

The E-rate Opportunity: E-rate Modernization Resources for Policymakers & Digital Leaders

Wi-Fi Implementation Guidance

OVERVIEW

Billions of dollars are available through the E-rate program to help state and local jurisdictions expand broadband and Wi-Fi connectivity in schools and libraries based on recent changes in the federal E-rate program. SETDA and Common Sense Kids Action, the advocacy arm of Common Sense Media, are working together to help state and local policymakers and digital leaders successfully apply for these new funds. The goal of the three documents in this resource is to help state and local leaders achieve high-speed connectivity in their jurisdictions' and support the national goal of connecting every classroom and library in America to high-speed Internet by 2018.



New Funding Options for Internal Connections (Wi-Fi)

The FCC's effort to connect all schools and libraries to high-speed broadband would be ineffective without addressing needed Internet improvements inside the schools and libraries themselves. Schools and libraries without local area networks capable of distributing the bandwidth being delivered to them are inefficient in both use of services and E-rate funds. In an effort to ensure effective and efficient use of bandwidth delivery down to the classroom and student level, the FCC made additional funds available to provide discounts on local area network infrastructure and related services.

The Orders set aside \$1 billion per year to assist in funding Category Two funding requests including, but not limited to, Wi-Fi equipment and/or services during FY2015 and FY2016. Additionally, the FCC expects the availability of \$1 billion per year during FY2017, FY2018 and FY2019 in Category Two funds to cover the services necessary to create and maintain "internal connections," or Wi-Fi networks, within schools and libraries. Using these funds, schools and libraries can purchase Wi-Fi access points, Wi-Fi services (such as management or managed services), and new technologies like caching servers. The Orders also included a minimum funding floor so that all eligible schools regardless of size could receive minimum funding.

Under the Orders, Category Two services are funded at a maximum discount of 85%, with a pre-discount budget of \$150 per student for schools and \$2.30 per square foot in libraries over a five-

year period. The FCC language includes a \$5.00 per square foot budget for libraries in highly populated cities and urbanized areas.

Competitive Bidding Requirements: A Reminder

As with all aspects of the E-rate program, the new E-rate options are subject to strict competitive bidding requirements. Applicants must conduct fair, open, and competitive bidding processes and must select the most cost-effective option in order to receive E-rate funds. The price of eligible products and services must be the most heavily-weighted factor, but not necessarily the majority factor, considered in choosing equipment and services to bring broadband to and establish internal connections in schools and libraries. In addition, many states have State Master contracts related to equipment purchases and strict procurement processes that must be met.

WHAT ARE CATEGORY TWO SERVICES?

Category Two services include internal connections and services (including managed services and maintenance) needed to provide broadband connectivity throughout a school or library building to get connectivity to the student in the classroom. For a full list of eligible services visit: https://apps.fcc.gov/edocs_public/attachmatch/DA-15-1012A1.pdf

Eligible Components Include:

- access points used in a LAN or WLAN environment
- antennas, cabling, connectors and related components for internal broadband connections
- firewall services and components
- switches routers racks
- UPS/battery backup
- wireless controller systems
- software supporting the components
- caching

What are Category Two managed services?

Managed service refers to the practice of outsourcing the maintenance and monitoring responsibilities of a network to a third-party provider. Managed services that qualify for Category Two funds can be put into three categories.

- **Option 1** School/library owns the equipment and manages the equipment
 - E-rate will reimburse for the equipment only and does not reimburse for schools/libraries to manage their own equipment.
- **Option 2** School/library owns the equipment and outsources the management for a fee
- **Option 3** A provider owns the equipment and manages the service

What is caching?

Caching is a service that “enables the local storage of information so that the information is accessible more quickly than if it is transmitted across a network from a distant server.” Because caching “enhances... access to advanced telecommunications,” the FCC has determined that any caching service or equipment that provides caching, including servers necessary for the provision of caching, is eligible for Category Two support. Caching can save schools and libraries money. Caching stores information locally, and reduces traffic across long-distance networks, thus improving network performance. The FCC cites the efficiency of caching services as a potential source of savings: because caching can “optimize network performance,” the FCC states, it will “potentially result in more efficient use of E-rate funding” and can “provide a more affordable way to achieve bandwidth goals,” saving schools money “over the long term” (*First Modernization Order*, pg. 51).

