

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

In the Matter of)	
)	
Rural Digital Opportunity Fund)	WC Docket No. 19-126
)	
Connect America Fund)	WC Docket No. 10-90

COMMENTS OF ADTRAN, INC.

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SUMMARY

ADTRAN applauds the Commission's efforts to spur broadband deployment to unserved and underserved locations through the adoption of the Rural Digital Opportunity Fund ("RDOF"). ADTRAN supports the proposal to allocate a minimum of over \$20 billion to that effort, and the ten-year term of support. ADTRAN also agrees that a baseline of 25/3 Mbps should be adopted, although the Commission should create incentives for greater speeds in order to "future proof" the subsidized broadband service.

In using a descending clock auction to determine the recipients of the RDOF subsidies, the Commission must ensure that it obtains the best proposed value, not simply the lowest price that meets the baseline speed. The proposed weighting system is designed to do so, and ADTRAN supports the proposed three tiers of speeds, as well as the minimum usage allowances that will increase over time as average usage goes up. In addition, the Commission should not allow broadband service providers to discourage usage short of the usage cap, including de-prioritization of traffic or rate limiting after some lower threshold is exceeded. ADTRAN also supports the proposed low-latency and high-latency options. But ADTRAN urges the Commission to adopt slightly different weights for these various categories, in light of the significant drawbacks to the high-latency service. ADTRAN urges the Commission to adopt the alternative proposal of a 95-point spread between the highest and lowest service tiers, and to do so by increasing the weight of the high latency service from 40 to 50, while decreasing the weight for the baseline speed from 50 to 45.

Determining which prospective broadband service provider proposes to offer the best value in order to be selected to receive the RDOF is critical to the success of the program. But that will be for naught if the promised service is not actually delivered to the subscribers. Thus, equally important as the design of the descending clock auction is the program that the Commission adopts for monitoring and enforcing the deployment and performance obligations. ADTRAN generally supports the proposed use of the monitoring and compliance mechanisms applied previously, with a few additional measures to help better ensure that the subsidy recipients actually deliver the required performance. ADTRAN urges the Commission to supplement the current program for monitoring and enforcing compliance of deployment and performance with crowd sourcing to trigger investigations and whistleblower mechanisms to encourage reporting of violations.

ADTRAN suggests that the Commission not adopt a separate set of obligations requiring the service providers to achieve specific subscribership levels. ADTRAN does agree with the proposal to allow incumbent providers to demonstrate that service of at least 25/3 Mbps will be deployed prior to the commencement of the RDOF program to avoid overbuilding. Finally, ADTRAN urges the Commission to provide transitional relief to the incumbent providers to ensure that current subscribers' service will continue prior to the RDOF grantee deploying the supported broadband services.

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ADTRAN, Inc. (“ADTRAN”) takes this opportunity to address several of the issues raised in the Commission’s Notice of Proposed Rulemaking regarding the Rural Digital Opportunity Fund (“RDOF”).¹ The *Notice* seeks comment on establishing a new framework for fostering broadband deployment in unserved and underserved areas by awarding subsidies based on a descending clock auction. The *Notice* proposes a ten-year term of support, with a budget of \$20.4 Billion. As explained below, ADTRAN supports the establishment of the RDOF, although it suggests some refinements to the *Notice*’s proposals. ADTRAN believes that such a modified broadband subsidy program will help close the digital divide in an efficient manner.

ADTRAN, founded in 1986 and headquartered in Huntsville, Alabama, is a leading global provider of networking and communications equipment. ADTRAN’s products enable voice, data, video and Internet communications across a variety of network infrastructures. ADTRAN’s solutions are currently in use by service providers, schools and libraries, private enterprises, government organizations and millions of individual users worldwide. ADTRAN thus brings an expansive perspective to this proceeding, as well as an understanding of the

¹ *Rural Digital Opportunity Fund*, FCC 19-77, 84 Fed Reg 43543 (August 21, 2019) (hereafter cited as “*Notice*”).

importance to individuals, communities and our country of robust and ubiquitous broadband.

