in rural America. RWA's members are small businesses serving or seeking to serve secondary, tertiary, and rural markets. Each of RWA's member companies serves fewer than 100,000 subscribers.

[2] *In re of Protecting Against Nat'l Security Threats to the Commc'ns Supply Chain Through FCC Programs, Huawei Designation, ZTE Designation*, Report and Order, Further Notice of Proposed Rulemaking, and Order, WC Docket No. 18-89, PS Docket Nos. 19-351, 19-352, 2019 WL 6358656 (rel. Nov. 26, 2019) ("*FNPRM*").

from covered companies."[3] The Commission also proposed to "require ETCs receiving USF support to remove and replace covered equipment and services from their network operations."[4]

The vast majority of comments submitted in response to the *FNPRM* make it abundantly clear that the FCC needs to manage any potential covered company equipment replacement and removal program in a one-time, comprehensive manner. But beyond that, many questions remain as to how to go about accomplishing such a mammoth project. For example, the FCC asked how to implement the transition from using covered company equipment to non-covered company equipment. There is vast support among commenters for the Commission proposal that equipment replacement be phased in over a reasonable number of years, and be subject to a cost-reimbursement policy that covers the cost of not just replacing "covered company" equipment, but also the cost of replacing non-covered company ancillary equipment and all associated administrative costs incurred by companies engaging in network deployment projects.

RWA and other commenters recognize that the public interest is best served if the proposed replacement and removal provision applies not just to ETCs receiving USF support, but to any service provider or public entity using equipment manufactured or serviced by a covered company. The Commission has the requisite legal authority to expand the scope of this

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[3] *Id.* at ¶ 122.

[4] *Id.* at ¶ 122. Recognizing that a massive "replacement and removal" project would be costly and time-consuming, the Commission also sought comment on a variety of other proposals centered around the size and scope of a potential replacement and removal effort, including how to pay for such an endeavor. At the time the *FNPRM* was adopted, both the U.S. Senate and the U.S. House of Representatives were considering several pieces of legislation that would fund the FCC's oversight of a replacement and removal initiative. However, because Congressional funding was not guaranteed, one of the proposals that the Commission sought comment on was whether to potentially divert precious USF monies in order to fund this replacement and removal program. Now that Congress has passed legislation establishing a reimbursement mechanism which President Trump is expected to sign off on shortly, the Commission should no longer need to consider a proposal that depends upon reimbursing carriers with USF funds. *See* "Secure and Trusted Communications Act of 2019" ("HR.4998"). Passed by House on voice vote on December 16, 2019. Passed by Senate on voice vote on February 27, 2019; https://www.congress.gov/bill/116th-congress/house-bill/4998/actions. RWA notes that while Congress has authorized $1 billion it still must appropriate the funds and that this could take some additional time.

rulemaking beyond ETCs. To avoid allowing the U.S. to fall into this national security trap in the future, RWA and a significant number of other commenters believe the Commission, or another federal agency, should create and manage a "white list"[5] of approved equipment vendors. Alternatively, the Commission should institute a certification program which places the burden for compliance on the manufacturers and vendors, and not the carriers.

RWA and its rural carrier members stand ready to support a nationwide replacement and removal FCC mandate, but in order for it to be effective, the aforementioned elements need to be adopted. Until all of these elements are instituted, the Commission needs to refrain from formally designating Huawei and ZTE as "covered companies." It also needs to continue providing USF support to ETCs throughout the duration of the rulemaking and transition periods so that rural wireless carriers keep all Americans connected.

II. THE COMMISSION'S PROPOSED REPLACE-AND-REMOVE MANDATE SHOULD BE COMPREHENSIVE IN SCOPE, BE CONDUCTED IN COORDINATION WITH OTHER FEDERAL AGENCIES, BE A "ONE-TIME" FIX, AND HAVE UNAMBIGUOUS TERMS AND CONDITIONS.

Before the Commission embarks on any replace-and-remove initiative, it first needs to coordinate its efforts with Congress as well as other federal agencies and departments that are also taking steps to address foreign national security threats. Other industry associations, including CTIA, NCTA – The Internet and Television Association ("NCTA"), the Telecommunications Industry Association ("TIA"), and USTelecom – The Broadband Association ("USTelecom"), are in agreement that before acting, the FCC needs to consider what other branches of the U.S. government are doing and refrain from either over-stepping or

[5] HR.4998, Section 4(d)(1)(a) states "The Commission shall develop a list of suggested replacements of both physical and virtual communications equipment, application and management software, and services or categories of replacements of both physical and virtual communications equipment, application and management software and services."