When are the additional funds for Wi-Fi available?

Funds became available in early 2015.

Schools seeking Category Two funding during funding years 2015 through 2019 will be eligible to request discounts, up to 85%, for up to \$150 (pre-discount) per student for Category Two services over a five-year period. *The five-year period begins when you initially receive the funding (between 2015-2019). (Second Modernization Order, pg. 34)*

Libraries that seek Category Two funding in funding years 2015 through 2019 are limited to E-rate discounts on pre-discount purchases over a five-year period based on the square footage of the library. Pursuant to the July 2014 Order, libraries are eligible for up to \$2.30 (pre-discount) per square foot over a five-year period. Some libraries are funded at a higher amount based on the December 2014 Order.

To ensure the Category Two budgets are sufficient to meet the demands of schools with a small number of students and libraries in small buildings, the Order establishes a pre-discount funding floor of \$9,200 in Category Two support available for each school or library over a five-year period.

How long will funds be available?

Initiated in 2015, funding is dependent upon demand and funding availability. Funds will be allocated to the highest discounted applications first until the entire Category Two fund is spent down. The FCC anticipates that current funding will be sufficient to cover requests for the five-year period.

What are the planning requirements?

The Orders eliminated the application requirement for technology plan approval for Category Two services beginning with funding year 2015. However, the Form 471 typically includes language such as:

"I certify that all bids submitted were carefully considered and the most cost-effective service offering selected, with price being the primary factor considered, and is the most cost-effective means of meeting educational needs and technology goals."

This would imply that the school/district should have technology goals in some format for all categories of the program (*First Modernization Order, pg. 79*).

What should school districts consider when they need to plan for both Wi-Fi and broadband construction?

High-speed broadband and Wi-Fi are now as vital a component of K-12 school infrastructure as electricity, air conditioning, and heating. As districts and schools consider Wi-Fi access, planning is essential. While every entity's needs are different, districts that have had substantial experience with Wi-Fi and companies that assist districts with networks and Wi-Fi agree that a 5-year plan with updates every year can provide a solid basis for a network that is effective. Applicants should be sure to evaluate all of their broadband access needs and apply for the services as needed via comprehensive planning to ensure seamless broadband access for learning ([http:// digitallearning.setda.org/broadband/#!/wi-fi](http://digitallearning.setda.org/broadband/#!/wi-fi)).

Are non-traditional facilities, like preschools, eligible?

Elementary and secondary schools are eligible for E-rate and each state defines elementary and secondary schools independently. In many cases, non-traditional facilities and students may be eligible based on state definitions of elementary or secondary education entities.

Leveraging Category Two Funds: Lessons and Best Practices from North Carolina

The North Carolina Digital Learning Plan (NCDLP) encapsulates the potential benefits of the FCC's new Wi-Fi funding options. In 2014, the state legislature called for public schools to transition from textbooks to digital materials by 2017. As part of this effort, it asked the State Board of Education (SBE) to develop and implement digital teaching and learning standards. In its subsequent "Strategic Plan," SBE called for all schools to have sufficient wireless access to support digital learning activities.

Thanks to previous state digital learning efforts, virtually all NC public schools had a broadband connection of 100 Mbps or better. However, most schools lacked adequate Wi-Fi to connect all students and classrooms. To remedy this connectivity problem, the state contracted the Friday Institute of NC State University to develop the NCDLP. In mid-2014, the Friday Institute began developing a plan to enhance Wi-Fi access in North Carolina schools. <http://ncdlplan.fi.ncsu.edu/>

After assessing existing connectivity through a statewide survey, the Friday Institute published its [Wireless Infrastructure Plan](#) in November 2014. The plan urged the state to take advantage of new E-rate funds through a state consortium. The plan described the \$150-per-student allocation as "sufficient" for the project and predicted that the new Category Two funding option could provide North Carolina with a 75%-78% discount.