ADTRAN has been a strong advocate in Commission proceedings to help spur broadband deployment,² and has launched an initiative to foster gigabit communities.³

Achieving Robust and Ubiquitous Broadband as a Goal

ADTRAN, along with the Commission, recognizes the importance of access to broadband. As the Commission made clear in the National Broadband Plan,⁴ broadband has become essential for business, education, health care, civic involvement and entertainment. And broadband's importance has continued to grow in the almost decade since the adoption of the National Broadband Plan. Thus, the Commission must consider robust and ubiquitous broadband as a lodestar in this proceeding examining reform of the broadband subsidy program.

The *Notice* concurs, indicating that “[c]losing the digital divide and bringing robust,

² E.g., Comments of ADTRAN in WC Docket No. 17-84, filed January 17, 2018; Comments of ADTRAN in WC Docket No. 10-90, filed December 6, 2017; Comments of ADTRAN in GN Docket No. 17-199, filed September 21, 2017; Comments of ADTRAN in GN Docket No. 15-191, filed September 15, 2015; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed August 8, 2014; Comments of ADTRAN in WC Docket No. 10-90, filed March 28, 2013; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed January 18, 2012; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed April 18, 2011.

³ See, *Press Release*, "ADTRAN Sets the Nation's Communities on the Path to Gigabit Transformation -- Utilities, MSOs and land developers deliver Gigabit broadband to over 350 communities," <http://phx.corporate-ir.net/phoenix.zhtml?c=67989&p=irol-newsArticle&ID=2178711>; <http://gigcommunities.net/adtran-reaches-200-gigabit-community-milestone/> ("More than 200 communities are now able to access [next-generation gigabit broadband services](#) as a result of ADTRAN's Enabling Communities, Connecting Lives program, ADTRAN announced August 11."); *Light Reading*, August 13, 2014, "Adtran Launches 'Gig Communities' Initiative," available at <http://www.lightreading.com/broadband/fttx/adtran-launches-gig-communities-initiative/d/d-id/710330>. See also, <http://www.adtran.com/index.php/broadband-access>.

⁴ *Connecting America: The National Broadband Plan*, available at <https://www.fcc.gov/general/national-broadband-plan>.

affordable high-speed broadband to all Americans is the Commission’s top priority.”⁵ And in order to support that goal, the Commission proposes to establish the RDOF and committing at least \$20.4 billion over the next ten years to that subsidy program. ADTRAN agrees with these two main pillars of the Commission’s proposals – a minimum of \$20.4 billion and a ten-year term. That funding level should greatly reduce the digital divide, and the ten-year term should provide sufficient certainty and stability to incent service providers to commit their own capital, in conjunction with the RDOF subsidies, to build out broadband to many of the unserved and underserved locations across the country.⁶ ADTRAN also supports the proposal to award the RDOF subsidies in two phases – the first phase will target areas that are wholly unserved by 25/3 Mbps broadband service, and the second phase will target areas that are partially served (as well as any unserved areas that are not awarded in the Phase I descending clock auction).⁷

But the Commission must not only get the big picture right – it must also ensure that the details of the RDOF will ensure that the program works efficiently and successfully. And as discussed below, some of the proposed details in the *Notice* should be modified so that the unserved and underserved residents and businesses will be able to get robust, reliable and reasonably priced broadband services. The Commission must be a wise steward of ratepayers’ funds, particularly given the heavy burden the current contribution system imposes.⁸

⁵ *Notice* at ¶ 12.

⁶ *Notice* at ¶¶ 15-16.

⁷ *Notice* at ¶ 3.

⁸ The Commission recently announced the proposed contribution factor for the Fourth Quarter of 2019 of 25%. *Public Notice*, “Proposed Fourth Quarter 2019 Universal Service Contribution Factor,” DA 19-910, released September 12, 2019. ADTRAN has elsewhere urged the Commission to complete its reform of the USF contribution system. *See*, Comments of ADTRAN in WC Docket No. 06-122, filed July 29, 2019 at pp. 7-8.

But being efficient does not simply mean the initial process of awarding subsidies to the bidder that will accept the lowest subsidy amount. The *Notice* refers to the Commission’s “successful Connect America Fund (CAF) Phase II auction.”⁹ ADTRAN believes that it may be premature to consider the CAF Phase II auction as “successful.” While that auction did select bidders who proposed service at prices significantly below the reserve prices, the winning bidders have not yet implemented and provided robust and reliable broadband services to all locations at the promised speeds. And certainly, based on experience with other federal broadband subsidy programs – including NTIA’s Broadband Technology Opportunities Program (“BTOP”) and USDA’s Rural Utilities Service Broadband Initiatives Program (“BIP”) under the American Recovery and Reinvestment Act (“ARRA”) – the awardees did not always deliver what they promised. There were problems with the “deliverables” in some instances under both the BTOP and BIP grant programs.¹⁰ In our comments below, ADTRAN addresses how the Commission can help ensure that the initial deployment and ongoing performance obligations are met.