undercutting those efforts.[6] Accordingly, the Commission should pause further action in this docket, including issuing final designations of Huawei and ZTE, until it can strategically coordinate with the Department of Commerce ("Commerce Department"), the Department of Defense ("DoD"), the Department of Homeland Security ("DHS"), the Federal Acquisition Security Council ("FASC"), the General Services Administration ("GSA"), the National Aeronautics and Space Agency ("NASA"), the National Institute of Standards and Technology ("NIST"), and the National Telecommunications and Information Administration ("NTIA"). Were the Commission to unilaterally engage in rulemaking without first consulting with co-equal stakeholders, it risks disrupting a digital economy that accounts for at least $1.3 trillion dollars of the U.S.'s gross domestic product.[7]

RWA believes that any federal government effort to eliminate national security risks posed by covered company equipment or services needs to be holistic and not leave behind any lingering threats.[8] Such an endeavor must cover *every* potential network element in use in the U.S. and should not arbitrarily exclude some percentage of Huawei, ZTE, or any other manufacturer's equipment. Deviating from this holistic approach - - for example by not allowing

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[6] CTIA Comments at p. 2 ("[T]he Commission needs to harmonize its work with the unified federal approach being developed by DHS and Commerce."); NCTA Comments at p. 2 ("Any further action taken by the Commission in this proceeding should be in concert and coordination with the multiple work streams already underway across several different federal agencies and in Congress that address supply chain risks in ICTS."); TIA Comments at p. 5 ("The Commission's actions should account for the fact that it is not acting alone or in a regulatory vacuum in this proceeding, and that there are numerous ongoing (and probably future) government proceedings that will inform – and be informed by – how the Commission proceeds in this rulemaking."); USTelecom Comments at pp. 7-8 ("The U.S. government is presently engaged in multiple other significant efforts of various scope and maturity to promote the security of the ICTS supply chain, particularly in the communications sector…[w]ith these multiple and interrelated activities in mind, USTelecom applauds the Commission's statement supporting a 'whole of government approach to supply chain security.'").

[7] "Survey of Current Business," The Journal of the U.S. Bureau of Economic Analysis, Vol. 99, Number 5 (May 2019); see https://apps.bea.gov/scb/2019/05-may/pdf/0519-digital-economy.pdf.

[8] *In re Protecting Against Nat'l Security Threats to the Commc'ns Supply Chain Through FCC Programs, Huawei Designation, ZTE Designation*, Comments of the Rural Wireless Association, Inc., WC Docket No. 18-89, (filed Feb. 3, 2020) ("RWA Comments") at p. 8.

reimbursement to small-sized non-ETCs[9] - - is simply not in the public interest. Likewise, tacitly permitting schools, libraries, and rural health centers to continue using covered company equipment while simultaneously forcing wireless carriers to remove other covered company equipment unfairly burdens one sector of the telecommunications/digital information industry while still allowing for foreign threats in another.[10] More than anything, the telecommunications industry needs *clarity* as to the scope of any equipment replacement mandate.[11] However, if and when the Commission does proceed with a comprehensive replace-and-remove initiative, it must recognize that every piece of equipment that is integral to actually providing service to customers or end users and thus warranting removal and destruction is "collateral damage" (even if not manufactured by a covered company) and should therefore also be eligible for reimbursement. To the extent commenters such as the Puerto Rico Telephone Company, LLC ("PRTC") and the Rural Wireless Broadband Coalition ("RWBC") ask that "lower risk" covered company equipment, components, or sub-parts *not* be included in any FCC removal mandate, it is because they believe that including such equipment in a removal mandate would have minimal impact on reducing threats to national security, and that removing such equipment would be unduly burdensome or downright impossible.[12] Importantly, even a "minimal" impact on reducing

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[9] *FNPRM* at ¶ 122

[10] *FNPRM* at ¶ 128.

[11] Competitive Carriers Association ("CCA") Comments at p. 9 ("Carriers also will need flexibility, or at least significant clarify, regarding what is required of them in terms of procedure and compliance."); CTIA Comments at p. 3 ("If the Commission moves forward with its *FNPRM* proposals, it should offer clarity about compliance and certification expectations and minimize disruptions."); Mark Twain Communications Company ("Mark Twain") Comments at pp. 3-4 ("Before the FCC can enact a prohibition…it should provide guidance on exactly what is meant by an ETC's or USF recipient's 'use of covered equipment.'").

