

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)

JOINT PETITION FOR CLARIFICATION OR, IN THE ALTERNATIVE, WAIVER OF
MICROSOFT CORPORATION, MID-ATLANTIC BROADBAND COMMUNITIES
CORPORATION, CHARLOTTE COUNTY PUBLIC SCHOOLS, HALIFAX COUNTY PUBLIC
SCHOOLS, GCR COMPANY, AND KINEX TELECOM

TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	
I. Embracing Changes in Technology Enables the E-rate Program to Better Achieve Its Objectives	5
II. Description of the Program.....	7
A. Participants.....	8
B. Technology.....	11
C. No Additional Costs Imposed on the Fund	13
III. The Commission’s Clarification Is Warranted and Will Allow Significant Improvements in Achieving Important E-rate Program Goals in Light of Technological Advancements	13
IV. The Petition Satisfies the Standard for Waiver of the Commission’s Rules	17
V. Conclusion.....	20

SUMMARY

Petitioners propose to extend the E-rate-covered broadband internet access service of 18 participating schools to the homes of eligible students that live in Charlotte County and Halifax County, Virginia via wireless transmission using TV White Spaces technology — at no additional cost to the E-rate fund. In support of this effort, Petitioners seek clarification that the E-rate program permits the use of TV White Spaces technology to extend an eligible school’s E-rate-covered internet access service to the homes of students in and around those schools for educational purposes. In the alternative, Petitioners seek a waiver of the Commission’s rules that, to the extent applicable, presume that E-rate-supported “educational purposes” exclude off campus connectivity, to permit such use of E-rate-supported services for the project described herein.

The current E-rate rules and the Eligible Services List do not provide clear guidance on the use of the technology that this project will implement. The Commission’s rules presume that on-premises use of supported services satisfies the educational purpose requirement of the E-rate fund, but the rules lack clarity regarding which off-premises uses satisfy this requirement. Although the Commission has approved a variety of off-premises use of supported services, uncertainty about the Commission’s E-rate rules makes schools wary of deploying new technologies to extend the reach of supported services.

This pilot project would assist in closing the homework gap of thousands of eligible students in the participating school districts using TV White Spaces technology. Given the significant benefits of the project including achieving the Commission's own objectives and the lack of any adverse impact on the E-rate fund, Commission clarification of its rules or, in the alternative, grant of a waiver would be warranted.

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Approximately five million American households with school-age children lack broadband internet access service.¹ This nationwide problem is particularly severe in Virginia's rural and low-income Charlotte and Halifax counties, where school-age children are five times as likely as other Americans to lack broadband internet access at home.² Without internet access at home, these students face an enormous educational barrier: unlike their connected peers, they cannot use a home internet connection to collaborate with their classmates on homework assignments, participate in discussion

¹ See *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, As Amended by the Broadband Data Improvement Act*, GN Docket No. 15-91, 2016 Broadband Progress Report, FCC 16-6, ¶ 120 (rel. Jan. 29, 2016) ("*2016 Broadband Progress Report*") (noting that one in ten Americans lacks high-speed broadband service); see also John B. Horrigan, "The numbers behind the broadband 'homework gap,'" PEW RES. CTR. (Apr. 20, 2015), available at <<http://www.pewresearch.org/fact-tank/2015/04/20/the-numbers-behind-the-broadband-homework-gap/>> [hereinafter *Homework Gap*].

² See *2016 Broadband Progress Report*, *supra* note 1, ¶ 120 (noting that one in ten Americans lack high-speed broadband service); Declaration of Dr. Merle P. Herndon ¶ 3 ("*Herndon Decl.*") (noting that half the families with school-age children in the Participating Schools lack home broadband access); Declaration of Nancy Leonard ¶ 3 (same) ("*Leonard Decl.*").

boards, research assignments online, apply to colleges or for scholarships, or otherwise develop the skills necessary to compete in the digital economy.

To address this challenge, Microsoft Corporation ("Microsoft"), together with Mid-Atlantic Broadband Communities Corporation ("MBC"), has developed a solution that will utilize TV White Spaces ("TVWS") technology to extend the broadband access of 18 schools in the Charlotte County and Halifax County public school districts (the "Participating Schools") to the homes of eligible students who live in those districts. The project will make broadband internet access available to thousands of students in the Participating Schools at no additional cost to the E-rate fund and could, in the longer run, close the connectivity gap for millions of students across the United States. Should the Commission grant the relief requested herein, this project will provide students with access to the Participating Schools' broadband from their homes, allowing them to collaborate, complete homework assignments, enhance their digital literacy, and otherwise leverage the educational benefits of on-premises E-rate-funded connectivity outside of school hours. In effect, this solution will bring the Commission one important step closer to closing the digital divide by eliminating the homework gap, putting the promise of the Information Age within the grasp of many it has eluded to date.

