



May 16, 2024

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
45 L Street NE  
Washington, DC 20554

**Re: *Addressing the Homework Gap Through the E-Rate Program*, WC Docket No. 21-31**

Dear Madam Secretary:

The Schools, Health & Libraries Broadband Coalition (SHLB) and the Open Technology Institute at New America (OTI) respectfully submit this letter to offer ways that the E-Rate program can fund cost-effective wireless solutions supporting off-campus connectivity.<sup>1</sup>

### **Summary**

E-Rate support should extend to any cost-effective wireless technology and service that provides internet access to students and library patrons off-premises, which should include wireless networks set up by the E-Rate applicant itself or its partners (referred to herein as “anchor-enabled networks”). Accordingly, the Commission should not “limit eligibility to Wi-Fi hotspots receiving *mobile* services,” as the NPRM proposes, but to “wireless” services.<sup>2</sup>

The E-Rate program already mandates various financial safeguards that would allow the Commission to prudently extend E-Rate support in this manner. In particular:

- The competitive bidding framework, the price-as-primary-factor rule, the discount matrix, and the requirement that applicants pay the non-discounted share of the service are measures that ensure applicants make cost-effective spending decisions; and

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<sup>1</sup> *Addressing the Homework Gap Through the E-Rate Program*, WC Docket No. 21-31, Notice of Proposed Rulemaking, FCC 23-91 (rel. Nov. 8, 2023) (“Hotspot NPRM”).

<sup>2</sup> The Hotspot NPRM notes that wireless technologies other than hotspots could be more expensive than traditional hotspots. Our experience is different. Other wireless services can often be more cost-effective than traditional hotspots.

- The same framework that currently governs an applicant’s cost-effective purchase of on-campus leased dark or self-provisioned fiber under E-Rate can also guide its procurement of off-campus internet connectivity solutions via an anchor-enabled network.

If the Commission requires further cost control measure(s) to fund anchor-enabled networks, we suggest that it should identify and limit the eligible categories of wireless equipment, service, and technologies that enable off-campus connectivity via anchor-enabled networks (while maintaining some flexibility to accommodate for changes in technology and to allow applicants to choose the options that best meet their needs). Additionally, the Commission could limit eligible anchor-enabled network funding to the cost of the most prevalent commercial approach, such as the average cost for hotspot equipment and service provided by a traditional mobile carrier available in the applicant’s local market.

Finally, the Commission should waive or eliminate the E-Rate cost-allocation requirement for off-campus services that enable remote learning. This would allow schools and libraries to use the E-Rate supported services at the school/library location to distribute Internet access through a private LTE or similar service without losing E-Rate support they would otherwise be eligible to receive, and which would not require them to receive additional E-Rate support. Essentially, not mandating cost-allocation of E-Rate supported services for off-campus educational use would reduce the cost of the network for schools and libraries *while not requiring one additional dime from the E-Rate program*.

### **Extending E-Rate Support to Any Cost-Effective Wireless Technology**

SHLB and OTI submitted extensive comments supporting the FCC’s proposal to allow E-Rate support for wireless devices and services to serve student and library patrons off-campus.<sup>3</sup> We recognized that schools and libraries may be able to successfully connect students and patrons lacking internet access at home by distributing mobile carrier wireless hotspots, as many did during the Emergency Connectivity Fund (ECF) program. However, we also described how, in many locations, hotspot signals relying on a traditional mobile carrier network simply won’t work to solve the Homework Gap. In many rural areas and low-income urban neighborhoods for example, traditional mobile carrier signals are nonexistent or are not strong enough to support remote learning, especially inside the home.<sup>4</sup> The record shows that the Commission has heard

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<sup>3</sup> See Comments of the Schools, Health & Libraries Broadband Coalition and Open Technology Institute at New America, *Addressing the Homework Gap Through the E-Rate Program*, WC Docket No. 21-31, FCC 23-91 (Jan. 17, 2024) (“SHLB and OTI Comments”).