But even at the preliminary stage of determining who should be awarded the broadband subsidies under the proposed descending clock auction, the Commission must ensure that it considers value, not simply price. While the principle of “technical neutrality” is laudable, the term must be defined and applied correctly. “Technical neutrality” does *not* mean that all access technologies should be subsidized regardless of their ability to support the broadband services

⁹ *Notice* at ¶ 2.

¹⁰ See, e.g., Dept of Commerce OIG Report on EAGLE-Net project: <https://www.oig.doc.gov/OIGPublications/OIG-14-011-M.pdf>; see also <https://www.multichannel.com/news/taking-aim-eagle-net-381202>; https://www.politico.com/story/2015/07/broadband-coverage-rural-area-fund-mishandled-120601_full.html?print; <https://www.telecompetitor.com/rus-broadband-stimulus-3-5-billion-program-was-it-a-failure/>.

and applications needed by consumers. Rather, it means that the ability of a given proposed service to meet the required performance should be evaluated without regard to the underlying access technology. Moreover, the Commission needs to consider the differences in technologies in determining which bidder will be granted an RDOF subsidy. The *Notice*'s proposals recognize these differing characteristics in assigning weights to different broadband services, but as discussed below, ADTRAN believes some refinements to the Commission's proposals are necessary.

Setting the Parameters for the Broadband Services that Will be Subsidized

Given the ever-increasing importance of broadband service, ADTRAN supports the *Notice*'s proposal to utilize 25/3 Mbps as the baseline service that will be supported by the RDOF.¹¹ This level of broadband service is sufficiently robust to support most applications, including 4k streaming.¹² Moreover, 25/3 Mbps is the benchmark selected by the Commission as “advanced telecommunications capability” under Section 706.¹³

At the same time, the Commission should encourage the deployment of broadband services with even greater capabilities, which can support future services for multiple simultaneous users in a household. Given the ten-year term of the RDOF support and the continuing evolution of broadband services at a rapidly increasing pace, a 25/3 service that is

¹¹ *Notice* at ¶ 14.

¹² Netflix recommends a downlink speed of 25 Mbps for streaming Ultra 4K TV, although other sources indicate that 15 Mbps will be sufficient to support 4K TV. Compare <https://help.netflix.com/en/node/306> (Netflix recommendation of 25 Mbps) with <https://recombu.com/digital/article/how-much-is-netflix-4k-ultra-hd-min-broadband-speed> (indicates that 15-20 Mbps can support 4K TV).

¹³ *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 34 FCC Rcd 3857, 3860-63 (released May 29, 2019).

considered “robust” currently is likely to be just “adequate” in a decade. ADTRAN agrees with the Commission that higher broadband speeds should be subsidized by the RDOF where it can be done economically, and supports the additional Above Baseline and Gigabit service tiers proposed in the *Notice* as a means of encouraging the deployment of such faster services.¹⁴ Such an effort to deploy “future-proofed” broadband service is a laudable goal.

ADTRAN also agrees with the *Notice*’s proposal to require the broadband service provider to offer voice service.¹⁵ Such a requirement is reflected in the Telecommunications Act of 1996 that serves as the basis for the Universal Service Fund and the Connect America Fund.¹⁶ The obligation to provide voice service is also necessary to ensure that residents and businesses in these unserved areas can access 911 emergency service.¹⁷ The Commission in the context of the CAF Phase II auction recognized the public interest in assuring access to voice services, and included an obligation to conduct testing for the high-latency option that ensures that quality voice services are being supported.¹⁸

Likewise, ADTRAN supports the *Notice*’s proposals to specify the parameters for assessing the minimum monthly capacity and maximum rates that the service provider must offer with these subsidized services.¹⁹ The *Notice* would incorporate values and adjustment

¹⁴ *Notice* at ¶ 23.

¹⁵ *Ibid.*

¹⁶ *See*, 47 U.S.C. § 254(b)(3).