As explained herein, Federal E-rate funds can and should be stretched further to produce the greatest possible educational benefits through the application of new technology. To help accomplish this objective, Microsoft, MBC, the Participating

Schools, GCR Company, and Kinex Telecom (collectively, "Petitioners") seek clarification that the Commission's E-rate rules permit the use of new TVWS technology to extend an eligible school's E-rate-covered internet access service to the homes of students for educational purposes. In practice, this clarification will allow the Participating Schools to extend E-rate-subsidized broadband service beyond school property to eligible students in their own homes to help close the homework gap. In the alternative, Petitioners seek a waiver of the Commission's definition of educational purpose³ to the extent that its presumption operates as a limitation that would prohibit use of TVWS technology for purposes of this project.

As described below, the current rules and the Eligible Services List do not provide clear guidance on the use of the technology that Microsoft's solution will implement. The Commission's rules presume that on-premises use of supported services satisfies the educational purpose requirement of the E-rate fund, but they lack clarity regarding which off-premises uses satisfy this requirement. Although the Commission has approved a variety of off-premises uses of supported services, uncertainty about the Commission's E-rate rules makes schools wary of deploying new technologies to extend the reach of supported services. Much of this uncertainty springs from the novelty of TVWS technology which, technically, extends an on-premises internet connection through wireless connectivity rather than requiring a student to obtain such a

³ See *infra* note 33.

connection via a cellular network. The Eligible Services List simply does not contemplate this scenario. Clarifying that such an extension of service is permissible will facilitate the project and enhance the ability of similarly-situated schools to adopt these new technological capabilities with the confidence that they will not raise questions or threaten funding under the E-rate rules.

If the Commission declines to issue the requested clarification, both the unique circumstances of this project and the public interest warrant granting a waiver of the potential inference in the presumption contained in the definition of "educational purpose," to the extent applicable, that E-rate-supported "educational purposes" exclude off campus connectivity. The pilot project offers the Commission a unique opportunity to test a novel and important technology for educational purposes. A successful pilot project of this technology will further the goals of the E-rate program and provide enormous public benefit: not only will the proposed project narrow the homework gap in these school districts, but it also will provide an opportunity for empirical analysis of the effects on students' educational performance and experience derived from improvements in home broadband availability. More broadly, the project will provide an ecosphere that will allow the Commission to examine whether such a program could and should be expanded beyond the limited geography described herein. Accordingly, Petitioners urge the Commission to issue the requested

clarification, or in the alternative, to grant a waiver of the E-rate rules cited in this Joint Petition so as to facilitate the proposed project.

I. Embracing Changes in Technology Enables the E-rate Program to Better Achieve Its Objectives

Congress designed the E-rate program to enhance educational opportunities for students. Of course, a student's education extends beyond the geographic boundaries of a school and beyond the hours of a school day. Just as learning inside the classroom during school hours has evolved since the inception of the E-rate program, so too has learning beyond the classroom outside of school hours. Seventy percent of teachers assign homework that requires a broadband connection,⁴ textbooks and school resources increasingly are shifting from print to digital and online formats,⁵ and much of the education necessary for today's digital economy — for example, learning to code or researching a paper online — requires internet connectivity.⁶

Indeed, the Commission has "recognize[d] the benefits of enabling innovation in learning outside the boundaries of the school building and the traditional school day,"⁷ and has "committed to keeping the E-rate program in sync with modern needs and

⁴ Jessica Rosenworcel, *How to Close the Homework Gap*, MIAMI HERALD, Dec. 5, 2014, available at <http://www.miamiherald.com/opinion/op-ed/article4300806.html> [hereinafter *How to Close the Homework Gap*].

⁵ See, e.g., *With No Internet Access at Home, Kids Crowd Libraries for Online Homework*, MIAMI HERALD, Oct. 12, 2014, available at <http://www.miamiherald.com/news/local/community/miami-dade/article2679035.html> (noting that printed-material budgets have caused Miami-Dade to shift to digital textbooks for high school freshmen).

⁶ See also *Herndon Decl.*, *supra* note 2, ¶ 2 (noting that "Internet connectivity at home is critical for students at every grade in our district [Halifax County]"); *Leonard Decl.*, *supra* note 2, ¶ 2 (noting that the same is true of Charlotte County).

⁷ *Schools and Libraries Universal Service Support Mechanism; A National Broadband Plan for Our Future*, CC Docket No. 02-6; GN Docket No. 09-51, Sixth Report and Order, 25 FCC Rcd 18762, ¶ 43 (2010).

technological capabilities.”⁸ The Commission has broken the temporal limitations by allowing use of E-rate supported services outside of school hours.⁹ Yet a bias toward geographic restrictions on the use of E-rate supported services persists, though such restrictions are not explicitly imposed by the statute.¹⁰

Over the past 20 years, the Commission has modified the E-rate program in measured ways so that it remains modern and effective for contemporary education practices.¹¹ It also has encouraged experimentation and authorized a Learning On-The-Go wireless pilot program (a/k/a “E-rate Deployed Ubiquitously 2011 Pilot Program”) designed to investigate and understand the benefits and challenges of supplying connectivity to mobile learning devices off of school premises.¹² Indeed, the rule change permitting community use of E-rate-supported services outside of school hours was precipitated by study and understanding made possible by a smaller pilot: a West Virginia school program authorized by a waiver of the Commission’s rules.¹³ The

⁸ *Id.* ¶ 3.