<sup>4</sup> This was the case for Fresno Unified School District, who tested carrier RF coverage by performing “drive tests” in student neighborhoods. The District discovered that mobile carriers in the area provided signal strength adequate to make phone calls outdoors, but that could not support the heightened needs of remote learning beyond the classroom and especially indoors

directly from school districts in diverse areas – including East Moline (Illinois), Boulder Valley (Colorado) and Fresno (California) – that while off-the-shelf commercial hotspots work in many areas (particularly more affluent areas), they are often inadequate to support remote learning in many rural and low-income neighborhoods.<sup>5</sup> While these issues certainly affect rural and remote areas, they can also affect those living in low-income neighborhoods and densely populated areas like multi-tenant dwelling units. The negative impacts of the Homework Gap on the learning and educational outcomes on low-income K-12 students in particular have long been studied and documented.<sup>6</sup> If the Commission’s decision supports only traditional mobile carrier services, we fear that many students and library patrons with the greatest need will remain unassisted and unconnected.<sup>7</sup>

Schools and libraries need the flexibility, subject to prudent fiscal safeguards, to choose the wireless technology, or combination of wireless technologies, that effectively supports remote learning for any or all of their students and patrons lacking home internet access. Specifically, support should extend to any cost-effective wireless technology and service that provides internet access to students and library patrons off-premises, which should include wireless networks set

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within many low-income neighborhoods. For additional detail, *See* SHLB Ex Parte, Hotspot Lending Program Proposal, *Modernizing the E-Rate Program for Schools and Libraries*, WC Docket No. 13-184, *In the Matter of Schools and Libraries Universal Service Support Mechanism*, CC Docket No. 02-6 (Nov. 3, 2023), available at <https://www.fcc.gov/ecfs/document/110302677962/1>.

<sup>5</sup> *See, e.g.*, Letter from Kristen Corra, SHLB Coalition, to Marlene H. Dortch, FCC, WC Docket No. 21-31, FCC 23-91 (March 27, 2024) (describing the experience of East Moline School District 37 and the Boulder Valley School District); Letter from Kristen Corra, SHLB Coalition, to Marlene H. Dortch, FCC, Addressing the Homework Gap Through the E-Rate Program, WC Docket No. 21-31 (Nov. 3, 2023) (describing mobile signal testing and the experience of the Fresno Unified School District).

<sup>6</sup> *See e.g.*, Institute for Educational Sciences, *Student Access to Digital Learning Resources Outside of the Classroom*, U.S. Department of Education, National Center for Education Statistics (2017), available at <https://nces.ed.gov/pubs2017/2017098.pdf>; “Nebraska Homework Gap Survey: Summary Report,” Office of Data, Research and Evaluation, Nebraska Department of Education, Appendix 10 (Aug. 22, 2019) (among 7,000 teachers responding, 48% agreed disparities in home internet access impacts the level and quality of homework assigned), available at <https://ruralbroadband.nebraska.gov/reports/2019/RBTF2019appendix10.pdf>; “Student Home Connectivity Study,” Consortium for School Networking (Spring 2021), available at <https://www.cosn.org/wp-content/uploads/2023/07/Home-Connectivity-Study-Report-5.5.21.pdf>.

<sup>7</sup> This is especially concerning for students that engage in rigorous, adaptive online learning and for students that *must* complete homework assignments and other school-related assignments completely online. Outside of school, they might not be able to physically get to other places offering free internet service and/or stay there as long as they need to finish their assignment.

up by the E-Rate applicant itself or its partners (referred to herein as “anchor-enabled networks”).

Accordingly, we also request that the Commission not “limit eligibility to Wi-Fi hotspots receiving *mobile* services,” as the NPRM proposes, but to “wireless” services.<sup>8</sup> From the perspective of schools and libraries, what’s most important is that the wireless hotspot and service is capable of supporting education and learning in a particular location, especially indoors. Under the Commission’s current proposal to limit funding to mobile services, school cellular networks using CBRS (which support mobility) would be eligible for funding, while a Wi-Fi mesh network (which does not support mobility), would not be eligible. This would be detrimental because a Wi-Fi mesh network could be a more cost-effective solution in certain areas, such as densely populated low-income neighborhoods. Both solutions should be eligible for funding if they provide cost-effective wireless service to support the unmet needs of students and library patrons.

