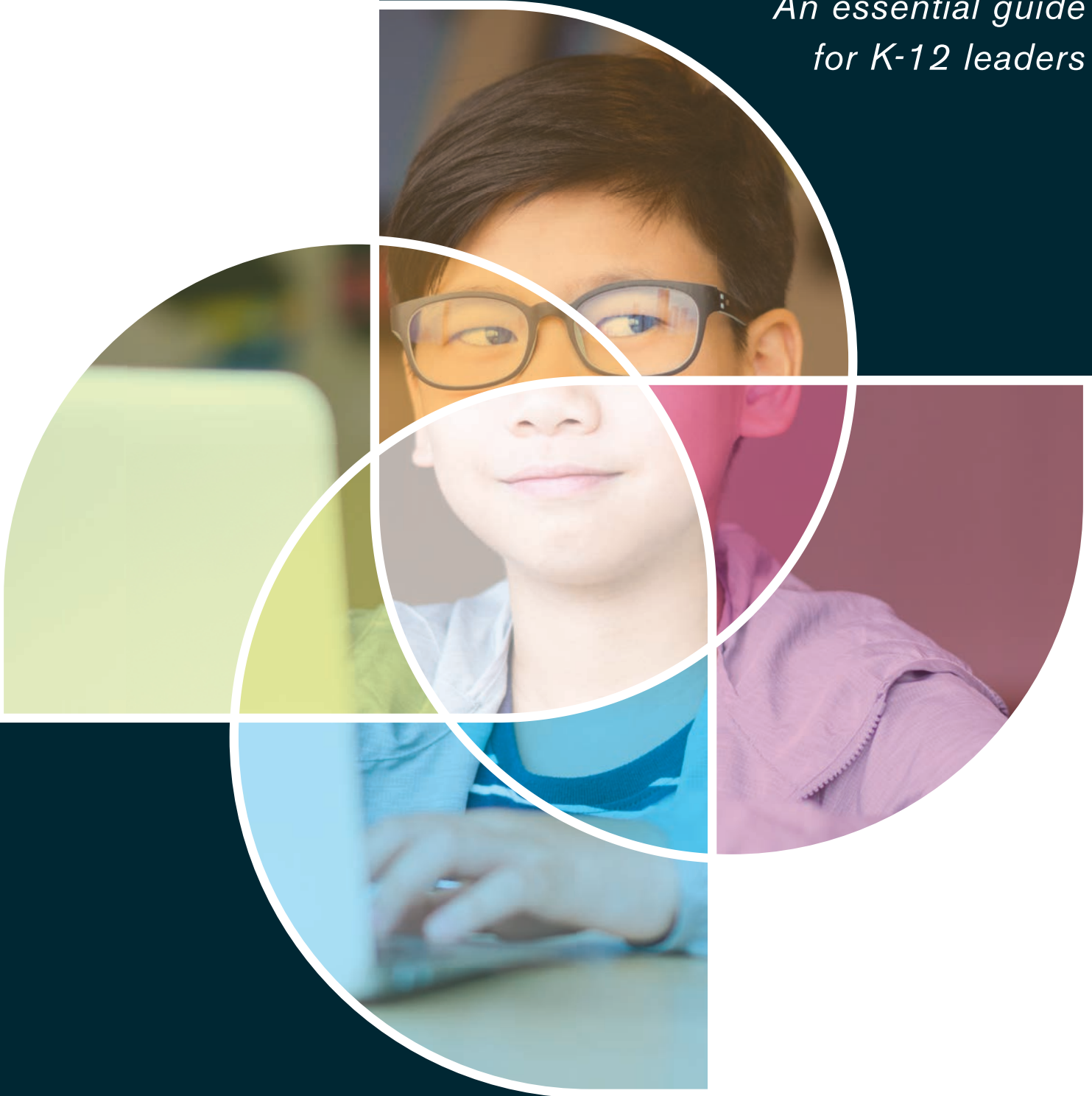


Using E-rate funds to enhance school networks

*An essential guide
for K-12 leaders*



eSCHOOL NEWS

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K-12 stakeholders saw the value of digital learning firsthand when schools shut down amid the coronavirus pandemic. Suddenly, teachers who'd seldom used technology for instruction were creating online lessons and using web conferencing platforms to connect with students.