[12] PRTC Comments at p. 4 ("PRTC proposes the Commission limit the scope of the mandate to exclude lower risk equipment that is outside of the core network, such as antennae, wires, cables, modems, routers, or other non-critical elements of a network."); RWBC Comments at p. iv ("The Commission should not impose on small wireless carriers the unrealistic and burdensome task or [sic] removing specific components or sub-parts produced or provided by covered companies.").

threats to national security cannot be discounted. Moreover, PRTC presents no evidence to support its conclusion that sub-parts and components "pose minimal or no risk."[13] If PRTC's claim cannot be verified, then all covered company equipment poses an equal risk to national security. Importantly, both PRTC[14] and RWBC[15] agree with RWA that if the Commission broadens the scope of banned equipment, nearly every out-of-pocket expense should be reimbursable. The fact that Congress has authorized up to $1 billion in reimbursement funding for small wireless carriers serving fewer than two million subscribers means that the covered equipment should be able to be replaced. Congress also allowed for additional funding beyond the $1 billion, if deemed necessary.[16]

USTelecom, which argues that "component parts" should not be eligible for reimbursement, acknowledges that removing and replacing such parts would be both "complex" and "costly" compared to focusing on the "piece of finished [] equipment" manufactured by Huawei and ZTE.[17] But with $1 billion in reimbursement funding authorized, the Commission can focus on a more "big picture" replacement and removal proposal that includes entire wireless systems and even upstream and downstream equipment not manufactured by Huawei or ZTE, but nonetheless part of existing systems, that will need to be replaced due to incompatibility with new equipment. RWA agrees with RWBC that a communications system is highly complex and

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[13] *Id*. at p. 4.

[14] PRTC Comments at p. 15. PRTC provides nearly a page-long list of equipment and services that should be eligible for reimbursement.

[15] RWBC Comments at p. 4 ("[W]hile it is appropriate for the Commission to reimburse only for costs it determines to be reasonable, the Commission should provide *full* reimbursement for those costs.").

[16] HR.4998 at Sec. 4(d)(5)(B).

[17] USTelecom Comments at p. 13. ("Replacing component parts in finished products could be tremendously challenging and complex, and therefore costly.").

that certain pieces of equipment placed upstream or downstream in that system do not function in isolation and serve no purpose once "covered company" equipment is also removed. In the big picture, companies will not be focused on sub-parts and components. For example, if a simple Huawei or ZTE antenna, or more complex remote radio unit ("RRU"), needs to be removed from a cell site, so will numerous other parts (*e.g.*, cables, brackets, back-up power systems, etc.) that often are *not* manufactured by Huawei or ZTE and which serve no functional purpose (and generally cannot be re-used) once the original Huawei or ZTE equipment is decommissioned. This daisy-chain of interacting ancillary upstream and downstream parts, components, and sub-components means that, as addressed below, *all* such parts, components, and subcomponents will need to be replaced in any Commission initiative. In short, replacement and removal of all of the usable ancillary equipment must be fully reimbursable. Failure to provide similar reimbursement funding for these additional pieces of equipment required to support mission-critical equipment, even if the components are upstream/downstream parts from a different manufacturer, unfairly burdens some companies or organizations by forcing them to jettison otherwise non-covered equipment without just compensation and creates a formula for failure.

III. THE PUBLIC INTEREST NECESSITATES THAT ANY REPLACE-AND-REMOVE PROGRAM BE EXTENDED TO INCLUDE NOT JUST ELIGIBLE TELECOMMUNICATIONS CARRIERS RECEIVING USF SUPPORT, BUT ANY ENTITY OPERATING COVERED COMPANY EQUIPMENT.

In its *FNPRM*, the Commission "propose[s] to limit the removal and replacement requirement to ETCs" but also asks whether it should apply this mandate to "other USF recipients, like rural health care providers or schools and libraries."[18] It also sought comment on whether carriers designated ETCs in the future, or, "otherwise qualifying carriers" may be

[18] *FNPRM* at ¶ 128.

designated as ETCs "for the sole purpose of participating in any removal and replacement" mandate adopted by the Commission.[19] RWA supports a comprehensive FCC strategy that addresses and permanently solves the issue of covered company equipment in a "one time" fix. National security threats posed by covered company equipment either exist or do not exist. There is no middle ground. To the extent the Commission adopts a rule banning covered company equipment, that requirement should apply to all companies or organizations operating network equipment manufactured or serviced by Huawei or ZTE, and likewise, each of those network operators should be eligible for reimbursement of reasonable costs should they qualify as small businesses under the law.

A diverse group of commenters, including CCA, the College of Healthcare Information Management Executives ("CHIME"), and Triangle Communication System, Inc. ("Triangle") agree with RWA that any replacement and removal mandate should be extended to equipment users beyond ETCs and USF recipients, for the simple reason that a widespread problem warrants a widespread solution.[20] Meanwhile, LATAM Telecommunications, Inc.