¹⁷ *See, Federal-State Joint Board on Universal Service*, 12 FCC Rcd 8776 (1997) at ¶ 56. *See also*, 47 U.S. Code § 615a–1.

¹⁸ *Connect America Fund*, WC Docket No. 10-90, Order, 33 FCC Rcd 6509 (2018) (*Performance Measures Order*); *Order on Reconsideration*, DA 19-911, Released September 12, 2019.

¹⁹ *Notice* at ¶ 23.

mechanisms from CAF Phase II. The rates charged to subscribers would have to be “reasonably comparable to rates offered in urban areas.”²⁰ With respect to the usage, for the Above Baseline and Gigabit service, subscribers would get a usage allowance of 2 terabytes per month.²¹ And for the Baseline service, it would need to include a “150 gigabytes (GB) monthly usage allowance or a monthly usage allowance that reflects the average usage of a majority of fixed broadband customers, whichever is higher.” The *Notice* proposes to incorporate the *Phase II Auction Order* methodology for setting the usage allowances, and ADTRAN endorses that approach. In any event, the Commission must ensure that this usage allowance is not static, but will increase as the average usage goes up. This is critical in light of the rapidly escalating growth in usage.²² In addition, the Commission should not allow broadband service providers to discourage usage short of the usage cap, including de-prioritization of traffic or rate limiting after some lower threshold is exceeded.²³

The *Notice* also proposes to incorporate the latency specifications from CAF Phase II:

[L]ow latency means 95% or more of all peak period measurements of network round trip latency are at or below 100 milliseconds, and high-latency means 95% or more of all

²⁰ *Ibid.*

²¹ *Ibid.*

²² U.S. households consumed an average of 268.7 gigabytes (GB) of data in 2018, up from 201.6 GB for 2017, according to a new report about U.S. household broadband data consumption from OpenVault, a provider of data consumption and analytics software. <http://openvault.com/openvault-broad-based-broadband-usage-acceleration-in-2018-1tb-power-users-double-to-4-12-of-all-households/>. Median usage was 145.2 GB per household in 2018, up from 103.6 GB in 2017. The increase in average consumption was 33.3% and the increase in median consumption was 40%.

²³ *Cf.*, <https://www.hughesnet.com/frequently-asked-questions>:

Unlimited Data: All plans have No Hard Data Limits. If you exceed the amount of data in your plan, we won’t cut you off or charge you more. Stay connected at reduced speeds.

peak period measurements of network round trip latency are at or below 750 milliseconds and a demonstration of a score of four or higher using the Mean Opinion Score with respect to voice performance.²⁴

ADTRAN agrees with the proposal in the *Notice* to adopt a latency metric, and to distinguish between low latency and high latency services.²⁵ Latency can significantly affect a user's broadband service.

Geostationary satellite service providers have deployed high throughput satellites that have made possible broadband service with data rates that ostensibly meet the 25/3 Mbps baseline benchmark proposed in the *Notice*.²⁶ However, the high latency of such services will adversely affect or limit the applications that a subscriber can use. Following are examples of broadband applications or functions that perform poorly over a high latency service.

- ***Interactive online gaming*** – any interactive services, such as online gaming, that require real time or near-real time responses would be effectively unusable.
- ***Web page loading*** -- Transmission Control Protocol (TCP) and its multistep handshake process performs poorly over long delay links due to round trip response times and higher error rates.²⁷ Satellite service providers use TCP acceleration or other techniques to

²⁴ *Notice* at ¶ 23 (citations omitted).

²⁵ *Notice* at ¶ 23.

²⁶ <https://www.hughesnet.com/about/hughesnet-gen5>; <https://www.exede.com/business-order-availability/?zip=22314>.

²⁷ Most web pages are composed of a number of objects, including text, graphics, and applets. When a web page is accessed, the first object requested is the base file for the page. That file provides directions for accessing other objects. Some of those objects may point to yet other objects. Each object must be requested with a separate HTTP “Get” command and retrieved via a TCP connection. There are limits in most consumer operating systems on how many concurrent TCP connections may be opened, so only so many objects can be downloaded in parallel. Each HTTP command, and each TCP connection, generates at least one sequence of messages between the client and server that requires receipt of the previous message before the response can be transmitted. Each of these sequences requires a round trip through the network, or a “turn,” to complete. As a result of this multiplier effect, where the round trip delay is above 100 ms, even infinite download speed will not reduce the average webpage download time to less than 4 seconds – the limit for “acceptable” downloading time under Broadband Forum,

mitigate this degradation, but these are not ideal solutions, especially for the multiple smaller connections associated with web page loading.²⁸ ADTRAN observes that with such techniques, the internet web-browsing experience varies widely depending on which objects have been pre-loaded. Moreover, access to dynamic content is a key attribute of broadband access, and by definition, this type of information cannot be pre-downloaded and cached locally at the subscriber terminal.