### **Existing E-Rate Financial Safeguards**

SHLB and OTI anticipate two primary situations that may give rise to a request to extend or build off-campus internet connectivity via an anchor-enabled network: (1) where commercial mobile hotspot service is insufficient to support students’ and patrons’ off-premise learning and schooling, or (2) where the applicant determines that the cost of developing or deploying an applicant-enabled network is more economical over the useful life of those facilities when compared to mobile hotspot service.

To be clear: we believe it is reasonable to apply financial safeguards when funding off-campus services through the E-Rate program regardless of the technology used.<sup>9</sup> The current E-Rate rules already have financial safeguards to ensure that applicants have ‘skin in the game’ and incentives to select the most cost-effective wireless technology (or combination of wireless technologies) that serves the purpose of connecting students in rural areas and low-income urban areas to the school’s network for education. As SHLB and OTI previously suggested, the Commission could easily incorporate certain E-Rate rules already mandated in the program – the competitive bidding framework, the price-as-primary-factor rule, the discount matrix, and the

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<sup>8</sup> Hotspot NPRM at par. 19 (emphasis added).

<sup>9</sup> Among other reasons, the E-Rate program does not maintain an unlimited amount of funding, and we are no longer responding to an emergency situation like during ECF. Yet, such emergency situations reveal the extent of the Homework Gap. It has an impact on students’ education, employability, wellness, and life trajectories. *See* D’Andre J. Weaver, Ph.D., “Delivering on the Promise of Digital Equity,” Digital Promise (2022), available at <https://digitalpromise.org/wp-content/uploads/2022/12/Delivering-on-the-Promise-of-Digital-Equity.pdf>

requirement that applicants pay the non-discounted share of the service – to ensure applicants make cost-effective spending decisions.<sup>10</sup>

Additionally, allowing E-Rate to fund cost-effective wireless solutions can *inherently* promote cost-savings to the program, as applicants could build upon or sustain their existing off-campus initiatives (whether developed with funds through programs like the ECF and CARES Act, or through other grants, bonds, or unrestricted funds).

Further, as explained in our initial comments, the same framework that currently governs an applicant’s cost-effective purchase of on-campus leased dark or self-provisioned fiber under E-Rate can also guide its procurement of off-campus internet connectivity solutions via an anchor-enabled network.<sup>11</sup> As part of the E-Rate application process, an applicant would have to select the most cost-effective service after considering and evaluating all bids, with price being the primary factor. Just like in the current E-Rate rules, an applicant would also be able to consider other factors like service quality and the types of available technology options that can meet students’ off-campus internet connectivity needs. As such, while the costs to purchase hotspot service and devices from a traditional mobile carrier might initially appear to be the cheapest option, the applicant could establish that it is not a viable (and essentially not the most cost-effective) option to meet the *service quality needs* of its students or patrons. Through this process, the Commission can ensure that E-Rate funding is being used efficiently and that the connectivity needs of students and patrons are met.<sup>12</sup>

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<sup>10</sup> SHLB and OTI Comments at 26.

<sup>11</sup> See SHLB and OTI Comments at 21-23. Specifically, we suggested that “the Commission incorporate current E-Rate regulations that require applicants to seek bids for any possible wireless solutions that could serve students off-premises, including commercially available mobile services, and conduct a bid evaluation process wherein the applicant is required to select the most cost-effective service. This process would be similar to the process adopted by the Commission in the 2014 Second Modernization Order where an applicant is allowed to purchase dark fiber or build its own network, even where leased lit or managed services are already available in the market, as long as the applicant considers the traditional service option and concludes that dark fiber or self-provisioned services are most cost-effective. The Commission could require that applicants compare the cost of commercially available services to the cost of a school-distribution model by evaluating the cost based on the number of students or patrons expected to be served.” *Id.* at 22.

<sup>12</sup> The E-Rate Second Modernization Order resulted in better fiber services while reducing costs for applicants and the Universal Service Fund. In some cases, where commercial lit fiber was not available, this framework supported special construction so fiber could become available to schools and libraries.