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[19] *Id*.

[20] CCA Comments at pp. 3-4 ("But any national security threat posed by the covered equipment and services extends beyond ETCs, as the Commission recognizes."); CHIME Comments at pp. 1-2 ("The FCC furthermore is considering expanding this directive to other US recipients including healthcare providers…CHIME supports the Commission's proposal."); RWA Comments at p. 3 ("[T]he ability to participate in such a replacement program needs to be open to all users of such equipment, whether they are USF recipients, ETCs, or neither."); Triangle Comments at p. 1 ("First, if the covered vendors and their equipment are threats to US networks, Congress should act immediately to fund the replacement of all equipment from the covered vendors whether the carriers are USF recipients or not. It is inconceivable that a plan is not in place to replace the equipment causing the threat to the US networks if the threat is real.").

("LATAM"),[21] JAB Wireless, Inc. ("JAB")[22], and NTCH, Inc./Flat Wireless, LLC ("NTCH")[23] want the Commission to either: (1) allow ETCs to remain eligible for reimbursement in additional markets where a carrier has no ETC designation, or (2) extend reimbursement eligibility to all types of covered equipment operators and carriers, including non-ETCs. RWA agrees with these commenters that to the extent the Commission insists on limiting eligibility to ETCs, it extend eligibility to such ETCs in markets where they have no ETC designation, but believes the better solution is to extend eligibility to all covered equipment operators and carriers, including non-ETCs that meet the congressional definition contained in HR.4998.

The Computing Technology Industry Association ("CompTIA") argues that "the Commission should remain focused" on USF program recipients "and not expand its aim to encompass communications networks generally, since doing so would replicate other federal efforts and give rise to significant legal questions."[24] Ideally, the Commission will refrain from adopting new rules until all federal actors harmonize their activities. Doing so would make CompTIA's concern moot. While WTA – Advocates for Rural Broadband ("WTA") contends "that the [removal] requirement and [reimbursement] eligibility should be limited to ETCs," this limitation is heavily premised on the concern that there may not be "adequate funding" in the reimbursement program. While there may not be adequate funding to reimburse *all* ETCs, the

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[21] LATAM Comments at p. 10 ("Thus, if the Commission requires non-USF recipients to remove existing equipment, they should be permitted to participate in any reimbursement program without having to become ETCs.").

[22] JAB Comments at p. 7 ("Accordingly, the Commission's implementing regulations should permit extending reimbursement to those portions of an ETC's facilities where it does not operate as an ETC.").

[23] NTCH Comments at p. 6 ("Being an ETC really has nothing to do with the relatively limited obligations undertaken by a party who seeks reimbursement for replacement covered equipment. There is no indication at this time that Congress intends that the award of monies appropriated for reimbursement should be limited to ETCs, and there is no reason for the Commission to do so either.").

[24] CompTIA Comments at p. 1.

Congressionally authorized funding will ensure that small ETCs – those carriers most in need of replacement funding -- are adequately funded. Finally, NCTA suggests that the Commission lacks the legal authority to extend a removal mandate to non-ETCs. Nonetheless, it concedes that if the "Commission imposes a ban on use by any USF recipient of equipment and services from covered companies – irrespective of whether such use is self-funded – then the scope of the remove and replace funding program should cover all affected recipients, and not just ETCs."[25]

Only three commenters -- CTIA, the State E-Rate Coordinators Alliance ("SECA"), and USTelecom -- insist that non-ETCs and non-USF recipients be exempted from having to participate in any mandatory equipment-replacement mandate, and by extension, forgo reimbursement. CTIA believes that including non-ETCs, rural health care providers, and libraries "could create financial burdens to a reimbursement fund with little clear benefit to national security."[26] This analysis is simply wrong. A wireless telecommunications carrier utilizing covered company equipment that is *not* an ETC and *does not* receive USF support poses the *same* risk to national security as a wireless telecommunications carrier utilizing covered company equipment that *is* an ETC and that *does* receive USF support. CTIA concedes that "[i]f money remains, the Commission can then consider whether to reimburse [schools, libraries, and health care facilities that receive USF support] for removal of covered equipment."[27] Here, CTIA does not dispute the fact that non-ETC carriers and other USF recipients utilize equipment that poses a risk to national security. Indeed, CTIA agrees that reimbursement funding could be made available to them, and this policy position presumes the equipment those operators utilize

[25] NCTA Comments at p. 3.

[26] CTIA Comments at p. 12.

