

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Connect America Fund)	WC Docket No. 10-90
)	
Universal Service Reform – Mobility Fund)	WT Docket No. 10-208
)	
ETC Annual Reports and Certifications)	WC Docket No. 14-58
)	
Establishing Just and Reasonable Rates for Local Exchange Carriers)	WC Docket No. 07-135
)	
Developing an Unified Intercarrier Compensation Regime)	CC Docket No. 01-92
)	
Modernizing the E-rate Program for Schools and Libraries)	WC Docket No. 13-184

**Reply Comments of EducationSuperHighway on the Connect America Fund A National
Broadband Plan for Our Future High-Cost Universal Service Support**

EducationSuperHighway respectfully submits these comments in the above referenced proceeding.

INTRODUCTION AND SUMMARY

In the Further Notice of Proposed Rulemaking in this proceeding, the Federal Communications Commission (FCC) requested comments, *inter alia*, on the specific broadband speeds required to meet the evolving needs of community anchor institutions.¹ It also asked for comment on how best to ensure that ETCs fulfill this obligation and the charges, terms and conditions of service provided to those institutions.

The Commission is right to focus on this question. As seen in EducationSuperHighway’s recently released report, *Connecting America’s Students: Opportunities for Action*,² the United States faces an urgent challenge to upgrade the broadband infrastructure in our K-12 schools. Today, 63% of America’s schools, representing nearly 40 million students, do not have the broadband they need to take advantage of the promise of digital learning. Moreover, our rural schools, those most likely to be served by CAF recipients, are more than twice as likely to be without access to high speed fiber networks.

In its recent E-rate modernization order,³ the Commission recognized the importance of connecting America’s schools and libraries to high-speed broadband and established specific goals for the broadband speeds required to meet the evolving needs of these community anchor institutions.

¹ Connect America Fund, et al, Report and Order, Declaratory Ruling, Order, Memorandum Opinion and Order, Seventh Order on Reconsideration, and Further Notice of Proposed Rulemaking, FCC 14-54, Order released June 10, 2014 at ¶ 159. This Order is hereinafter referred to as “FNPRM.”

² See EducationSuperHighway, *Connecting America’s Students: Opportunities for Action* (April 2014), available at http://www.educationsuperhighway.org/uploads/1/0/9/4/10946543/esh_k12_erate_spending_report_april_2014.pdf (“*Connecting America’s Students*”).

³ Modernizing the E-rate Program for Schools and Libraries, FCC 14-99, WC Docket No. 13-184, Report and Order and Further Notice of Proposed Rulemaking, Order Released July 23, 2014. This Order is hereinafter referred to as “E-rate 2.0 Order.”

We believe that the Commission has a unique opportunity to accelerate the achievement of these goals for America's rural schools and libraries by having the rules and benchmarks for the Connect America Fund (CAF) work in tandem with the rules and benchmarks for the E-rate program. To that end, EducationSuperHighway recommends that the Commission adopt the following measures as part of its FNPRM:

1. Mandate that community anchor institutions are included in the service obligations of CAF recipients.
2. Require that CAF recipients meet the connectivity targets for Internet access and Wide Area Network connections set out in its E-rate 2.0 Order.⁴
3. Consistent with this requirement, require all CAF recipients to provide all schools with greater than 50 students and all libraries with fiber optic broadband connections unless it can be demonstrated that an alternative technology can more cost effectively meet the connectivity targets set out in the Commission's E-Rate 2.0 Order.
4. Require CAF recipients to provide the required connectivity at prices that reflect those available to schools and libraries in urban areas and reflecting the fact that the capital costs of these connections are being subsidized by the CAF.⁵

BACKGROUND ON EDUCATIONSUPERHIGHWAY

EducationSuperHighway is the leading non-profit focused on upgrading the broadband infrastructure in America's K-12 schools. We agree with the Commission that digital learning represents an unprecedented opportunity to provide every student with a world-class education and that every school requires high-speed broadband to make that opportunity a reality. During the Commission's E-rate modernization proceeding EducationSuperHighway conducted three landmark studies on the state of broadband in America's K-12 schools, the cost of connectivity and the resources required to meet the connectivity targets ultimately adopted by the Commission in its E-rate 2.0 Order.