## Additional Cost Control Measures

If the Commission requires further cost control measure(s) to fund anchor-enabled networks outside of those measures that are already part of the E-Rate program and referenced above, we offer the following additional measures:

- 1. The Commission should identify and limit the eligible categories of equipment, service, and technologies that enable off-campus connectivity via anchor-enabled networks, while allowing applicants some flexibility to choose the options that best meet their needs.**

An applicant's capital needs can vary when it extends or sets up an applicant-enabled off-campus network. For example, a school or library might choose to place towers/poles on the roofs of its building(s) and mount radios that emit service off-campus, as the Fresno Unified School District and the New York Public Library system have done using cellular technology and public access to Citizen Broadband Radio Service (CBRS) spectrum. Alternatively, a school or library might wish to use existing infrastructure to mount radios (such as municipal streetlights, as the school districts in East Moline, Illinois and Council Bluffs, Iowa, do). Also, similar to the E-Rate Second Modernization Order's "dark leased fiber", applicants might choose (as some have) to partner with a private firm that can build and maintain the wireless network, such as a local wireless internet service provider (WISP).

Within these various network models, an applicant might need funds to cover such costs as the towers/poles, radio access points (APs), base station radios (e.g., for cellular CBRS service), and/or Customer Premises Equipment (CPE) that a student or patron takes home to receive the internet service (i.e., the "hotspot" devices). Such costs are dependent upon the type of cost-effective wireless network model an applicant chooses.

Given this, we suggest that the Commission should specify certain categories of cost items that enable off-campus connectivity via an anchor-enabled network that would be eligible for E-Rate funding.<sup>13</sup> For example, such eligible costs could include (1) costs for equipment responsible for the transmission of service, such as poles/towers and base station radios/access points;<sup>14</sup> and (2) costs for the hotspot or functionally equivalent technology (the CPE) that receives the service,

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<sup>13</sup> The Commission would take comment on what equipment is required to enable off-campus connectivity and specify eligible cost items each year on the Eligible Services List.

<sup>14</sup> We are not suggesting, however, that siting costs on street furniture (such as costs associated with a monthly leased space on a pole) should be a reimbursable cost item.

such as a cellular modem embedded in the student’s laptop,<sup>15</sup> antennas, or other functionally equivalent modem or router.

The Eligible Services List (ESL) could provide categories of eligible wireless technologies, which would accommodate the equipment offerings available in a community and changes or advances in technology, and promote cost-effective solutions suited to the diverse geographic and other local challenges these institutions face. For example, the use of Wi-Fi mesh networks (with access points mounted on public infrastructure, typically street lights) and EBS-based or CBRS-based cellular service (either using schools and other public structures as ‘towers’ for base station transmitters or placing poles/towers on school property) are most common, as our groups described in 12 detailed case studies of school districts that have deployed networks connecting low-income students directly to the school’s network.<sup>16</sup>

**2. An applicant’s request for anchor-enabled network funding should be no more than the prevailing market cost for analogous commercial wireless hotspot services.**

Should the Commission be concerned that anchor-enabled network funding requests may unduly strain available E-Rate resources, SHLB and OTI further offer an additional cost control measure that limits funding for anchor-enabled networks. The Commission could limit eligible funding to the cost of the most prevalent commercial approach, such as the average cost for hotspot equipment and service provided by a traditional mobile carrier available in the applicant’s local market. Where the applicant receives one or more bids from a commercial Wi-Fi hotspot provider, those bids could establish the prevailing local market cost for the service, which could serve as a limit. If no commercially available services are bid, then the applicant would compare the pricing of market solutions in similar markets.

When an applicant conducts its cost comparison across all bids received, the calculation should include all costs evaluated over a multi-year period (such as five years). This is because the anchor-enabled network option may result in higher up-front deployment costs but much lower maintenance and operations costs over time. In comparing an anchor-enabled network versus traditional mobile commercial services, the total costs of deployment would be divided by the

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<sup>15</sup> Some anchor-enabled networks utilize a model whereby a student device (like a laptop or tablet) automatically connects to the network without needing to first connect to a take-home CPE. In these scenarios, we are not suggesting that the student laptop or tablet be a reimbursable cost item, only the cellular modem embedded in the laptop or tablet.

<sup>16</sup> See Matthew Marcus and Michael Calabrese, *The “To and Through” Opportunity: Case Studies of Schools and Community Networks Able to Close the Homework Gap for Good* (Aug. 2022), available at <https://www.shlb.org/uploads/Policy/Policy%20Research/Anchor-Nets-Case-Studies-final.pdf>

number of students who lack sufficient off-campus internet connectivity and who would benefit from the deployment of wireless internet facilities.