Out of necessity, teachers' proficiency with digital tools and resources has increased as a result of the pandemic. It's likely that many of the practices that emerged in the shift to online instruction will continue long after schools reopen. That's important, because digital learning allows for more personalized, engaging and student-centered instruction. It empowers students to take control of their education, leading to more active learning strategies and a deeper understanding of content.

To build on this promise of digital learning, schools will need secure, reliable broadband networks. The federal E-rate program can help; however, the application process can be complex to navigate.

This guide offers a roadmap to help K-12 leaders successfully leverage E-rate to expand digital learning opportunities for their students. It provides an overview of the program, insights on the application process and strategies to help districts capture their share of discounts.

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Broadband is essential for digital learning to thrive

The annual Speak Up survey from the nonprofit group Project Tomorrow confirms the value of K-12 digital learning. With the help of technology...

- **62 percent** of teachers say they're better able to differentiate instruction.
- **56 percent** of middle school students say they're able to learn at their own pace.
- **55 percent** of high school students say they're collaborating more with classmates.¹

To realize technology's full potential to transform instruction, school systems must invest in the infrastructure needed to support digital learning effectively.

The Federal Communications Commission (FCC) recommends 1 Mbps of bandwidth per student to support digital learning. However, just 38 percent of school districts meet this standard now — and the average bandwidth per student in U.S. schools today is 676 Kbps.²

Surveys of K-12 technology leaders suggest they're aware of the need for more robust networks. According to Project Tomorrow, 68 percent of chief technology officers say they're concerned about their school district's readiness to implement new digital learning initiatives — and only 26 percent agree with the statement: "We have enough bandwidth to meet all our digital learning needs today."³

With the help
of technology⁴



62% of teachers say they're better able to differentiate instruction.



56% of middle school students say they're able to learn at their own pace.

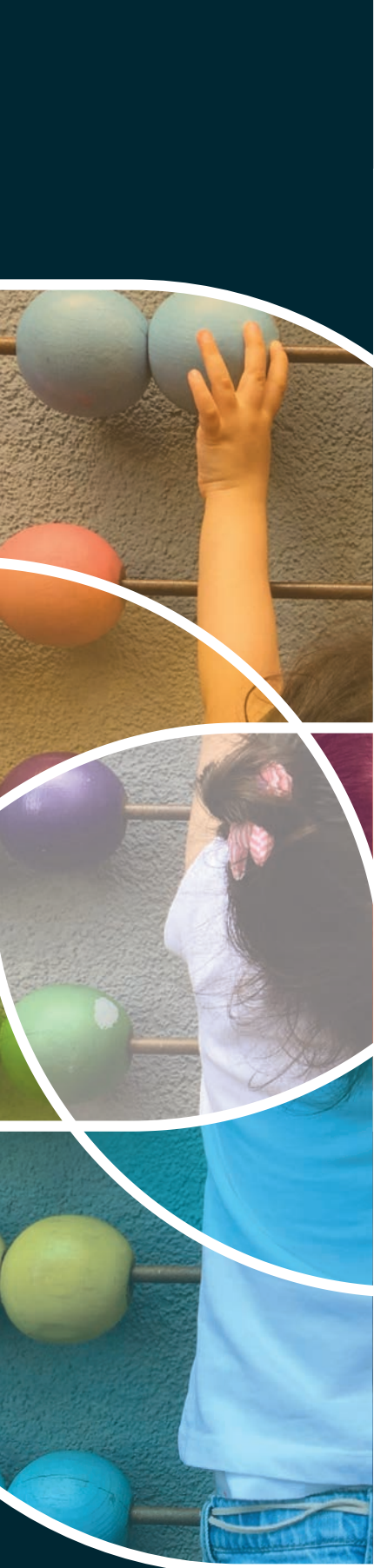


55% of high school students say they're collaborating more with classmates.

E-rate can help fill broadband gaps

The federal E-rate program was created to help schools meet their connectivity needs. The program annually provides as much as \$4 billion in discounts on Internet access (Category 1 services) and network infrastructure (Category 2 services) to eligible schools and libraries.

