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

In the Matter of	)	
	)	
Modernizing the E-Rate Program for	)	WC Docket No. 13-184
Schools and Libraries	)	

COMMENTS OF ADTRAN, INC.

ADTRAN, Inc. ("ADTRAN") takes this opportunity to address several issues raised in the Commission's *Notice of Proposed Rulemaking* regarding review of the E-Rate program for schools and libraries.[1] The Notice seeks comment on refinements to the "Category Two" aspects of the E-Rate program. As explained below, ADTRAN recognizes the importance of the broadband internal connections at schools and libraries subsidized by the "Category Two" funding. Thus, ADTRAN supports the Commission's proposals to strengthen that program, although it suggests a few improvements to the proposals set forth in the *Notice*.

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 Bluesocket Division product family also includes a suite of innovative wireless LAN solutions that combine virtualized, cloud-enabled control and management with high-performance access points. Bluesocket wireless solutions are ideal for large enterprises, Small and Medium Businesses (SMBs), educational institutions and government agencies seeking to expand wireless coverage to meet the growing demand for always-on wireless access.

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[1]   *Modernizing the E-Rate Program for Schools and Libraries*, FCC 19-58, released July 9, 2019, 84 Fed Reg 34107 (July 17, 2019), (hereafter cited as "*Notice*").

ADTRAN's solutions are currently in use by service providers, schools and libraries, private enterprises, government organizations and millions of individual users worldwide. ADTRAN's customers currently benefit greatly from the USF programs. ADTRAN thus brings an expansive perspective to this proceeding, as well as an understanding of the importance to individuals, communities and our country of robust and ubiquitous broadband, particularly as provided to schools and libraries. ADTRAN has been a strong advocate in Commission proceedings to help spur broadband deployment,[2] and has itself launched a gigabit initiative that has far exceeded its initial goal of facilitating the deployment of 200 gigabit communities by the end of 2015, with over 350 gigabit communities deployed.[3]

Permanent Replacement of the "Two-in-Five" Rule

The Commission's National Broadband Plan – now almost a decade old – established the need for robust broadband deployment to support seven sectors: Health Care, Education, Energy and the Environment, Economic Opportunity, Government Performance, Civic Engagement and Public Safety.[4] With respect to education, the National Broadband Plan indicated:

Education. Broadband can enable improvements in public education through e-learning

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[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*, Part III, https://www.fcc.gov/general/national-broadband-plan (hereafter cited as "*National Broadband Plan*").

and online content, which can provide more personalized learning opportunities for students. Broadband can also facilitate the flow of information, helping teachers, parents, schools and other organizations to make better decisions tied to each student's needs and abilities. To those ends, the plan includes recommendations to:

> ➤ Improve the connectivity to schools and libraries by upgrading the FCC's E-Rate program to increase flexibility, improve program efficiency and foster innovation by promoting the most promising solutions and funding wireless connectivity to learning devices that go home with students.

> ➤ Accelerate online learning by enabling the creation of digital content and learning systems, removing regulatory barriers and promoting digital literacy.

> ➤ Personalize learning and improve decision–making by fostering adoption of electronic educational records and improving financial data transparency in education.[5]

The criticality of robust and ubiquitous broadband for schools has continued to grow since adoption of the National Broadband Plan.

Broadband allows American students, wherever they attend school, access to almost unlimited education resources. Whether in a small rural school of less than a hundred students, or a large urban school with thousands of students, robust broadband allows every student to tap into Advanced Placement classes, arts programs, special education classes, language programs and almost unlimited resources for research. Moreover, in an increasingly competitive global marketplace, the United States needs a well-educated workforce that these broadband-supported educational opportunities provide. Indeed, this ability to enhance science, technology, engineering and math ("STEM") programs is more important than ever.[6]

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[5]   *National Broadband Plan* at pp. XIII-XIV.

[6]   *E.g*., Department of Education, Science, Technology, Engineering, and Math, https://www.ed.gov/Stem:

In an ever-changing, increasingly complex world, it's more important than ever that our nation's youth are prepared to bring knowledge and skills to solve problems, make sense of information, and know how to gather and evaluate evidence to make decisions. These are the kinds of skills that students develop in science, technology, engineering and math—disciplines collectively known as STEM. If we want a nation

The Commission's Schools and Libraries Program has helped spur broadband deployment to schools around the country. According to the Commission's most recent Broadband Deployment Report, and using the short-term and long-term goal for broadband connectivity to schools of 100 Mbps per 1,000 students and staff and 1 Gbps per 1,000 students and staff, respectively, 98% of school districts now meet the Commission's short-term connectivity goal. Regarding the long-term connectivity goal for schools, the Commission found that, based on the most recent data, 28% of school districts currently meet the goal, which is up from 22% in 2017 and just 9% in 2015.[7] The Schools and Libraries Program clearly serves the public interest in fostering the deployment of broadband service to schools.