[27] *Id*.

does pose a national security risk. CTIA also argues that the Commission lacks the legal authority for expanding the mandate (discussed below) and that "practical considerations counsel in favor of regulatory restraint."[28] RWA believes that rather than dictating "regulatory restraint," practical considerations warrant an all-encompassing nationwide solution for all covered company equipment, not an ad hoc approach that leaves vulnerable back-doors.

SECA, meanwhile, focuses its attention on its argument that "there has been little use made of E-rate funding in the procurement of covered equipment by schools and libraries."[29] However, SECA also acknowledges that "use of covered equipment by providers of Category 1 telecommunications and Internet access services…is not easily tracked in USAC's E-rate databases and is therefore difficult to quantify."[30] This uncertainly as to how much covered company equipment is used in the U.S. is precisely why RWA supports a methodical, as opposed to reactionary, FCC rulemaking process. This deliberative process begins with an expansive information collection inquiry[31] wherein all covered company equipment users in the U.S. (not just ETCs) should submit information to the Commission. Finally, it is important to note that SECA does not object to those network operators providing equipment to schools and libraries also receiving ETC designation in the future or otherwise qualifying as ETCs for the sole purpose of participating in an FCC reimbursement program.[32] To the extent there is not

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[28] *Id*. 13-14.

[29] SECA Comments at pp 2-3. According to SECA, the total amount of Category 2 covered company equipment funded since FY 2016 is less than $4.5 million and involves only 24 applicants.

[30] *Id*. at p. 4.

[31] "Wireline Competition Bureau and Office of Economics and Analytics Open Reporting Portal for Supply Chain Security Information Collection," WC Docket No. 18-89, DA 20-166, OMB-3060-1270, (released Feb 26, 2020).

[32] SECA Comments at p. 4.

sufficient funding and the issue of reimbursement "prioritization" becomes important, RWA urges the FCC to prioritize small wireless carriers over other operators or users of covered company equipment due to the widespread use of rural wireless carrier networks by those living and travelling in rural markets.

USTelecom, for its part, cautions the Commission to "stay clearly within the bounds of its legal authority" and confine the scope of any new rules "to equipment and services funded through the USF."[33] More specifically, it wants to limit replacement and removal obligations to ETCs for two reasons. First, it argues that "ETCs are most likely to have covered equipment." However, until a data collection process concludes, there is no way of knowing precisely the scale to which covered company equipment is used by non-ETC wireless carriers in the U.S. Second, it argues that "inclusion of other USF recipients, like rural health care providers and libraries, could put large administrative burdens on the reimbursement fund without proportional benefit to national security."[34] However, as discussed above, the cost to reimburse equipment used in schools, libraries, and rural health care centers is likely to be a nominal amount.[35] USTelecom, like CTIA, has issues about the *prioritization* of reimbursement funding, but it too concedes that "[i]f there is money left over, [the Commission] can consider whether to reimburse other USF participants for removal of covered equipment."[36] Provided the Commission has the legal authority to proceed with a comprehensive equipment replacement-and-removal regimen,

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[33] USTelecom Comments at p. 6.

[34] *Id*. at p. 14.

[35] *Supra* at n. 28.

[36] USTelecom Comments at p. 14.

which RWA and many other commenters believe it does, there exists considerable industry support for a "one-time" fix that would expand eligibility to non-ETCs and non-USF recipients.

IV. THE COMMISSION RETAINS THE NECESSARY LEGAL AUTHORITY TO EXPAND AN EQUIPMENT REPLACE-AND-REMOVE PROGRAM.

In its comments, RWA demonstrated that the Commission holds ample legal authority under Sections 316, 214, and 229 of the Communications Act of 1934, as amended ("Act") to extend a replacement and removal mandate to non-ETCs and non USF recipients.[37] More specifically: (1) Section 316(a)(1) permits the Commission to impose technical and other standards on wireless licensees; (2) Section 214(c) allows the Commission to grant a certificate to engage in wireline transmissions only if doing so is in the public interest, and nothing prevents an FCC rulemaking adding national security conditions to this certification process; and (3) Section 229(b) of the Act ("CALEA") grants the Commission unambiguous authority to prescribe rules that will prevent any interception of communications or access to call-identifying information, unless otherwise permitted. These three sources of legal authority are broad-based, and unlike Section 889 of the National Defense Authorization Act for Fiscal Year 2019 ("2019 NDAA"),[38] they allow the FCC to require *all* impacted carriers and network operators to remove entire systems - - and not just specific pieces of Huawei and ZTE equipment, as long as they are classified as covered company equipment.

[37] RWA Comments at pp 5-8.