The latest changes to the program's rules make it easier for school systems to deploy WiFi, fiber and other network solutions in a way that meets their needs, while providing more opportunities for the very smallest schools in particular. The new rules come at a good time for schools, as they coincide with the arrival of a new generation of wireless technology.



E-rate by the numbers



\$2.91 billion

demand estimate by USAC for the E-rate program for FY2020⁵



Nearly 130,000

schools and libraries applied for discounts in FY2019⁶



94%

of applicants say E-rate funding is mission critical⁷

Success in connecting K-12:⁸

99% of schools now have fiber Internet connections

46.3 million students have broadband access at school

94% of schools have digital learning occurring in at least half of classrooms



More work to be done:⁹

6,575 districts haven't met the FCC's recommendation of 1 Mbps per student

743 schools do not have fiber connections

70,000 students can only receive broadband access with special construction projects costing \$500,000 or more



A brief history of E-rate

Signed into law as part of the Telecommunications Act of 1996, the Schools and Libraries Program of the Universal Service Fund (known colloquially as “E-rate”) permitted communications service providers to offer services to K-12 schools and public libraries at discounts ranging from 20 to 90 percent, based on economic need (as measured by the percentage of students eligible for the National School Lunch Program).

When the program began, the Internet was just beginning to make inroads into K-12 schools. Only 14 percent of K-12 classrooms in the U.S. had access to the Internet — and the WiFi standard that would bring wireless connectivity to schools, businesses and homes was still a year away from being unveiled.

In the years that followed, E-rate helped bring Internet access to students. But needs within school buildings — including the growing demand for wireless access points as mobile device use exploded — often went unmet as a result of limited funding that often reached only the neediest districts.

Originally, E-rate supplied discounts on telecommunications services, Internet access and the network services and other internal connections needed to bring the Internet into classrooms. Telecommunications services and Internet access were considered “Priority 1” services and were funded first. Any leftover funding was distributed for internal connections (“Priority 2” services) starting with the poorest schools and libraries (those qualifying for 90 percent discounts) and continuing down the discount scale.

However, the limited amount of funding available — coupled with the high demand for Priority 1 services — meant that funding for internal connections rarely reached even the 70 percent discount band. This contributed to what then-FCC Chairman Tom Wheeler called “the WiFi gap” and, ultimately, a revamping of the program that has had wide-ranging consequences.

E-rate 2.0: Designed for the digital age

In 2014, the FCC took significant steps to modernize E-rate. These sweeping changes increased funding from \$2.4 billion to \$3.9 billion per year and targeted \$1.5 billion of this figure for WiFi and other internal connections. This includes fully managed internal broadband services (i.e., managed WiFi that schools outsource to industry partners) that support connectivity within schools and libraries.

The FCC also changed E-rate rules to extend funding for network upgrades to more applicants. For instance, it eliminated the two-tiered priority system for services, referring to Priority 2 services as “Category 2” services instead. The agency

also capped the maximum discount on these services at 85 percent instead of 90 percent and limited the amount of funding that applicants could request on Category 2 services within a five-year period.

To the chagrin of some districts, the new regulations began phasing out subsidies for traditional phone services — both landline and wireless — to focus instead on closing broadband and WiFi gaps. Today, the E-rate program no longer supports any voice-related services.

The new reality

The E-rate's impact over the past two decades has been dramatic. More than 99 percent of schools are now connected to the Internet by fiber, and bandwidth costs have fallen dramatically, from a median cost of \$22 per Mbps in 2013 to \$2.24 in 2019.¹⁰ E-rate 2.0 also met its goal of ensuring that more schools received funding for network services. In 2014,

only a quarter of U.S. classrooms had WiFi access, largely because only 14 percent of school districts had been able to receive E-rate support for WiFi. Since that time, 90 percent of school districts have received WiFi support, resulting in \$5 billion in wireless investment.¹¹

However, the program has had its challenges as well. E-rate requires extensive documentation, advanced planning and, importantly, a share of district money. Efforts to streamline the application process have been mixed. According to a 2019 survey from E-rate consulting firm Funds for Learning (FFL), 53 percent of applicants said the program is meeting its goal of improving efficiency.¹² While that's up from 35 percent in 2016, it means 47 percent of applicants believe there is still much work to be done.