- ***New transport level protocols*** -- Quick UDP Internet Connections (QUIC), which runs over User Datagram Protocol (UDP), may still have the same issues as non-spoofed TCP. Although introduced relatively recently, QUIC is used by more than half of all connections from the Chrome web browser to Google's servers. The Internet Engineering Task Force is just starting to consider how to get QUIC to perform well over satellite links.²⁹
- ***Virtual private networks*** -- services that use Internet Protocol Security at the network level, including many VPNs, experience degraded service when subject to high latency.³⁰
- ***Over the top VoIP*** -- OTT VoIP and video-chat applications typically use larger frame sizes and buffers, and the traffic will not be provided priority, so these over the top applications will suffer from degraded quality when provided over high latency links. As a result, subscribers to high latency services will effectively be limited to the managed voice offerings of the satellite broadband service provider.

Technical Report TR-126, "Triple-play Services Quality of Experience (QoE) Requirements," 13 December 2006. A much more detailed discussion of latency as a component of defining broadband is set forth in ADTRAN's White Paper, "Defining Broadband: Network Latency and Application Performance," attached to Letter from Stephen L. Goodman, Counsel for ADTRAN, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 09-51 (filed June 23, 2009).

²⁸ <https://www.slideshare.net/bjp4642/tcp-spoofing-37227528>. Such techniques also limit the content that can be accessed quickly. <https://corpblog.viasat.com/satellite-speeds/> :

With Viasat Web Acceleration service, predictive intelligence makes for snappy page loading far beyond satellite internet of the past. Basically, Viasat's web acceleration servers use innovative technology to accurately "guess" what subscribers need on the web and then have those things ready to go to accelerate load times -- even before receiving a specific command from a Viasat satellite.

²⁹ <https://tools.ietf.org/html/draft-kuhn-quic-4-sat-00>.

³⁰ <https://bentley-walker.com/articles/101>. Newer SSL-based VPNs, however, can be spoofed similarly to other TCP traffic, although that may limit the VPN services a high latency customer can select.

- **Miscellaneous applications** -- miscellaneous applications, including drive mapping, Citrix and other applications that rely on client software can have problems operating over high latency satellite links.³¹

These various shortcomings render high latency service as clearly inferior to low latency services. The Commission recognize these differences in CAF Phase II, and adopted a weighting system to account for these differences.³² The *Notice* likewise proposes to utilize a weighting system to account for the drawbacks to high latency broadband service, and ADTRAN agrees that this approach of recognizing the differences is necessary and compatible with technological neutrality. The *Notice* suggests a weight of 40 for the high latency services, and a weight of 0 for the low latency services.³³ The *Notice* also proposes weights of 50 for the Baseline speed, 25 for the Above Baseline speed, and 0 for the Gigabit speed offerings.³⁴ The *Notice* observes that the proposed weightings provide a 90-point spread between the least and best performing tiers, similar to the CAF Phase II auction. But the *Notice* also asks whether the Commission should “increase the 90-point spread between the best and least performing tiers to something higher—*e.g.*, 95% or more?”³⁵

ADTRAN urges the Commission to adopt the alternative proposal of a 95-point spread between the highest and lowest service tiers, and to do so by increasing the weight of the high latency service from 40 to 50, while decreasing the weight for the baseline speed from 50 to 45.

³¹ <https://www.vsat-systems.com/Education/Satellite-Internet-Explained/Performance/Protocols-and-applications/>.

³² *Connect America Fund et al.*, WC Docket No. 10-90 et al., Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 5949, 5959-60 (2016) at ¶¶ 24-25.

³³ *Notice* at ¶ 25.