⁹ *Id.* ¶ 22.

¹⁰ The Commission’s E-rate rules presume that geographic proximity to a school satisfies the “for educational purposes” requirement of the Universal Service Fund’s Schools and Libraries program, 47 C.F.R. § 54.500.

¹¹ See, e.g., *Modernizing the E-rate Program for Schools and Libraries*, WC Docket No. 13-184, Report and Order and Further Notice of Proposed Rulemaking, 29 FCC Rcd 8870, ¶ 130 (2014) (recognizing that caching may be an affordable way to achieve bandwidth goals and including caching equipment as eligible for E-rate funding).

¹² *Schools and Libraries Universal Service Support Mechanism; A National Broadband Plan for Our Future*, CC Docket No. 02-6; GN Docket No. 09-51, Sixth Report and Order, 25 FCC Rcd 18762, ¶ 43 (2010).

¹³ See *id.* (“Our experience convinces us that our decision will expand the benefits of using E-rate funds. For example, after we waived the rule in February 2010, the State of West Virginia allowed community use of school Internet access and networks by offering evening community technology training lab classes and school technology nights. Most notably, during the April 2010 Upper Big Branch coal mining disaster, a school in West Virginia whose students were on spring break provided community access to its facilities

clarification sought by Petitioners builds upon the tradition of the Commission's measured and data-driven approach to investigating ways in which the E-rate program can better achieve its goals by accommodating new technologies.

II. Description of the Program

The TVWS project is expected to narrow the student connectivity gap using cutting-edge technology at no additional cost to schools, students, or the Universal Service Fund. Using the below-described TVWS technology developed by Microsoft and partners,¹⁴ the project could extend E-rate-funded school connectivity to the homes of approximately 3,500 students who currently lack broadband access. And while the project will serve only eligible students of the Participating Schools, a successful pilot case of this technology can be expected to serve as the blueprint for a solution to the student connectivity gap for students across the United States.

to be used as a government and media command center during the rescue and eventual search and recovery efforts. We thus find that permitting community use of E-rate services and equipment during times when classes are not in session (non-operating hours) will promote broadband access. Moreover, this decision is consistent with Congress's directive to consider how anchor institutions, such as schools, can ensure access to broadband service.”).

¹⁴ The initial capital budget for this proof of concept project is estimated to be \$1.1 to \$1.4 million, depending on final design and coverage areas. The project is funded through state grants and contributions from project partners. The Virginia Tobacco Commission is providing \$500K in funding. Microsoft and MBC are providing the remaining funding, as well as significant in-kind contributions to the project.

A. Participants

The Schools. The pilot project, the first steps of which commenced in April 2016,¹⁵ focuses on the Southern Virginia counties of Halifax and Charlotte, where 18 schools serve approximately 7,500 students.¹⁶ Each school receives E-rate funds. The Participating Schools were chosen for this project based on the availability of MBC fiber-optic connectivity to the schools, the presence of existing towers at many of the schools, and the surrounding communities' general lack of widespread affordable broadband options.

The area encompassing the Participating Schools is low-income, lacking in ubiquitous fixed broadband connectivity, and costly to serve. According to the Participating Schools' Superintendents, about half of the Participating Schools' students lack broadband internet access at home.¹⁷ The low population density in the two counties — among the lowest in Virginia — renders them costly to serve with new wireline broadband deployments.¹⁸ In recent years, shrinking populations in both

¹⁵ The project thus far does not use E-rate-subsidized services. MBC installed separate fiber-optic connections to the first schools participating in the project to be used for supporting the TVWS transmissions. These connections are not funded through the E-rate program. Although technologically inefficient, this approach was implemented to avoid any risk of violating E-rate rules.