When the Commission created the Schools and Libraries Program, the primary emphasis was on getting broadband service deployed to every school. Indeed, the primacy of broadband deployment to the schools was reflected in those being deemed "Priority One" services, and the internal connections being deemed "Priority Two" services. At that time, while very important, computers played a limited role in students' education, with student access via dedicated computer labs. That has certainly changed. Computers have taken on a much greater role, and now it is critical to ensure not only that robust broadband is deployed to every school, but also that every student can access that resource. And Wi-Fi technology makes that possible.

In 2014, the Commission adopted two orders to modernize the E-Rate Program that

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where our future leaders, neighbors, and workers have the ability to understand and solve some of the complex challenges of today and tomorrow, and to meet the demands of the dynamic and evolving workforce, building students' skills, content knowledge, and fluency in STEM fields is essential. We must also make sure that, no matter where children live, they have access to quality learning environments. A child's zip code should not determine their STEM fluency.

[7]   *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion,* FCC 19-44, released May 29, 2019 at ¶¶ 50-51.

recognized the increased importance of the internal connections/"Priority Two" services.[8] In those decisions, the Commission took a number of steps to help achieve the goal of ensuring affordable access to high-speed connectivity within schools and libraries. The Commission sought to provide broader and more equitable support for the internal connections necessary to facilitate digital learning. The Commission no longer considered internal connections to be "Priority Two" services, instead changing the nomenclature to "Category Two" services. The Commission also established a separate five-year test period target budget for Category Two services. Along with that, the *2014 E-Rate Orders* replaced the funding mechanism that awarded internal connection funding to the schools with the highest discount rates, limited only by the "the two-in-five rules" -- which limited funding for internal connections for any given school or library to two out of every five years, but placed no limit on the amount of funding applicants could request. In lieu of the previous mechanism, the Commission increased the share of the school or library's portion of the funding from 10% to 15%, and established a pre-discount budget of $150 per student, with a $9,200 pre-discount funding floor.

With the impending end of the five-year test period, the *Notice* proposes to make the changes adopted in the *2014 E-Rate Orders* permanent. ADTRAN supports the Commission's proposal to permanently utilize a five-year budget for Category Two expenses for all eligible schools, rather than the previous "two-in-five" rule that effectively served to fund internal connection services only for the poorest schools. The experience over the last five years establishes that this approach has resulted in a more equitable distribution of funding for internal

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[8]   *Modernizing the E-Rate Program for Schools and Libraries*, 29 FCC Rcd 8870 (2014) ("*2014 First E-Rate Order*"); *Modernizing the E-Rate Program for Schools and Libraries*, 29 FCC Rcd 15538 (2014) ("*2014 Second E-Rate Order*").

connection, with many more schools taking advantage of the Category Two subsidies.[9] This, in turn, has led to wider, more robust deployment of broadband services within schools and libraries. And such capabilities are even more important now than when the Commission made this temporary change in 2014. ADTRAN thus urges the Commission to permanently extend the Category Two budget approach and avoid reverting back to the "two-in-five" rule for all applicants.[10]

Refinements to the Category Two Budget Approach

In addition to supporting the permanent adoption of the Category Two budget approach originally adopted as a temporary measure, ADTRAN believes that some further refinements to that budget approach will enhance the effectiveness of the E-Rate program. The *Notice* proposes to make permanent the 2014 expansion of Category Two eligible services of managed internal broadband services, caching, and basic maintenance of internal connections.[11] ADTRAN supports this Commission proposal. These additional services enhance the efficiency and utility of the internal connection, which in turn enhances the benefits of the broadband service to the school or library. The Commission thus should adopt this proposal.

ADTRAN also believes that some other services should be added to the list of capabilities that can be funded under the Category Two budget approach. ADTRAN urges the Commission to add security and filtering to this list. Such services should not be too expensive, because the incremental cost of bundling these capabilities into the services and equipment (or managed services) already being acquired should be relatively small. Moreover, the Category

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[9]   *Notice* at ¶ 15.

[10]   *Notice* at ¶ 14.

[11]   *Notice* at ¶ 18.

Two budget limits the total expenditures for which any school or library can be reimbursed, so

excessive cost burdens on the E-Rate program would not be a concern.

ADTRAN also believes that these additional services are critical. Schools and libraries

are already required to perform filtering.[12] And with regard to cybersecurity, ADTRAN

observes that schools and local governments have been targeted recently by ransomware

hackers,[13] thus reinforcing the need for these capabilities. The Commission seems to recognize

the need for cybersecurity by already including "firewall services" in its recently proposed list of

eligible Category Two services.[14] ADTRAN thus urges the Commission to add cybersecurity

services more generally to the list of eligible services.