[38] Pub. L. 115-232, 132 Stat. 1636.

V. THE REIMBURSEMENT MECHANISM APPLIED BY THE COMMISSION MUST BE EXPANSIVE IN SCOPE, INCLUDE ALL UPSTREAM AND DOWNSTREAM EQUIPMENT AND SUB-COMPONENTS, ALLOW FOR REASONABLE OPERATIONAL AND ADMINISTRATIVE COSTS, AND ESTABLISH CLEAR STANDARDS FOR DETERMINING APPROVED EQUIPMENT.

While Huawei and ZTE equipment is used by a mix of companies and institutions in the U.S., the vast majority of users of such equipment are rural wireless telecommunications carriers. If any group of companies knows what it would take to fully replace and move this equipment, and the cost of completely overhauling both network cores and RANs, including all administrative costs, it is rural wireless carriers and their representative associations and coalitions. In its comments, RWA urged the Commission to adopt a reimbursement policy that largely followed what the Commission instituted in the Television Broadcast Incentive Auction.[39] Specifically, RWA proposed the creation of a Catalog of Eligible Reimbursement Expenses that includes all infrastructure, administrative, engineering costs related to the construction of a new wireless system and the decommissioning and disposal of the legacy wireless, and all services supporting both projects. Regardless of the final form, RWA recommends a reimbursement policy that is highly inclusive and considers ***all*** of the costs incurred by an impacted equipment operator or wireless carrier. There is broad-based support for such a policy among the rural carriers that will be the most impacted by a replacement-and-removal mandate, and the associations representing them.[40]

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[39] RWA Comments at p. 3.

[40] CCA Comments at p. 8 ("[i]t will be important for the funding vehicle to address the costs of full compliance with the requirements, including equipment or services of affiliates and partners to the extent that the equipment or services are relevant to compliance with the new rules."); JAB Comments at p. 10 ("The Rules Should Reimburse for Removing and Replacing All of the ETC's Covered Company Equipment and Associated Equipment."); Mark Twain Communications Company at p. 5 ("The reimbursement program must be based on the costs of new equipment and not on the depreciated value of existing equipment."); NTCH Comments at pp. 7-8 (Calling for reimbursement of the costs of both all necessary new equipment and all disposal costs for legacy equipment.); PRTC

In its *FNPRM*, the Commission also inquired as to whether it should authorize reimbursement for "technology upgrades," for example, allowing a carrier currently operating a 2G or 3G network to be reimbursed for the costs of deploying a 4G LTE or 5G network.[41] RWA endorses such a policy,[42] as do CompTIA,[43] JAB,[44] PRTC, [45] and Nokia.[46] No parties explicitly oppose such a policy. The Commission needs to recognize the simple fact that technology is constantly evolving and newly-manufactured equipment will naturally be upgraded from what was originally manufactured and deployed in prior years.

If the U.S. wants to protect its communications networks in the 21st Century, it needs to do its best to make sure that all newly deployed equipment (even equipment outside the scope of this rulemaking proceeding) lacks security holes or intentional backdoors subject to foreign actor manipulation. One way to accomplish this objective is for the FCC to prohibit carriers from deploying equipment that is not on a Commission-created "white list" of approved vendors and devices. Another way is to have equipment vendors certify compliance with relevant legislation

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Comments at p. 16 (Calling for reimbursement of all "reasonable" costs, including costs of new replacement equipment, disposal of legacy equipment, insurance premiums, and charges or penalties associated with cancelling existing vendor contracts.); RWBC Comments at p. 26 ("The Coalition therefore respectfully urges the Commission to adopt a reimbursement mechanism that covers all reasonable costs, that does not force small wireless carriers to absorb any portion of these costs, and that does not impinge upon the four existing universal service programs."); WTA Comments at p. 8 ("The limited WTA members that have covered equipment in their networks are open to not using or agreeing not to use within a designated period of time communications equipment or services from covered companies. However, this willingness is contingent on the establishment of a reimbursement fund that can be used by carriers to cover the costs of ripping and replacing existing covered equipment in their networks.").

[41] *FNPRM* at ¶ 137.

[42] RWA Comments at p. 13.

[43] CompTIA Comments at p. 6.

[44] JAB Comments at p. 11.

[45] PRTC Comments at p.17, FN 39.