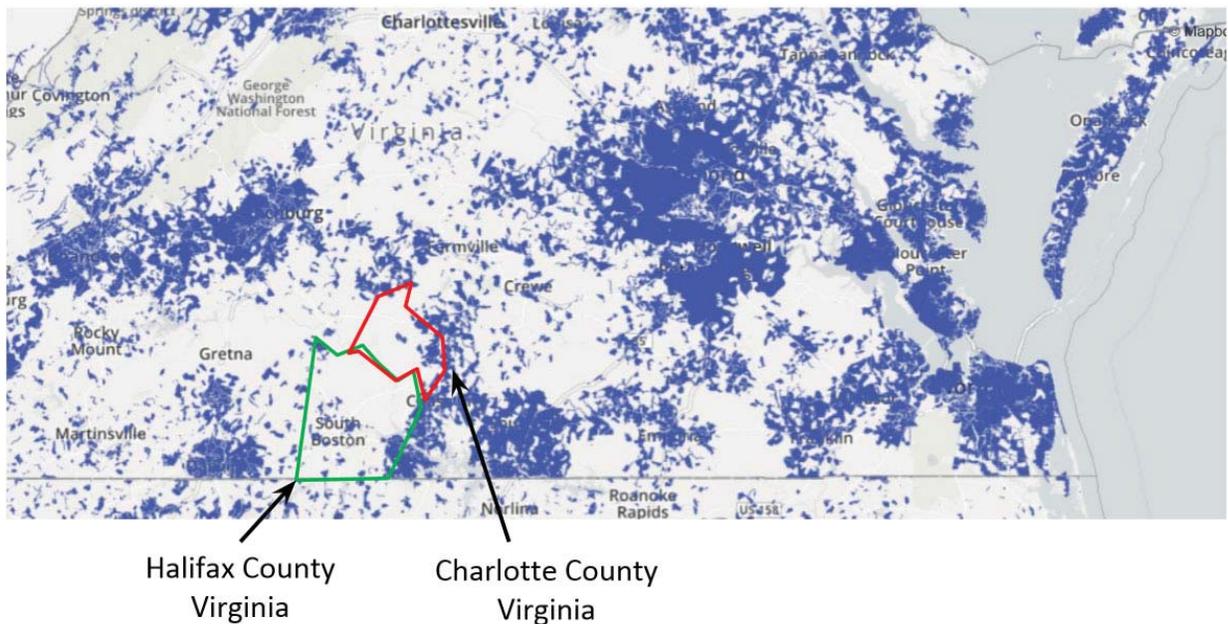
¹⁶ Depending on the success of Phase I and the result of this petition, Microsoft and others are planning a second phase of TVWS deployments that could provide access to 40,000 additional students at 183 K-12 schools across rural Southern Virginia.

¹⁷ See *Herndon Decl.*, *supra* note 2, ¶ 3; *Leonard Decl.*, *supra* note 2, ¶ 3.

¹⁸ See United States Census Bureau, *Charlotte County QuickFacts*, <http://www.census.gov/quickfacts/table/PST045215/51037,00,51> (last accessed Feb. 15, 2016) [hereinafter *Charlotte Census Data*] (noting a population density of 26.5 persons per square mile, compared to the 202.6 per square mile state average); United States Census Bureau, *Halifax County QuickFacts*, <http://www.census.gov/quickfacts/table/PST045215/51083,00,51> (last accessed Feb. 15, 2016) [hereinafter *Halifax Census Data*] (44.3 persons per square mile).

counties have further raised per-subscriber costs of deployment.¹⁹ The result, as the map below demonstrates, is an almost total absence of fixed broadband coverage outside of each county's largest town (Keysville and South Boston, respectively).

Figure 1: Charlotte County and Halifax County Broadband Availability, 1.5 Mbps to 10 Mbps²⁰



The Students. The pilot project will serve one of Virginia's neediest and most underserved student populations. Median incomes in Charlotte and Halifax counties are

¹⁹ See *Charlotte Census Data*, *supra* note 18 (noting that the population shrunk 2.8% between April 2010 and July 2014); see also *Halifax Census Data*, *supra* note 18 (noting that the population shrunk 2.9% between April 2010 and July 2014).

²⁰ National Broadband Map, available at www.broadbandmap.gov/speed (last accessed February 24, 2016).

roughly half the state average.²¹ The poverty rate in these counties is almost double the state average,²² while their college graduation rates are half the national average.²³

While home connectivity will lower educational barriers for these students, it of course raises the possibility of students using E-rate-funded internet for non-educational purposes. But the project's design minimizes the potential for such use. Internet access via TVWS will be technically possible only in households with a specialized TVWS access point. Even within those households, the signal can be accessed only via authentication with unique credentials issued to participating students. Further, the filtering and Internet Safety Policies (including CIPA-compliant policies)²⁴ that the Participating Schools apply to on-premises internet use likewise will govern at-home use.²⁵

²¹ See *Charlotte Census Data*, *supra* note 18 (recording a 2014 median income of \$34,820, compared to Virginia average of \$64,792); see also *Halifax Census Data*, *supra* note 18 (recording a median income of \$35,093).

²² 21.3% and 17.9% of Charlotte and Halifax residents' income is below the poverty level, respectively, compared to the state average of 11.3%. See *Charlotte Census Data*, *supra* note 18; *Halifax Census Data*, *supra* note 18.

²³ For example, only 15.4% of Charlotte County residents hold a bachelor's degree or higher, compared to the national average of 29.3%. See *Charlotte Census Data*, *supra* note 18; see also *Halifax Census Data*, *supra* note 18 (14.6%).

²⁴ 47 U.S.C. §§ 254(h), (l).

²⁵ See *Herndon Decl.*, *supra* note 2, ¶ 5 ("Just as they would with internet access at school, students accessing school internet at home would be required to log in with a username and password, and their use would be subject to the same filtering and compliance policies as it would be on school grounds."); *Leonard Decl.*, *supra* note 2, ¶ 5 (same). In addition, transmissions between the school and students' homes will be encrypted.