This additional measure would ensure that there would be a built-in mechanism to ensure that the selection of the anchor-enabled network is still supported as the most cost-effective solution, where cost is the most significant factor while other factors like service quality are considered. In our experience, school districts use anchor-enabled networks on a targeted basis to fill in coverage gaps in low-income or rural areas where mobile signals are not strong enough to support remote learning indoors, and so benchmarking to the local market cost of commercial service is both prudent and aligned with this purpose.

In addition, to be clear, this benchmarking recommendation is limited to the off-campus connectivity funding requests for anchor-enabled networks and should not be extended to any on-campus services or equipment.

### **Waiving/Eliminating the Cost-Allocation Requirement**

Regardless of the type of applicant-enabled network a recipient chooses, we also note that each model requires some form of wireline broadband services to the school or library location backhaul. As noted above, we continue to strongly recommend that the Commission waive or eliminate the cost-allocation requirement for off-campus services so that applicants can use existing E-Rate supported services (as backhaul) at the school/library to distribute off-campus connectivity – with no to little costs to the program.<sup>17</sup> Right now, E-Rate applicants serving students off-campus can either (1) cost-allocate off-campus services from E-Rate funding requests as required by the rules or (2) purchase a separate Internet broadband connection from its E-Rate services—not because they need additional capacity, but simply so they do not lose E-Rate funding. Because there is no capacity cap for wireline Internet services—like there is for some wireless services—schools and libraries could use E-Rate supported services off-campus for no additional cost. This rule change alone will allow E-Rate schools to provide equitable educational opportunities for their students without any additional funds.

The anchor-enabled wireless network could also leverage existing on-campus security controls such as firewalls and content filters that districts are already paying for separately.

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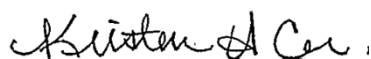
<sup>17</sup> SHLB and OTI Comments at 23-25. As we note in our comments, off-campus use by students will primarily take place outside of regular school hours when the school’s broadband connection is usually underutilized.



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SHLB and OTI commend and support the FCC’s initiatives to position E-Rate to drive positive change related to the persistent off-campus connectivity needs of students and library patrons. With the shift to the Digital Age, the effective education of future-ready graduates requires learning in and beyond the traditional classroom/school, and evidence shows such access to learning beyond school leads to better outcomes for students.<sup>18</sup> We believe that the E-Rate program —along with other state and federal broadband connectivity programs—can help to address remote learning needs and close the Homework Gap for good. If allowed to support other cost-effective wireless options, the program puts the applicant – the one closest to the community and the problem – in the driver’s seat to determine the most advantageous and cost-effective solution. Such flexibility not only directly benefits those in need of broadband access but establishes E-Rate contribution as a means to incentivize local community investment, strategic partnerships, and sustainable projects, while rewarding the community for its own entrepreneurship.

Respectfully,



SCHOOLS, HEALTH & LIBRARIES  
BROADBAND (SHLB) COALITION  
Kristen Corra  
Policy Counsel  
1250 Connecticut Ave. NW, Suite 700  
Washington, DC 20036



OPEN TECHNOLOGY INSTITUTE AT  
NEW AMERICA  
Michael Calabrese  
Director, Wireless Future Project  
740 15th Street NW, Suite 900  
Washington, D.C. 20005

cc: Elizabeth Cuttner      Erin Boone  
Justin Faulb              Adam Cassady  
Hayley Steffen          Allison Baker  
Deena Shetler            Johnnay Schrieber  
Greg Watson              Kristin Berkland  
Lauren Garry             Molly O’Connor  
Arpan Sura                Gabriella Gross

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<sup>18</sup> See, e.g., Keith Hampton, Gabriel Gales & Johannes Bauer, “Broadband and Student Performance Gaps after the Covid-19 Pandemic,” Quello Center (2023); Amina Fazlullah & Stephanie Ong, “The Homework Gap: Teacher Perspectives on Closing the Digital Divide,” Common Sense, at 9-11 (2019)