Yet the program's importance remains vital. "You've got a lot riding on these E-rate applications," says FFL Chief Executive John Harrington. "For many districts, it's keeping the lights on."



E-rate's alphabet soup: Key acronyms and agencies

EPC: E-rate Productivity Center, the web portal districts use to apply for and manage E-rate funding requests. <https://portal.usac.org/suite/>

FCC: Federal Communications Commission, the federal agency that manages the E-rate program. <https://www.fcc.gov/>

USAC: Universal Service Administrative Company, the organization that administers funding for the E-rate program. <https://www.usac.org/>

USF: Universal Service Fund, provides funding for E-rate discounts through mandatory contributions from telecom providers. <https://www.fcc.gov/general/universal-service-fund>

New rules make it easier to deploy WiFi

Under the 2014 E-Rate Modernization Order, schools were eligible to receive discounts on up to \$150 in WiFi and other network costs per student, per school site, over a five-year period (adjusted slightly each year for inflation). These rules were in effect for funding years 2015 through 2019.

In December 2019, the FCC issued a new Report and Order that made this five-year budget cap a permanent feature of E-rate. The new rules also designated 2020 as a “bridge” year and gave school systems much more flexibility in how they can deploy WiFi services beginning in 2021.¹³

For the 2021 funding year, the five-year budget cap will reset at \$167 per student on the pre-discount cost of WiFi and other network services through 2025. However, the cap will apply district-wide rather than for each individual school site.



The new rules will raise the five-year budget floor on **Category 2 services from \$9,200 to \$25,000 beginning in 2021**. This change will allow very small schools to qualify for more E-rate support than before.

This change should result in a streamlined application process and a more efficient use of E-rate funding, because K-12 leaders won't have to calculate and manage a separate budget cap for each building. Instead, E-rate applicants can simply multiply the total number of students in their district by \$167 to arrive at a budget for WiFi and other Category 2 services that they can apply however they'd like across their entire school system.

In addition, the new rules will raise the five-year budget floor on Category 2 services from \$9,200 to \$25,000 beginning in 2021. This change will allow very small schools to qualify for more E-rate support than before.



Fiber construction projects now more attainable

Special construction charges, which are eligible for E-rate support as a Category 1 service, are the up-front costs associated with building and deploying new fiber networks to bring broadband service to schools and libraries. There are three components eligible for E-rate funding: (1) network facilities, (2) design and engineering, and (3) project management.

Special construction does not include charges for network equipment — that is, the modulating electronics and other equipment needed to make a fiber service functional.