[46] Nokia Comments at p. 7.

or administrative rules. While most commenters remained silent on whether the Commission should create a "white list" or require manufacturer certification, several carriers and associations support these common sense proposals.[47]

TIA, in its comments, supports an alternative solution to the two proposals discussed above. Specifically, TIA calls for "industry-led standards and best practices for supply chain security" that apparently do not rely on additional regulation.[48] In hindsight, it was precisely this *laissez faire* attitude, lack of regulatory oversight, and delayed government intervention that led to the predicament the industry is currently facing. The more prudent course of action for the FCC and other federal agencies and departments is to team together and create a government seal-of-approval either through a vendor "white list" or by shifting a regulatory burden for certification and compliance to the vendors and not the network operators. If for no other reason, these proposals would reduce the need for a future replace-and-remove mandate costing billions of dollars.[49] Regardless of whether the FCC develops a vendor "white list" or alternatively requires *manufacturers* to certify compliance with some type of national security standard, the burden of guaranteeing the security of replacement equipment should definitely not fall on rural carriers. To reinforce this point, both RWA and NTCA urge the Commission to create a "safe harbor" that eliminates carrier liability for any potential future violations.[50]

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[47] RWA Comments at p. 14; RWBC Comments at p. 14; Mark Twain Comments at p. 5; and Triangle Comments at p. 1.

[48] TIA Comments at p. 11.

[49] In the unlikely event that permitted "white list" vendors are eventually classified by the Federal government as a national security threat, or, a carrier deploys replacement network equipment purchased from a vendor that certifies compliance to national security regulations (but that carrier is eventually classified as a national security threat), this should hopefully shift all financial burdens that might be incurred in yet another future replace-and-remove mandate to the vendors and away from wireless consumers and network operators.

[50] RWA Comments at p. 3. NTCA Comments at p. 3.

VI. NETWORK REPLACMENT PROJECTS SHOULD BE IMPLEMENTED IN PHASES OVER A RESONABLE NUMBER OF YEARS.

Industry associations or coalitions like RWA, NTCA and RWBC - - whose members are disproportionally impacted by these proposed rules - - are in complete agreement that any transition period will require multiple years to complete. WTA believes its members might require a "long" period of time (up to seven years) to successfully deploy replacement equipment and remove existing equipment, while RWA and RWBC's deployment estimates are also in the five-year to ten-year time range.[51] Even CTIA urges the Commission to provide "adequate transition periods" for all impacted carriers.[52] A few individual carriers such as JAB and Triangle believe they can complete such a network transition in two or three calendar years, but such a speedy transition is not particularly realistic.[53] JAB and Triangle are assuming that they can negotiate with an equipment vendor, take receipt of the customized equipment, and hire scarce network engineers, tower crews, and other technicians to install the equipment once it is eventually delivered. [54] JAB and Triangle will be competing with many other commenters in this proceeding to purchase the equipment and support services necessary to make network changes. The reality is that ample time is required for *all* impacted users of Huawei and ZTE equipment to make the migration. Creating an unrealistically short transition window serves no practical purpose; it will only invite the inevitable flurry of waiver requests due to carriers facing

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[51] RWA Comments at p. 15; RWBC Comments at p. 13; and WTA Comments at p. 5.

[52] CTIA Comments at p. 3.

[53] JAB Comments at pp. 14-15 and Triangle Comments at p. 5. Triangle notes that if there is a delay in funding, the build-out process could take between four and seven years.

[54] These various equipment acquisition and deployment milestones are in addition to all of the follow-up back-office systems testing and systems integration involving engineering, customer care, billing, and sales necessary before a new network can be rolled-out to paying customers.

unforeseen equipment deployment or equipment removal delays - - and there are always unforeseen delays.

How should the Commission organize the inevitable network transitions and avoid industry chaos? Thankfully, the Commission has already managed a very similar, multi-party, nationwide, facilities-deployment project: the Broadcast Television Incentive Auction post-auction transition. This "re-packing" project involved the Commission designating all re-locating television stations into one of ten "phases" spaced over the course of several years. RWA wholeheartedly supports such a construct to be used in the present case.[55] RWBC also supports the notion of a phased transition "tailored time slots."[56] Other commenters such as CCA and PRTC note that there is no one-size-fits-all transition timeline for all impacted network operators, and that carriers need some degree of flexibility.[57] As the Commission conducts its information collection campaign and eventually develops its phased transition schedule, it can work with individual carriers and place them in the appropriate transition phase, where nimble carriers could make the transition on the front-end and those requiring more time could be slotted into a later phase. So while Nokia believes that individual companies can accomplish a successful network transition in one to three years,[58] due to a foreseeable shortage of tower crews, network engineers, qualified field installation and integration personnel, and a desire to avoid service disruptions, it will serve the public interest to extend the entire transition window

[55] RWA Comments at p. 15.

[56] RWBC Comments at p. 12 (promoting the use of "tailored time slots").