THE COMMISSION'S SPEED TARGETS FOR SCHOOLS AND LIBRARIES

In the E-rate 2.0 Order, the Commission adopted the following targets for broadband connectivity to schools and libraries:⁶

- Internet access connectivity of 1 Mbps per student and staff in schools;
- WAN connectivity capable of scaling to 10 Gbps per school;
- Internet access connectivity of at least 100 Mbps for all libraries that serve fewer than 50,000 people; and
- Internet access connectivity of at least 1 Gbps for all libraries that serve greater than 50,000 people.

⁴ See Modernizing the E-rate Program for Schools and Libraries, FCC 14-99, WC Docket No. 13-184, Report and Order and Further Notice of Proposed Rulemaking, Order Released July 23, 2014 at ¶¶ 26-44

⁵ Based on EducationSuperHighway's analysis in *Connecting America's Students: Opportunities for Action*, these prices are approximately \$775/month for a 100 Mbps WAN connection, \$1,000/month for a 1 Gbps WAN connection and \$3.34/Mbps/Month for commercial Internet access.

⁶ Here we reference the "longer term" Internet access targets established by the Commission. These correspond to the 2018 targets established by the State Education Technology Directors Association.

Support for these targets in the E-rate modernization proceeding was overwhelming and thus there is no reason for the Commission to vary from these targets in determining the specific broadband speeds required to meet the evolving needs of schools and libraries in areas where ETCs have received CAF support. Importantly, these targets take into account the size of a school or library and thus can be readily applied to the requirements for CAF recipients as it relates to providing broadband to schools and libraries.

UNDERSTANDING THE CONNECTIVITY REQUIREMENTS OF RURAL SCHOOLS AND LIBRARIES

When applied to the actual student populations of America’s rural K-12 schools,⁷ the Commission’s connectivity targets reveal that 83% of rural schools, representing 99% of rural students will require at least 100 Mbps of Internet connectivity, with two thirds requiring at least 200 Mbps of Internet access and 28% requiring at least 500 Mbps.⁸ The following table shows the breakdown of rural schools and students by school size:

# of Students	# of Rural Schools	% of Total	# of Students	% of Total
0 – 50	2,759	9%	64,576	1%
51 – 100	2,502	8%	189,858	2%
101 – 200	5,142	16%	769,314	6%
201 – 500	12,106	39%	4,103,400	33%
>500	8,813	28%	7,341,522	59%

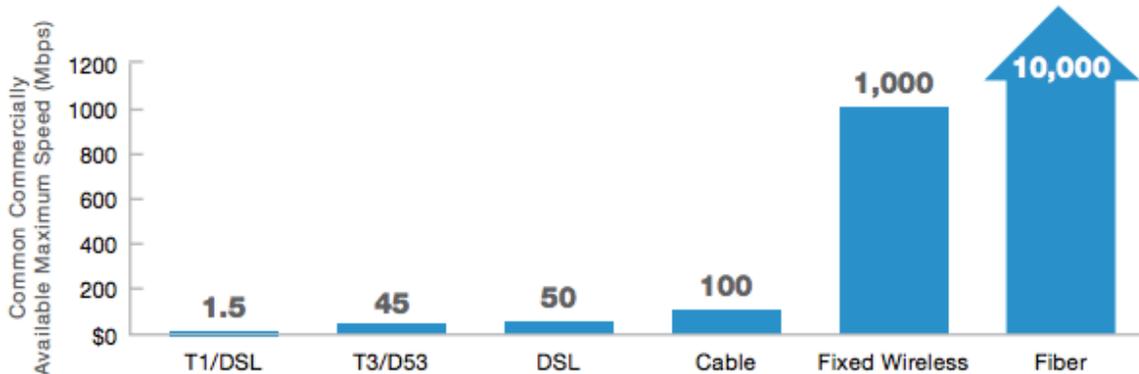
This has significant implications for how CAF recipients meet their obligations. As seen in Chart 1 below, traditional copper-based broadband services provided by ETCs are unable to provide connectivity in excess of 50 Mbps. As a result, in order to meet the Commission’s Internet access connectivity targets for 83% of schools and ALL libraries, CAF recipients must be required to install fiber optic connections to these schools and libraries.⁹

⁷ Source: National Center For Education Statistics, 2011 schools database. For the purpose of this discussion rural schools are identified as those with Census Bureau ULOC codes of 41, 42, or 43.

⁸ The numbers are even more compelling when evaluated at the district level, which is the typical place that schools purchase Internet access. In this case, over half of districts require at least 500 Mbps of Internet access and 30% require a minimum of 1 Gbps of Internet access.