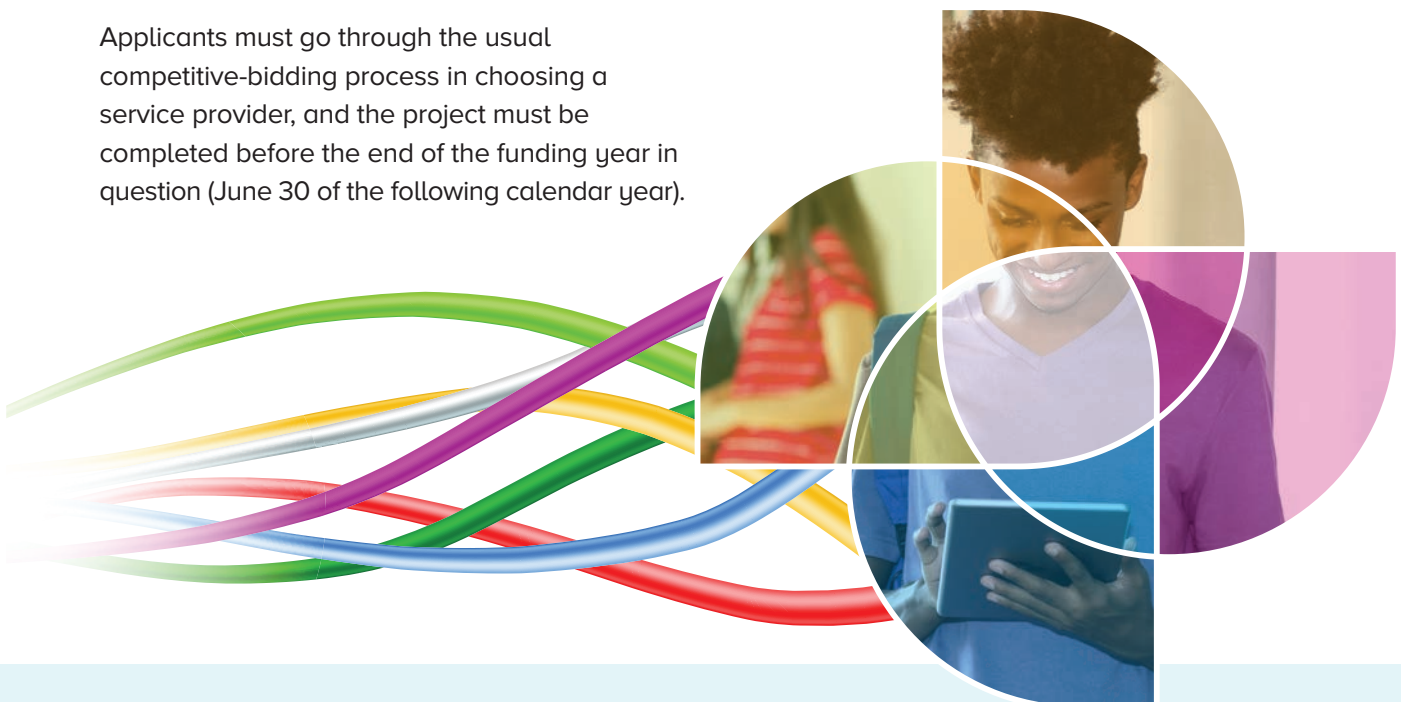
Applicants can receive E-rate support for special construction projects that begin up to six months before the start of the program year in which they're applying (so, Jan. 1 or later), as long as the construction project is necessary for fiber Internet service to begin on or after the July 1 start of the funding year.

Applicants must go through the usual competitive-bidding process in choosing a service provider, and the project must be completed before the end of the funding year in question (June 30 of the following calendar year).

If construction is unavoidably delayed as a result of weather or another emergency, applicants can request a one-year extension.

In January 2020, the FCC issued an E-rate ruling that provides greater certainty to schools seeking to acquire fiber Internet service. The ruling permanently provides school districts the ability to receive E-rate funding to offset the upfront, nonrecurring cost of special construction projects to install new fiber lines.

Under the old rules, E-rate funding for special construction projects costing \$500,000 or more had to be spread out, or amortized, over a period of at least three years. That meant school systems had to apply for funding to cover these costs separately for each year of the amortization period — with no guarantee that these requests would be approved.



This requirement created a lot of uncertainty and complexity for E-rate applicants, which had a chilling effect on special construction projects. Many districts (and service providers) were reluctant to invest in new fiber construction, because they weren't sure they would recover their costs.

Recognizing these barriers to investment, the FCC suspended this requirement in 2014 on a temporary basis. After observing an increase in broadband infrastructure deployment, the FCC permanently eliminated the amortization requirement in January 2020. Now with the 2020 ruling, going forward, E-rate eligible special construction costs can be charged to USAC in a single program year.

“By creating a more certain path for reimbursement, applicants and service providers were more willing to take on special construction projects and invest in new broadband infrastructure,” the FCC wrote in explaining its decision. “During the suspension period, applicants no longer had to worry about whether they would receive a funding commitment in the second and third years of the amortization cycle, and service providers did not have to wait years to recoup their construction costs; since applicants could receive a funding commitment up-front for the E-rate supported portion of the project.”¹⁴

Greater certainty, more choices

Typically, applicants must pay the non-discounted share of E-rate supported services within 90 days of receiving a service. If applicants are seeking support for special construction charges, they can request that service providers allow them to pay the non-discounted share of these charges in installments up to four years from the first day of the relevant funding year.

This request for installment payments must be included in an applicant's FCC Form 470. Bidders aren't required to offer installment payments, but if they choose to do so, they must disclose the payment terms in their bid submission.