[57] CCA Comments at p. 8; PRTC Comments at pp. 12-13.

[58] Nokia Comments at p. 6.

and then divide up those transitioning carriers into several phases stretching over at least a five to seven year period.

VII. THE COMMISSION SHOULD KEEP USF SUPPORT IN PLACE UNTIL NETWORK OPERATORS CAN SUCCESSFULLY TRANSITION TO NEW NETWORKS

In its comments, RWA urged the Commission to delay any final designation of Huawei or ZTE until after: (1) legislation is adopted that includes a sufficient amount of congressionally-appropriated reimbursement funding; (2) the Commission completes its information collection efforts; and (3) the Commission adopts a fully comprehensive replacement and removal program that allows for the reimbursement of *all* reasonable costs incurred by *all* operators using covered company equipment, including all necessary administrative costs, and all equipment and services that are crucial to an operating network but that are not necessarily manufactured by a covered company.[59] RWA believes that the public interest warrants that USF support remain available to current recipients so that carriers do not run the risk of having to shut down networks and remove wireless coverage before replacement wireless systems are constructed and wireless users migrate to these systems. RWA is not alone in this sentiment. WTA recognizes that "for a significant period of time, it will be necessary for affected carriers to continue to use covered equipment"[60] and "that the Commission should revise its adopted rule to allow limited USF support to go towards ensuring that covered equipment continues to operate while the transition is underway."[61]

[59] RWA Comments at pp 10, FN 23.

[60] WTA Comments at p. 6.

[61] WTA Comments at p. 6.

If the Commission proceeds with adopting a new rule banning the use of covered company equipment, it must seriously consider the real-life impact of forcing carriers to prematurely remove fully-functioning 2G and 3G system (especially CDMA-based systems) prior to the natural end of their operational life cycles. Today, companies other than Huawei and ZTE can manufacture, customize, and sell 4G LTE and 5G systems designed "from the ground-up" and which do not need to be backwards-compatible with and reliant upon those legacy 2G and 3G systems utilizing covered company equipment. In a situation where covered company equipment is in the last few years of its usable lifecycle, rural carriers should be permitted to keep these legacy systems running with existing USF support until the network transition is complete in that particular market. There is a recognizable public interest harm in having dozens of 2G and 3G wireless networks go completely dark due to a lack of financial support. The quicker the FCC completes a phased transition, the quicker the covered company equipment gets removed and destroyed. If the federal government believes certain networks or certain parts of the country pose an increased security risk, those networks and markets can be slotted in an earlier transition phase. This approach will prevent nationwide coverage blackouts and widespread service interruptions. Failing that, the Commission must grant waivers to impacted rural network operators so that covered company equipment can remain operational for however many years it will take for the replacement and removal program to run to completion.[62]

VIII. CONCLUSION

RWA is grateful that Congress passed HR.4998. This was a pivotal first step. The next steps are for President Trump to quickly sign the bill into law and for lawmakers to then appropriate the $1 billion in funding so that the Commission can adopt rules that will provide for

[62] CHIME Comments at p. 3 and Nokia Comments at p. 5.

a covered equipment replacement and removal program. As the FCC goes down this road, it must do so carefully and deliberately. First, the solution implemented must be a one-time fix. As national security is the objective, then success should be defined as the 100% elimination of covered company equipment. This means that all users of this equipment (e.g., wireless carriers, wireline carriers, schools, libraries, health care centers) should be required to remove the equipment, regardless of whether they are ETCs or USF recipients. Second, all parts and components, and even non-covered company equipment used in tandem with these systems, that must be removed and decommissioned should be eligible for reimbursement. In short, all reasonable costs incurred by small network operators to successfully complete their network transition should be fully reimbursable, without exception. Third, before legacy systems are turned off and removed, the replacement systems should be fully deployed and tested using equipment acquired from "white list" vendors or vendors certifying compliance to standards. Carriers should not have to carry the national security "certification" burden; this burden should be transferred to vendors. Fourth, the Commission needs to allow the transition to occur in a methodical manner and employ deployment phases similar to what it did in the post-auction transition of TV broadcasters, ideally for a period of five to ten years.

Finally, throughout this entire replacement and removal process, the Commission needs to maintain USF support to those carriers who are operating 2G, 3G, and 4G LTE systems.

Respectfully submitted,

RURAL WIRELESS ASSOCIATION, INC.

By: */s/ Carri Bennet*

Carri Bennet, General Counsel
5185 MacArthur Blvd., NW, Suite 729
Washington, DC 20016
(202) 551-0010
legal@ruralwireless.org

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