B. Technology

This project will employ Dynamic Spectrum Access (“DSA”) technology developed by Adaptrum, Inc., a leading provider of TVWS technology, and Microsoft. The technology uses location-aware devices and online databases to deliver low-cost broadband internet access and other forms of connectivity to consumers. DSA allows devices to opportunistically use available radio spectrum, including unused or unassigned TV broadcast channels in the VHF and UHF television bands (known as “TV White Spaces”). Signals broadcast over TVWS can travel long distances to deliver high-bandwidth internet service at low network costs.²⁶

The areas surrounding the Participating Schools are well-suited for TVWS deployment because they contain a large number of vacant UHF channels eligible for TVWS transmission.²⁷ MBC will install TVWS base stations at select schools to extend the reach of broadband access into the surrounding communities.²⁸ These TVWS base stations will enable students to connect from home to safe school district networks and

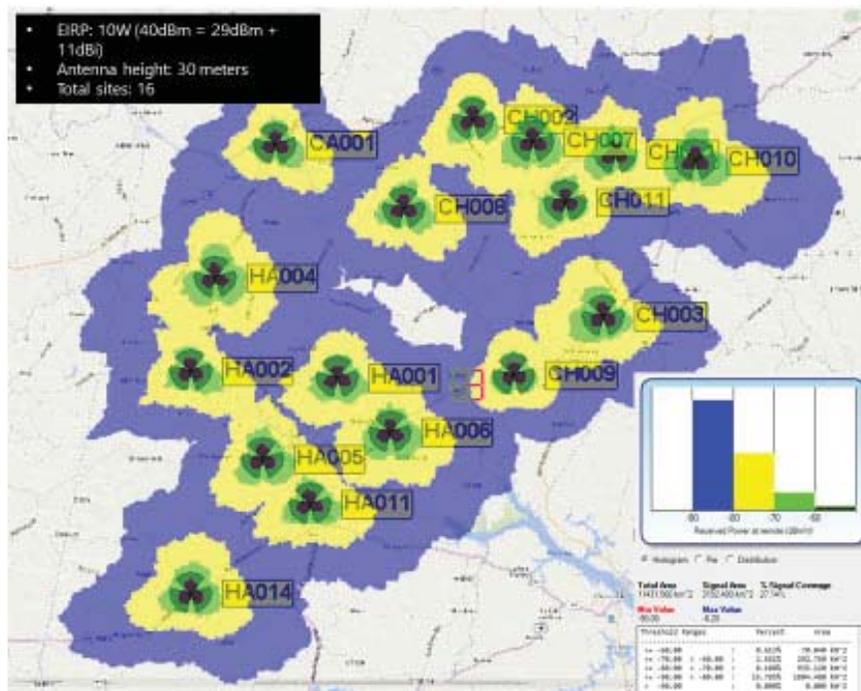
²⁶ For an in-depth description of TVWS and its benefits, see Microsoft, *Super Wi-Fi Technologies*, <http://research.microsoft.com/en-us/projects/spectrum/microsoft-super-wifi-overview.pdf> (last accessed June 2, 2016). Petitioners anticipate that the pilot project will provide eligible students with access to broadband at speeds ranging from 3 to 10 Mbps (depending on network utilization and other factors), though one component of the pilot program will be to evaluate the speeds delivered and assess whether and how they can be increased.

²⁷ Because so many channels are unused, this qualifies as rural under the FCC’s TV White Spaces rules and therefore higher power transmissions would be permitted.

²⁸ To enable the project to commence without risking E-rate rule violations, MBC has not leveraged the fiber optic connectivity already provided to the Participating Schools, which currently receive E-rate supported broadband wireline internet access service. Though inefficient, during the pendency of this petition, MBC has installed and will utilize separate fiber-optic connections to the first schools participating in this project.

access content and applications needed to complete their homework assignments and engage in other school-sanctioned educational activities. Students will connect via a specialized, in-home, TVWS access point, which Microsoft is developing with Adaptrum, based in San Jose, California, and MediaTek, based in Taipei, Taiwan. This access point will use TVWS for last-mile access, allowing it to receive and transmit signals from the school to the home, converting the TVWS signal to Wi-Fi, allowing Wi-Fi-enabled devices within the home to connect to the network.²⁹ The figure below shows the coverage that the project could achieve by installing TVWS base stations in 16 out of 18 schools — an estimated 11,400 km² of coverage.

Figure 2: Coverage Area with 16 EIRP Base Stations



²⁹ The device also will implement a new Wi-Fi standard for TV White Spaces — 802.11af — for better local area coverage.