The new ruling “gives school and district leaders greater certainty and more favorable options for financing fiber construction projects,” says Jeannie Horton-Isreal, education program manager for Spectrum Enterprise. As a result, new fiber construction projects have now become much more attainable.



Navigating the application process

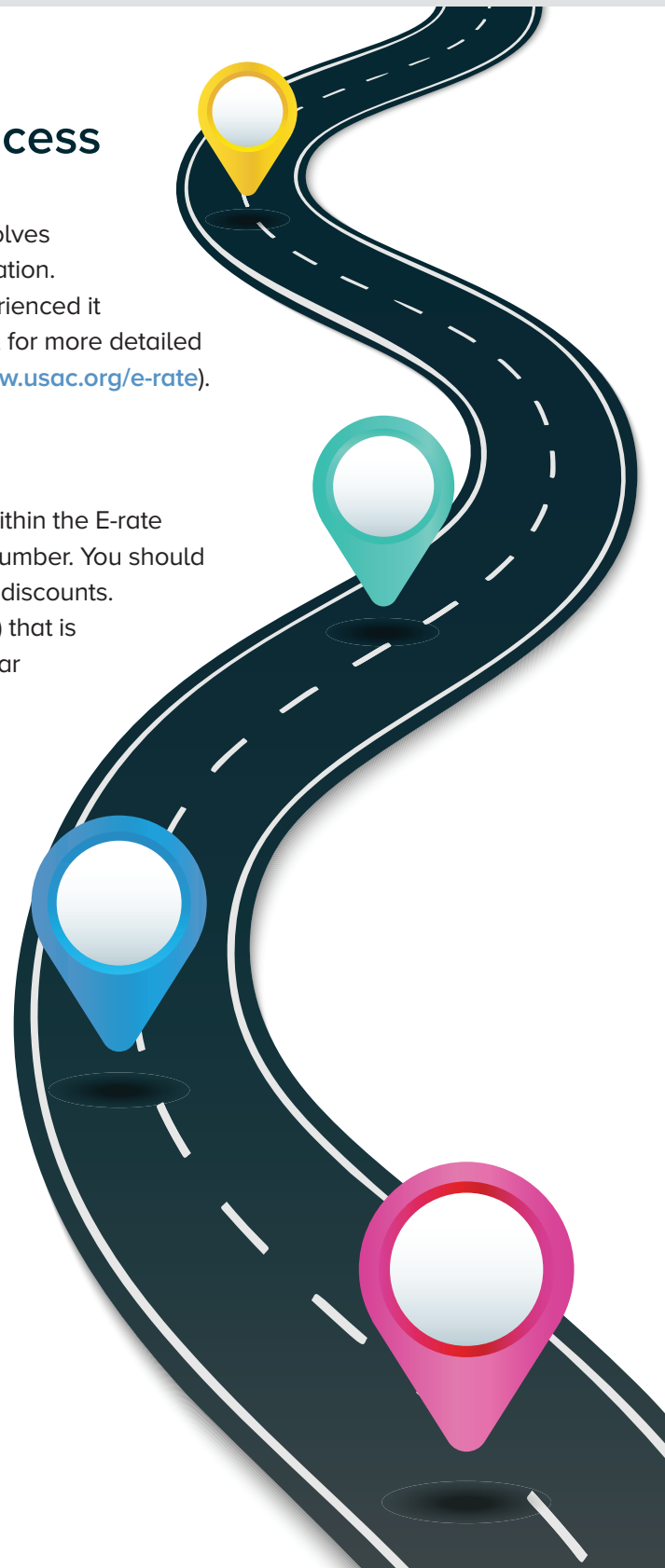
Applying for E-rate discounts is a multistep process that involves filing several forms and providing a great deal of documentation. The process can be intimidating for those who haven't experienced it before. What follows is an overview of the application cycle; for more detailed information, be sure to review the USAC website (<https://www.usac.org/e-rate>).

The process in a nutshell

To apply for E-rate discounts, you must create an account within the E-rate Productivity Center (EPC) and receive an applicant entity number. You should also understand what products and services are eligible for discounts. Each year, USAC publishes a new Eligible Services List (ESL) that is approved by the FCC; applicants will want to become familiar with this list annually.