³⁴ *Ibid.*

³⁵ *Ibid.*

As explained above, there are significant drawbacks to a high latency service. Moreover, under the ten-year term of the RDOF, the customers will be saddled with such inferior service for a very significant period of time. Thus, increasing the incentive to deploy a “future proof” Gigabit service would help ensure that the RDOF subsidy program was obtaining the best value for its investment, not merely providing subsidies at the lowest cost.

Performance Measurement and Enforcement

Determining which prospective broadband service provider proposes to offer the best value in order to be selected to receive the RDOF is critical to the success of the program. But that will be for naught if the promised service is not actually delivered to the subscribers. Thus, equally important as the design of the descending clock auction is the program that the Commission adopts for monitoring and enforcing the deployment and performance obligations.

The *Notice* proposes to rely on the monitoring and enforcement mechanisms adopted for CAF Phase II.³⁶ ADTRAN generally supports these proposals, but additionally believes that the Commission should further strengthen the monitoring and enforcement efforts to ensure that the USF contributors are receiving the full value for their dollars. As the Commission recognizes, spectrum-based broadband service providers could have incentives to focus their capacity on non-RDOF customers who would typically pay higher prices and have lower usage caps, particularly because adding capacity would require additional capital expenditures.³⁷ That problem is exacerbated for satellite broadband providers, in light of the long lead time and significant cost of launching a new satellite.

³⁶ *Notice* at ¶¶ 26-39.

³⁷ *Notice* at ¶ 40.

The Commission thus needs to carefully monitor ongoing performance as well as initial deployment. Implementation of the CAF Phase II performance measurement program (as clarified) should be a pillar of those monitoring efforts.³⁸ And the obligations to report deployment details should be a second pillar.³⁹

ADTRAN also urges the Commission to supplement those formal monitoring programs with “crowd sourcing” as an additional means of tracking whether the subsidized broadband service providers are meeting their deployment and performance goals. The Commission is considering utilizing “crowd sourcing” in other contexts.⁴⁰ The Commission could create a portal for crowdsourced data on the performance of RDOF subsidized broadband service. Because the Commission acknowledges the incentives for spectrum-based broadband service providers to direct capacity to non-subsidized customers, potential subscribers could use the portal to report instances of service not being available, despite a provider’s claim that it has met its deployment obligations. Similarly, subscribers in RDOF-funded territories could report self-conducted speed tests as evidence of performance below the Commission-specified requirements.⁴¹

ADTRAN recognizes that such crowd-sourced data may not provide definitive proof that a subsidized provider was not meeting its deployment of performance obligations. Speed tests

³⁸ Notice at n. 36. See also, *Connect America Fund*, DA 19-911, released September 12, 2019 (Order on Reconsideration).

³⁹ Notice at ¶¶ 32-35.

⁴⁰ *Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program*, FCC 19-79, released August 6, 2019, at ¶¶ 88-98.

⁴¹ Indeed, the designers of app-based or web-based speed and latency measurement programs could readily include an option that would allow the results of the tests to be reported to the Commission.

can be affected by numerous factors, including the device being operated, the Wi-Fi network and the number of devices being operated simultaneously in the household. ADTRAN would thus suggest that the Commission use the crowdsourced data as a trigger for a further investigation. If a sufficient number of reported data points suggest that there may be a problem with performance or deployment, USAC or the Commission could initiate an investigation.

ADTRAN also believes that the Commission must make clear that it will not tolerate deliberate violations of the obligations imposed on RDOF subsidy recipients. ADTRAN agrees that where the Commission-mandated reports or testing programs reveal that the broadband service provider failed to meet the deployment milestones or service requirements, penalties should be imposed.⁴² Likewise, if crowd sourced information triggers an investigation that finds a violation, the Commission should impose a penalty. Moreover, as a further means of encouraging compliance with the performance requirements, ADTRAN urges the Commission to adopt whistleblower regulations that would reward informants for providing information on violators. The Commission could model such regulations on the IRS rules, which provide a percentage of the recovered amount to people who provide specific and credible information to the IRS if the information results in the collection of taxes, penalties, interest or other amounts from the noncompliant taxpayer.⁴³ This would provide another important backstop against

⁴² Notice at ¶¶ 36-39. The Commission must also make explicit that the “service requirements” that trigger penalties if not met include the monthly usage obligations that the Commission sets annually, and that the non-compliance provisions discussed in paragraphs 36-39 apply to these requirements as well. The Notice at paragraph 26 indicates that “we propose subjecting them to the same framework for measuring speed and latency performance and the accompanying compliance framework as are applicable to all other recipients of high-cost support required to serve fixed locations”, citing the *CAF Performance Measurements Order*. However, that previous decision does not address a service provider’s failure or inability to expand capacity to meet the specified monthly usage obligations, which are projected to grow significantly over the ten-year term of the RDOF subsidies. See n. 22, *supra*.