⁹ In some cases, fixed wireless connections will be able to meet the needs of schools and libraries and will be more cost effective than installing fiber. In the event that an ETC can demonstrate that this is the case when amortizing the cost of a fiber optic installation over 20 years, the ETC should be allowed to apply for a waiver to use a fixed wireless connection. However, the ETC should also be required to demonstrate that the fixed wireless connection will be able to support the 50% per annum compound growth rate in the demand for Internet access that is common in schools utilizing digital learning.

Chart 1: Significantly higher speeds are available over fiber connections compared to other service types

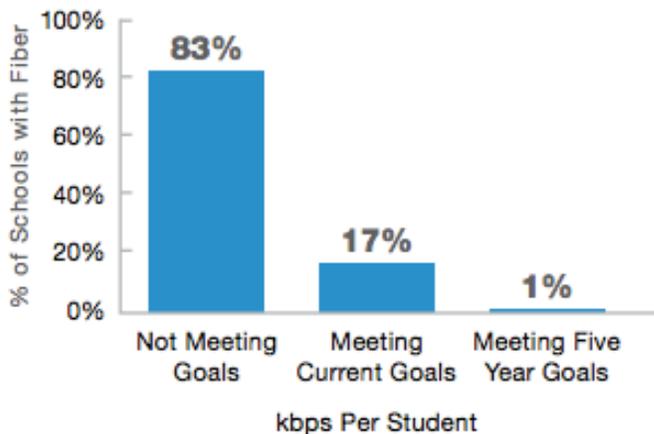


ENSURING THAT BROADBAND IS AFFORDABLE FOR RURAL SCHOOLS AND LIBRARIES

Unfortunately, connecting rural schools and libraries to fiber is necessary, but not sufficient to ensuring that students, teachers and library patrons will have access to the connectivity they need for the 21st century. As seen in EducationSuperHighway’s report, *Connecting America’s Students: Opportunities for Action*, the **affordability** of broadband is an equally significant roadblock to meeting the Commission’s connectivity targets.

As seen in Chart 2 below, even among schools with fiber connections, only 17% meet the Commission’s short term goal of 100 Kbps / student of Internet access and only 1% meet the longer term goal of 1 Mbps per student.

Chart 2: 83% of schools with Internet access over fiber still are not meeting Current Goals



Consequently, it is critical that the Commission take steps to ensure that rural schools and libraries are able to purchase Internet access and WAN connections at prices that reflect those available to schools and libraries in urban areas.

In *Connecting America's Students: Opportunities for Action*, EducationSuperHighway analyzed over \$350 million of 2013 E-rate spending from 1,044 schools districts in 45 states representing over 11,000 schools and 6 million students. Our findings show that the average price for Internet access for those with fiber connections is \$9.16/Mbps per month while the top quartile, which is arguably more reflective of urban schools, pay \$3.34/Mbps per month. Similarly, the average price for a 1 Gbps WAN connection in urban areas was \$1,072 per month and the average price for a 100 Mbps WAN connection was approximately \$775 per month.¹⁰ Given that the vast majority of the costs of building these fiber connections will be covered by the CAF, we see little reason that these prices should not serve as a cap on the amount that ETCs are permitted to charge schools and libraries covered by the CAF requirements.

CONCLUSIONS AND RECOMMENDATIONS

The evidence in these comments makes a compelling case that the Commission should adopt the following recommendations in conjunction with its FNPRM:

1. Mandate that community anchor institutions are included in the service obligations of CAF recipients.
2. Require that CAF recipients meet the connectivity targets for Internet access and Wide Area Network connections set out in its E-rate 2.0 Order.
3. Consistent with this requirement, require all CAF recipients to provide all schools with greater than 50 students and all libraries with fiber optic broadband connections unless it can be demonstrated that an alternative technology can more cost effectively meet the connectivity targets set out in the Commission's E-Rate 2.0 Order.
4. Require CAF recipients to provide the required connectivity at prices that reflect those available to schools and libraries in urban areas and reflect the fact that the capital costs of these connections are being subsidized by the CAF.

The FNPRM represents a unique opportunity to close the digital divide for America's rural K-12 schools and libraries consistent with the targets that the Commission has previously established in its E-rate 2.0 Order.

Respectfully submitted,

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¹⁰ Note that these prices will be a minimum of two years old by the time that the Commission's ruling in this proceeding take effect and that Internet access prices are generally declining by a minimum of 10% per annum.