C. No Additional Costs Imposed on the Fund

The pilot program will not impose additional cost on the E-rate program. The Participating Schools' E-rate-supported internet access services are not usage-metered. MBC therefore will not charge or increase the price of internet access to the Participating Schools to account for the extra usage. The project also will be undertaken with MBC's cooperation and awareness. And Microsoft will provide the financial support for the specialized equipment necessary to convert, encrypt, transmit, and receive the signals using the specified unlicensed TVWS. Together, Microsoft and the Participating Schools will gather empirical and qualitative data about the program that will facilitate meaningful evaluation of the program and identify opportunities for improvement.³⁰

III. The Commission's Clarification Is Warranted and Will Allow Significant Improvements in Achieving Important E-rate Program Goals in Light of Technological Advancements.

It is unclear whether the Commission's rules forbid the use of E-rate funds for the above-described TVWS project. The TVWS project presents a scenario that neither the rules nor the Eligible Services List contemplates, though neither seems to expressly forbid the use of funds for the proposed TVWS project. That said, because both do not unequivocally permit the use of E-rate funds for off-premises services, the Participating

³⁰ The total cost of the pilot project is expected to be \$1.1 to 1.4 million, a modest sum at the proof-of-concept stage, particularly when compared with the potential benefits that can be expected to result if the project can be successfully scaled. Because the pilot project is being developed jointly by well-financed entities, resources will exist for any unanticipated additional funding needs. The pilot project will help determine more precisely what the total deployment and maintenance costs for this particular use of TVWS technology will be, so a more precise estimate can be made as to the cost of scaling it.

Schools are wary of commencing the project under the E-rate program without further clarity that the program will not run afoul of applicable rules.

The Commission is authorized to issue a declaratory ruling to remove this uncertainty.³¹ Petitioners respectfully request that the Commission exercise this authority and issue a declaratory ruling clarifying that the Participating Schools' E-rate-funded internet access service may be used in conjunction with their project. Such a ruling would enable the Participating Schools, and those similarly-situated, to avail themselves of technological advancements that permit schools to close the homework gap for their students, extending the reach and power of E-rate funds at no additional cost to the E-rate program.

On one hand, the rules could be interpreted to disfavor E-rate funding of off-premise services. Schools seeking E-rate funds, like the Participating Schools, must certify that supported services are being used for educational purposes.³² Activities taking place on school grounds qualify for a presumption that they serve an educational purpose.³³ But off-campus use does not qualify for this presumption,³⁴ and the Eligible

³¹ 47 C.F.R. § 1.2; *see also* 5 U.S.C. § 554(e).

³² 47 C.F.R. § 54.503(c)(2)(ii)(A); *id.* § 54.504(a)(1)(v).

³³ *Id.* § 54.500 ("For purposes of this subpart, activities that are integral, immediate, and proximate to the education of students, or in the case of libraries, integral, immediate and proximate to the provision of library services to library patrons, qualify as 'educational purposes.' Activities that occur on library or school property are presumed to be integral, immediate, and proximate to the education of students or the provision of library services to library patrons.").

³⁴ *See, e.g., Lifeline and Link Up Reform and Modernization; Telecommunications Carriers Eligible for Universal Service Support; Connect America Fund*, WC Docket Nos. 11-42, 09-297, and 10-90, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, Second Report and Order, and Memorandum Opinion and Order, 30 FCC Rcd 7818, 7828 n.50 (2015) ("[S]ervices used off school . . .

Services List denies E-rate support for off-campus wireless services (although the reference to wireless seems to presume traditional mobile wireless rather than TVWS extensions of a school's wired internet connection).³⁵

On the other hand, the rules do not expressly forbid funding of off-premises services. The Commission's rules state an affirmative presumption rather than a negative restriction — retaining the possibility of supporting services that satisfy the E-rate program's educational purpose beyond school grounds. In fact, the Commission has acknowledged that the on-school-premises presumption is not absolute and has described certain off-premises uses of supported services as permissible.³⁶

The Eligible Services List does not resolve this ambiguity. While the Eligible Services List denies E-rate funding for off-campus *wireless* services,³⁷ the above-described TVWS project relies entirely on Category One internet access, which is not

property are generally ineligible for E-rate support . . . [thus] the current E-rate rules prevent full utilization of the learning opportunities that wireless broadband can provide beyond the boundaries of the school day.”).

³⁵ Schools and Libraries Support Mechanism Eligible Services List for Funding Year 2016, *available at* http://www.usac.org/_res/documents/sl/pdf/ESL_archive/EligibleServicesList-2016.pdf, at 4 (“Off-campus use [of wireless services and wireless internet access], even if used for an educational purpose, is ineligible for support and must be cost allocated out of any funding request.”).

³⁶ *See, e.g., Schools and Libraries Universal Service Support Mechanism*, CC Docket No. 02-6, Second Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 9202, 9209 n.28 (2003) (“The following are examples off-site activities that would be integral, immediate, and proximate to the education of students or the provision of library services to library patrons, and thus, would be considered to be an educational purpose: a school bus driver’s use of wireless telecommunications services while delivering children to and from school, a library staff person’s use of wireless telecommunications service on a library’s mobile library unit van, and the use by teachers or other school staff of wireless telecommunications service while accompanying students on a field trip or sporting event.”).