⁴³ <https://www.irs.gov/compliance/whistleblower-informant-award>.

RDOF grantees failing to meet the performance obligations.

Additional Issues

ADTRAN also wants to address briefly some additional discrete questions raised in the *Notice*. The *Notice* seeks comment on whether to adopt subscribership milestones, as well as penalties for enforcing those obligations.⁴⁴ While ADTRAN agrees that it is important to foster broadband adoption, not just broadband deployment, ADTRAN does not believe that it would be fair to penalize the RDOF grantees if subscribership falls short of a Commission-designated level. Subscribership will be affected by numerous factors beyond the control of the broadband service provider, including the demographics of the residents and businesses in the territory and the efficacy of the Commission's (and perhaps State's) Lifeline programs. As discussed above, ADTRAN agrees that broadband service providers – particularly spectrum-based providers – could have incentives to focus their capacity on non-subsidized customers. But ADTRAN believes that the best way to address that concern is by doing so directly through supplementing the *Notice*'s proposed monitoring and enforcement mechanisms with crowdsourcing and whistleblower provisions.

In connection with assessing whether a territory is unserved and thus eligible for RDOF subsidies, the *Notice* asks whether “price cap carriers [should] be given an opportunity to certify that they will upgrade service at those locations to 25/3 Mbps by the end of 2020”.⁴⁵ ADTRAN urges the Commission to adopt such a procedural step. It makes no sense to use the limited RDOF resources to subsidize broadband deployment to a location, that while presently unserved, will be served by the time the RDOF subsidies would begin.

⁴⁴ *Notice* at ¶¶ 41-42.

⁴⁵ *Notice* at n. 96.

The *Notice* also seeks comment on transitional support for the incumbent service providers.⁴⁶ ADTRAN believes that transitional support is necessary, otherwise there is a likelihood that subscribers could lose service during the period when the RDOF grantee is authorized to receive support and when it actually commences service. Under the service deployment milestones proposed in the *Notice*, for 20 percent of the locations in a territory, it could take six years before broadband service was deployed, and for 40 percent of the locations it could take five years. But if the model-based or legacy support is terminated when a new RDOF grantee is authorized, any current broadband service (at less than the 25/3 Mbps minimum that establishes who is “served” presently) could disappear, because the Commission would no longer subsidize the legacy provider (unless it was the RDOF grantee). Alternatively, those customers could face steep price increases. ADTRAN acknowledges that the incumbent providers had no expectation of additional model-based subsidy beyond the seven-year term,⁴⁷ but likewise there was also no expectation of an obligation to continue providing service without the subsidies. ADTRAN thus urges the Commission to provide for transitional relief to avoid a loss of service or precipitous price increase. In addition, the Commission should consider tying “bonus” payments to the RDOF grantees for accelerated deployments, in order to incentivize deployment by the RDOF grantees ahead of the six-year milestone schedule.⁴⁸

Conclusion

ADTRAN applauds the Commission’s efforts to address the digital divide by proposing to allocate over \$20 billion to bring broadband to unserved and underserved locations. In doing so, the Commission must be sure that those subsidies bring the best value, not simply awarding the funds to entities promising the lowest price. The proposed descending clock auction, with

⁴⁶ *Notice* at ¶¶ 46 and 94-104.

⁴⁷ *Notice* at ¶ 102.

⁴⁸ *Notice* at ¶ 28.

weighting of the different service tiers and latencies, should accomplish that goal. In addition, the Commission needs to adopt strong performance measurement and enforcement programs. ADTRAN suggests the Commission reinforce the proposed measurement and enforcement regimes by adding crowdsourcing and whistleblower incentives to ensure that the subsidy recipients live up to their obligations. ADTRAN believes the RDOF program as proposed by the Commission, which also incorporates the additional changes suggested by ADTRAN, will well serve the public interest.

Respectfully submitted,
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