With regard to the budget amounts, the *Notice* proposes to maintain the values adopted

by the Commission in 2014:

> [O]ver a five-year funding cycle, schools would be eligible to receive up to $150 (pre-discount) per student and libraries are eligible to receive up to $2.30 or $5.00 (pre-discount) per square foot (depending on their Institute for Museum and Library Services (IMLS) locale codes). Entities with low student population or small square footage would receive a budget floor of $9,200 over five funding years.[15]

ADTRAN believes that the Commission should increase these budget amounts somewhat, rather

than simply keeping them the same as the 2014 figures. ADTRAN believes that the use of the

2014 budget amounts will place an artificial and unnecessarily low ceiling on the amounts that

schools and libraries can claim. ADTRAN instead urges the Commission to adopt a (pre-

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12   47 U.S.C. § 254(h)(5).

13   *E.g.*, https://thehill.com/policy/cybersecurity/456780-cyberattacks-find-easy-target-in-nations-schools;
https://www.cnn.com/2019/05/10/politics/ransomware-attacks-us-cities/index.html.

14   *Public Notice*, "Wireline Competition Bureau Seeks Comment on Proposed Eligible Services List for the
E-Rate Program," DA 19-738, released August 2, 2019 at pp. 6 and 9.

15   *Notice* at ¶ 19.

discount) budget of up to $250 per student over a five-year budget cycle, and a "floor" of up to $20,000 (rather than $9,200) for smaller schools.[16]

Under the Category Two budget approach, schools would still be required to go through an open and competitive procurement process to ensure that the amount sought to be subsidized will be reasonable. Moreover, for the Category Two reimbursements, the schools will still be required to pay a portion of the costs (of at least 15%), providing further incentives for schools to minimize the Category Two expenses. Where those costs are below the Category Two budget amounts (either on a per student basis, or for smaller schools the "floor"), the schools can only be reimbursed for the E-Rate program portion of the costs. So, in most cases the amounts requested by schools under Category Two should be well below the increased budget amounts. However, providing the somewhat higher budget amounts as suggested by ADTRAN would allow schools with higher costs to obtain E-Rate funding more commensurate with their costs.

Depending on the particular architecture of a school, installing or retrofitting equipment for internal connections can vary greatly. And given the "fixed costs" for deploying equipment for a Wi-Fi system in a school, the proposed $9,200 "floor" would be inadequate for small schools without many pupils. The somewhat higher budget amounts proposed by ADTRAN would address these "outliers," without greatly expanding the total amount covered by the Category Two funding. Particularly in light of the criticality for small schools of ensuring that students have access to broadband within the school -- and not just broadband to the school – such a modification to the proposal in the *Notice* would well serve the public interest.

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[16]   *Notice* at ¶ 20.

Some Additional Issues Raised in the Notice

ADTRAN also wants to address a few of the other issues raised in the *Notice*. The Commission seeks comment on whether to provide higher budget amounts for schools and libraries in rural or Tribal areas.[17] ADTRAN acknowledges that the costs for the equipment used in remote or Tribal areas is not likely to vary much from the costs of such equipment deployed in urban areas. However, the remoteness can impact the costs of installation of that equipment, as a result of the higher costs of the technicians getting to those remote areas. And if a school chooses to use a managed Wi-Fi service, those costs are likely to be higher, because the managed services provider needs to factor in the higher costs of a "truck roll" to conduct any necessary maintenance. Thus, if the Commission does not adopt the higher Category Two budgets that ADTRAN suggested above (which would address higher-cost areas to serve), the Commission should at least provide higher budgets for schools and libraries in rural and Tribal areas.

The *Notice* also seeks comment on whether District-wide budgets would be appropriate instead of per-school budgets as utilized under the current Category Two budget program.[18] ADTRAN believes that it makes sense to provide a school district with the flexibility to allocate the E-Rate subsidies amongst the schools within its system. Because schools tend not to be architecturally uniform, the costs for implementing Wi-Fi networks can vary significantly, and the school district is best positioned to determine how those differing costs should be addressed. Moreover, providing the school districts with such flexibility would not inflate the E-Rate program costs, because the overall budget amount for the school district would stay the same, and the schools would still be subject to the same open, competitive procurement process.

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[17]   *Notice* at ¶ 21.

[18]   *Notice* at ¶¶ 22-27.

The *Notice* additionally seeks comment on whether the Commission should retain the current rolling five-year cycle, or whether the Category Two budget program should move to fixed five-year cycle from funding year 2020-2024.[19] While nominally somewhat simpler, ADTRAN is confident that USAC can keep track of differing budget cycles that evolve from using rolling periods. Moreover, whatever small amount of simplicity that would be gained by using a fixed five-year cycle would be outweighed by the problems that could arise because of schools opening (or closing) within the fixed cycle. ADTRAN thus urges the Commission not to adopt a fixed, five-year cycle.

Conclusion

ADTRAN supports the Commission's proposals to improve the E-Rate Category Two program by making the 2014 modifications permanent. Internal connections are increasing in importance, and this reform will help ensure that more schools have access to USF subsidies for these services. Moreover, as explained in these comments, ADTRAN also believes that there are some additional refinements that the Commission should adopt. Such a course of action will best serve the public interest.

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Respectfully submitted,
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[19]   *Notice* at ¶ 33.