³⁷ Schools and Libraries Support Mechanism Eligible Services List for Funding Year 2016, *available at* http://www.usac.org/_res/documents/sl/pdf/ESL_archive/EligibleServicesList-2016.pdf, at 4 (“Off-campus use [of wireless services and wireless internet access], even if used for an educational purpose, is ineligible for support and must be cost allocated out of any funding request.”).

subject to this prohibition.³⁸ The confusion appears to spring from the novelty of TVWS technology, which resembles wireless access but utilizes an on-premises internet connection rather than a cellular network — a scenario that the Eligible Services List simply does not contemplate. Indeed, even if the Eligible Services List’s restriction applied and, therefore, required that the off-premise TVWS access be cost-allocated out of a funding request — which it does not — there would be no costs to allocate: the above-described TVWS project imposes no additional costs on the Participating Schools, and MBC, the ISP, will not impose additional charges for students’ at-home usage.

In sum, the requested clarification would be consistent with the Commission’s rules and the Eligible Services List, advance the goals of the E-rate program, narrow the homework gap for thousands of students in the Participating Schools, and may well provide a solution for millions of other students across the country in time — all without imposing additional costs on the E-rate fund. For these reasons, Petitioners respectfully request a declaratory ruling that would make clear that the proposed TVWS project does not violate the Commission’s E-rate rules.

³⁸ See *id.* at 1. The Eligible Services List does, however, define “Eligible Category One” services as “services that provide broadband to *eligible locations*.” *Id.* (emphasis added). E-rate-funded internet access to the Participating Schools would meet this definition even if the internet access to the schools were transmitted via TVWS from the school buildings to the homes of eligible students.

IV. The Petition Satisfies the Standard for Waiver of the Commission's Rules.

In the alternative, if the Commission does not provide the clarification requested, then good cause exists to waive the Commission's restrictions and guidance³⁹ regarding off-premises use for the limited purpose of this project. Section 1.3 of the Commission's rules provides that the Commission may waive its rules "for good cause shown."⁴⁰ In the *Rural Broadband Experiments Order*, the Commission explained that "[w]aiver of the Commission's rules is appropriate if both (i) special circumstances warrant a deviation from the general rule, and (ii) such deviation will serve the public interest."⁴¹ Here, the facts satisfy both elements: Petitioners' initiative presents unique circumstances for a small population in Southern Virginia, and a waiver would further the public interest and goals of the E-rate program by extending broadband to thousands of needy students for educational purposes.

First, the unique circumstances presented by Petitioners' project justify a limited waiver. The project involves application of a new technology which will be offered for educational purposes to eligible students at a small number of schools in communities underserved by broadband. If successful, however, the program could serve as a pilot case that could be replicated in underserved communities across the United States (and

³⁹ 47 C.F.R. § 54.500 (definition of "educational purposes").

⁴⁰ *Id.* § 1.3.

⁴¹ See *Connect America Fund; ETC Annual Reports and Certifications*, WC Docket Nos. 10-90 and 14-58, Report and Order and Further Notice of Proposed Rulemaking, 29 FCC Rcd 8769, 8800 n.162 (2014) (citing *Ne. Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990)).

actually around the world, demonstrating the FCC's continued leadership in this policy area).

Second, a waiver would amplify the capabilities of the E-rate program. The Commission has recognized that limiting E-rate support to services used on school property "prevent[s] full utilization of the learning opportunities that wireless broadband can provide beyond the boundaries of the school day."⁴² Without spending a single E-rate dollar, Microsoft's project could extend those learning opportunities to an estimated 3,500 students who currently lack broadband internet access at home in Halifax and Charlotte counties. The project will improve educational opportunities at home for eligible students — reflecting modern educational practices of online learning outside the classroom — without reducing or limiting the amount of services available on the premises of the Participating Schools.⁴³

In the longer run, the project could provide access for many of the five million American households with school-age children that lack broadband service.⁴⁴ The program would provide empirical data and real-world experience to study the

⁴² *Lifeline and Link Up Reform and Modernization; Telecommunications Carriers Eligible for Universal Service Support; Connect America Fund*, WC Docket Nos. 11-42, 09-297, and 10-90, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, Second Report and Order, and Memorandum Opinion and Order, 30 FCC Rcd 7818, 7828 n.50 (2015).

⁴³ The Commission has concluded that section 254 does not prohibit grant of a waiver to expand the use of E-rate supported services so long as they are used for educational purposes in the first instance. See *Federal-State Joint Board on Universal Service; Petition of the State of Alaska for Waiver for the Utilization of Schools and Libraries Internet Point-of-Presence in Rural Remote Alaska Villages Where No Local Access Exists and Request for Declaratory Ruling*, CC Docket No. 96-45, Order, 16 FCC Rcd 21511, ¶ 8 (2001). In this case, both the primary (on-premises) and secondary (home) use of the service would have an educational purpose.