In early 2015, the state applied for funding and issued an RFP. By mid-2015, the success of the program was clear. Through one Form 470, the state provided Wi-Fi to over 375,000 students at an average cost of only \$116 per student (pre-discount). North Carolina has plans to continue to improve Wi-Fi in schools by leveraging additional Category Two funding. For more information on the NCDLP, visit the Friday Institute's [Publications and Resource Page](#).

SETDA AND COMMON SENSE KIDS ACTION RESOURCES

- 1. Benefits of Broadband Expansion (2015):** This policy brief draws on multiple research sources to show that expanding broadband access helps to grow the Gross Domestic Product and personal incomes, increases children's educational opportunities, especially to do homework assigned on the Internet, and offers teens and others greater access to important health care information. Common Sense Kids Action: <https://www.common sense media.org/about-us/news/press-releases/common-sense-kids-action-releases-new-broadband-policy-brief>
- 2.  **Broadband Imperative: Recommendations to Address K-12 Education Infrastructure Needs (2012):** The Broadband Imperative provides an up-to-date assessment of access to broadband by students and teachers (in and out of schools), current trends driving the need for more broadband in teaching, learning and school operations, and specific recommendations for the broadband capacity needed to ensure all students have access to the tools and resources they need to be college and career ready by 2017-18. State Educational Technology Directors Association (SETDA): <http://www.setda.org/priorities/equity-of-access/the-broadband-imperative/>**
- 3.  **The Guide to Implementing Digital Learning** **Guide to Implementing Digital Learning (2014):** This resource is intended to provide guidance for districts to consider as they heighten their focus to ensure smooth implementation of digital learning. In addition, this resource includes proven resources and digital learning examples from across the nation to support discussions. State Educational Technology Directors Association (SETDA): <http://digitallearning.setda.org/broadband/#!/overview>**

4. **The Common Sense Education E-rate Toolkit (2012):** This toolkit provides a variety of resources for teachers and administrators that help ensure school compliance with E-rate regulations and provide teachers with strategies to protect their students' data during school Internet use: <https://www.common sense media.org/educators/erate-admins>

FEDERAL COMMUNICATIONS COMMISSION RESOURCES

1. First E-rate Modernization Order (July 2014): https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-99A1.pdf
2. E-rate Modernization Order Summary (July 2014): Summary of the Order adopted in July 2014, updated to account for changes made in the Second Order. <https://www.fcc.gov/page/summary-e-rate-modernization-order>
3. Second E-rate Modernization Order (December 2014): https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-189A1.pdf
4. Summary of the Second E-Rate Modernization Order: <https://www.fcc.gov/page/summary-second-e-rate-modernization-order>
5. E-rate Modernization Data Sets and Resources (2015): <https://www.fcc.gov/encyclopedia/e-rate-modernization-data>
6. FCC's E-rate Fiber Build Workshop: <https://www.fcc.gov/events/e-rate-fiber-build-workshop>

UNIVERSAL SERVICE AND ADMINISTRATIVE COMPANY (USAC) RESOURCES

1. Getting Started: E-rate application overview of the requirements: <http://www.usac.org/sl/about/getting-started/default.aspx>
2. List of Eligible Services: <http://www.usac.org/sl/applicants/beforeyoubegin/eligible-services-list.aspx>
3. USAC Glossary of Terms: <http://www.usac.org/res/documents/sl/pdf/handouts/SL-Glossary-of-Terms.pdf>
4. Non-Traditional Education Settings: <http://www.universalservice.org/sl/applicants/beforeyoubegin/non-traditional/default.aspx>
5. Educational Services Agencies: <http://www.usac.org/sl/applicants/beforeyoubegin/esa.aspx>

RESOURCES FROM THE NORTH CAROLINA DIGITAL LEARNING PLAN

1. North Carolina Digital Learning Plan (NCDLP) Documents: <http://ncdlplan.fi.ncsu.edu/%20publications/>

STATE LAWS RELATED TO THE NCDLP:

2. SL2013-12: <http://www.ncleg.net/Sessions/2013/Bills/House/HTML/H44v3.html>
3. SL2013-11: <http://www.ncleg.net/EnactedLegislation/SessionLaws/HTML/2013-2014/SL2013-11.html>
4. SL-2013-266: <http://www.ncleg.net/Sessions/2013/Bills/Senate/PDF/S168v6.pdf>

5. NCDLP State Survey: <http://ncdlplan.fi.ncsu.edu/wp-content/uploads/2014/09/2014-FI-Wireless-Survey.pdf>
6. NCDLP Wireless Infrastructure Plan: <http://ncdlplan.fi.ncsu.edu/wp-content/uploads/2014/09/WirelessInfrastructurePlan-Revised.pdf>
7. NCDLP Sample RFP: <http://ncdlplan.fi.ncsu.edu/wp-content/uploads/2014/09/CategoryTwoStatewideRFP.pdf>
8. NCDLP Infographic: http://ncdlplan.fi.ncsu.edu/wp-content/uploads/2014/09/E-rate_Stats1.pdf

GENERAL BROADBAND AND WI-FI IMPLEMENTATION RESOURCES

1. 5 Ways to Make the Most of the New E-Rate (October 2014): T.H.E. Journal Article: <http://thejournal.com/articles/2014/10/27/5-ways-to-make-the-most-of-the-new-erate.aspx>
2. Analysis of Costs to Upgrade and Maintain Robust Local Area Networks for all K12 Public Schools (May 2014): This paper identifies the key equipment and services typically used to deploy and maintain a robust LAN, Wi-Fi and core WAN network. CoSN and Education Superhighway: <http://www.educationsuperhighway.org/wp-content/uploads/2014/11/Connecting-Every-Classroom-LAN-WiFi-Analysis-May-2014.pdf>
3. The Digital Textbook Playbook (2012): The FCC's Digital Textbook is designed to help K-12 school educators plan for the transition to rich, interactive, and personalized digital learning environments: <https://www.fcc.gov/encyclopedia/digital-textbook-playbook>
4. School Wi-Fi Buyer's Guide: (2015) The School Wi-Fi Buyer's Guide is an online tool for technology directors who want to make educated wireless equipment purchase decisions but do not have the time it takes to conduct extensive research. Education Superhighway: <http://www.educationsuperhighway.org/buyersguide/>
5. Smart Education Networks by Design (SEND): (2012) The SEND Initiative developed guidelines for network design and a checklist for district network planning. Currently, SEND II is building on that work in developing next-level resources for building network architectures that can handle and evolve with new demands. Consortium for School Networking (CoSN): <http://www.cosn.org/SEND>

*Please note that the information provided in this document is based on state leaders' input, review of the FCC's E-rate Modernization Orders, the May 20, 2015, E-rate Workshop, and information provided during meetings with the FCC in January and June, 2015. If you have any questions specific to your school, district, or state E-rate eligibility, please contact the FCC directly. For questions about self identification of fiber projects or special construction please contact: Dana Shaffer, Deputy Managing Director, FCC (dana.shaffer@fcc.gov); Charles Eberle, Attorney Advisor, FCC Wireline Competition Bureau (Charles.Eberle@fcc.gov); or Joe Freddoso, Dark Fiber Consultant, USAC (jfreddoso@gmail.com). If you have any additional questions or concerns, please contact Susannah Savage at Common Sense Kids Action (ssavage@commonsense.org) or Christine Fox at SETDA (cfox@setda.org).



Founded in 2001, the State Educational Technology Directors Association (SETDA) is the principal nonprofit membership association representing US state and territorial educational technology leaders. Our mission is to build and increase the capacity of state and national leaders to improve education through technology policy and practice. setda.org



The advocacy arm of Common Sense Media, Common Sense Kids Action, works with policy makers, business leaders, and other advocates to ensure that every child has the opportunity to succeed in the 21st century. Our mission is to make kids and education our nation's top priority by building a membership base and driving policies that promote access to high-quality digital learning experiences; protect kids' online privacy; expand access to affordable, high-quality early education; and reduce child poverty. <https://commonsensemedia.org/kids-action>



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