⁴⁴ See *Homework Gap*, *supra* note 1.

effectiveness of this technological approach to expanding the E-rate program's capabilities and identify opportunities for improvement.

The benefit to the broader public interest is clear and compelling. Digital access brings students learning opportunities that speed school readiness, reduce holiday learning slides, and close achievement gaps. Access to digital tools and content affords expanded learning time beyond the school day, which increases school engagement and completion, reducing the social burdens of unengaged youth. Students who have been digitally-enabled will be better prepared for further education and the work of today and tomorrow, better able to support their families, and less dependent on social support throughout life. By contrast, students from households lacking broadband at home face a stark disadvantage relative to their connected peers.⁴⁵

⁴⁵ Libraries constitute important broadband resources for many students, but they are a supplement, not a substitute, for in-home broadband due to a variety of factors.

V. Conclusion

For the reasons stated herein, Petitioners seek clarification or, in the alternative, a waiver that will enable the Participating Schools to proceed with the project described herein using, in part, E-rate supported services.

Respectfully submitted,

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Dated: 7 June 2016

ATTACHMENTS

DECLARATION OF SUPERINTENDENT DR. MERLE P. HERNDON

I, Dr. Merle Herndon, do hereby state under penalty of perjury as follows:

1. My name is Dr. Merle Herndon. I have served as the Superintendent of Halifax County Public Schools since 2012. I have over 30 years' experience as an educator. Over the course of my career, I have earned three graduate degrees – a Master's degree in reading and an education specialist degree from Lynchburg College, and a Doctorate in Educational Leadership and Policy Studies from the University of Virginia. I also have been a lifelong resident of the area surrounding Halifax County.
2. Internet connectivity is critical for students at every grade—in our district and in every other district. In Halifax County Public Schools, even our elementary students need Internet access to research assignments. Older students require Internet access to collaborate with classmates and teachers online, as well as to submit assignments and take-home exams. At our highest grade levels, high school students require Internet access to research schools and apply to colleges. At every level, home broadband access enables collaboration, fosters digital literacy, and improves educational outcomes.
3. I estimate that approximately half of the students in my district lack broadband Internet access at home. Based on information and belief, I estimate that home broadband subscription rates are similar for the households of students in the neighboring Charlotte County Public Schools. Both Halifax and Charlotte counties are low income and rural; consequently, many students live in areas that lack fixed broadband access entirely, and those that live in areas with access often live in households that cannot afford it.
4. Halifax County Public Schools currently receive discounted Internet access through the E-rate program. As a condition of receiving these discounts, our schools must filter our Internet services and implement formal Internet Safety Policies in compliance with the Children's Internet Protection Act ("CIPA").
5. Just as they would with Internet access at school, students accessing the Internet at home would be required to log in with a username and password, and their use would be subject to the same filtering and compliance policies as it would be on school grounds.
6. The TV White Spaces connectivity initiative proposed by Microsoft and Mid-Atlantic Broadband Communities would allow the students in my district to access an Internet connection from home. The educational benefits of this connectivity would be enormous, closing the homework gap for our most disadvantaged students.
7. This concludes my declaration.

Executed on March 22, 2016

Merle P. Herndon

DECLARATION OF SUPERINTENDENT DR. MERLE P. HERNDON

I, Nancy Leonard, do hereby state under penalty of perjury as follows:

1. My name is Nancy Leonard. I have served as the Superintendent of Charlotte County Public Schools since 2013. I have been a lifelong resident of the area surrounding Charlotte County.
2. Internet connectivity is critical for students at every grade—in our district and in every other district. In Charlotte County Public Schools, even our elementary students need Internet access to research assignments. Older students require Internet access to collaborate with classmates and teachers online, as well as to submit assignments and take-home exams. At our highest grade levels, high school students require Internet access to research schools and apply to colleges. At every level, home broadband access enables collaboration, fosters digital literacy, and improves educational outcomes.
3. I estimate that approximately half of the students in my district lack broadband Internet access at home. Based on information and belief, I estimate that home broadband subscription rates are similar for the households of students in the neighboring Halifax County Public Schools. Both Halifax and Charlotte counties are low income and rural; consequently, many students live in areas that lack fixed broadband access entirely, and those that live in areas with access often live in households that cannot afford it.
4. Charlotte County Public Schools currently receive discounted Internet access through the E-rate program. As a condition of receiving these discounts, our schools must filter our Internet services and implement formal Internet Safety Policies in compliance with the Children's Internet Protection Act ("CIPA").
5. Just as they would with Internet access at school, students accessing an Internet service at home would be required to log in with a username and password, and their use would be subject to the same filtering and compliance policies as it would be on school grounds.
6. The TV White Spaces connectivity initiative proposed by Microsoft and Mid-Atlantic Broadband Communities would allow the students in my district to access an internet connection from home. The educational benefits of this connectivity would be enormous, closing the homework gap for our most disadvantaged students.
7. This concludes my declaration.

Executed on March 22, 2016



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