To ensure that schools and libraries are receiving services at competitive prices, USAC requires applicants to go through a 28-day competitive-bidding process for all new products and services for which they're requesting E-rate support. Services provided under tariff or on a month-to-month basis require applicants to go through this process each year. However, if a multiyear contract results from a completed bidding process, it isn't necessary to go through this process in subsequent years until a new contract is required.

Once you've entertained bids, chosen a service provider and signed a contract, you can apply for E-rate discounts on those eligible services. Assuming your application is approved, you will either pay your service provider the discounted rate for services or pay for services at the regular rate and invoice USAC for a reimbursement on the discounted amount.



An overview of eligible services

The following is a general overview of products and services that are eligible for E-rate support as of Funding Year 2020. However, USAC updates this list every year, so be sure to consult the most recent ESL before applying — and don't hesitate to contact USAC if you have any questions about the eligibility of services.

Category 1: Data transmission and/or Internet access

- Asynchronous Transfer Mode (ATM)
- Broadband over Power Lines
- Cable Modems
- Digital Subscriber Line (DSL)
- DS-1 (T-1), DS-3 (T-3), and Fractional T-1 or T-3
- Ethernet
- Integrated Services Digital Network (ISDN) (Note: Dedicated voice channels on an ISDN circuit are no longer eligible)
- Leased Lit Fiber
- Leased Dark Fiber (including dark fiber indefeasible rights of use, or IRUs, for a set term)
- Microwave Wireless
- Self-Provisioned Broadband Networks (applicant owned and operated networks)
- Frame Relay
- Multi-Protocol Label Switching (MPLS)
- OC-1, OC-3, OC-12, OC-n
- Satellite Internet
- Switched Multimegabit Data Service

Eligible costs include monthly charges, special construction, installation and activation charges, modulating electronics and other equipment necessary to make a Category 1 broadband service functional ("Network Equipment") and maintenance and operation charges. Network Equipment and maintenance and operation costs for existing networks are eligible as well. All equipment and services, including maintenance and operation, must be competitively bid.

Applicants who seek bids for leased dark fiber must also seek bids for leased lit fiber service and fully consider all responsive bids.

Form 470:

Used to describe products and services requested for funding through the E-rate program; required to open the 28-day competitive bidding period.

Form 471:

Once service providers are chosen, this form is used to list all contracts and services for which the applicant is requesting E-rate discounts.

Form 472:

Also called a Billed Entity Applicant Reimbursement (BEAR) Form, this form is used to seek reimbursement from USAC on the discounted amount when applicants have paid in full for E-rate approved services.

Form 486:

Used to confirm to USAC that services have started; required before most payments can be made.

Form 500:

Used for applicants to make adjustments, modify dates for receipt of service or file for extensions.



Applicants may seek special construction funding for the upfront, non-recurring costs for the deployment of new or upgraded facilities. The eligible components of special construction are construction of network facilities, design and engineering, and project management. Staff salaries and labor costs for personnel are not E-rate eligible.

Category 2: Broadband internal connections

- Antennas, connectors and related components used for internal broadband connections
- Cabling
- Caching
- Firewall services and firewall components separate from basic firewall protection provided as a standard component of a vendor's Internet access service
- Racks
- Routers
- Switches
- Uninterruptible Power Supply (UPS)/Battery Backup
- Access points used in a local area network (LAN) or wireless local area network (WLAN) environment (such as wireless access points)
- Wireless controller systems

Software supporting the components on this list used to distribute high-speed broadband throughout school buildings is also eligible. Applicants should request software in the same category as the associated service being obtained or installed.

Functionalities listed above that can be virtualized in the cloud, and equipment that combines eligible functionalities, like routing and switching, are also eligible. A manufacturer's multiyear warranty for a period up to three years that is provided as "an integral part of an eligible component, without a separately identifiable cost," may be included in the cost of the component.

Managed Internal Broadband Services are also E-rate eligible. These are defined as "services provided by a third party for the operation, management and monitoring of eligible broadband internal connections" (such as managed WiFi). Eligible expenses include the management and operation of the LAN or WLAN, such as installation, activation and initial configuration of eligible components and on-site training on the use of eligible equipment.

In addition, E-rate support is available for basic maintenance and technical support on eligible broadband internal connections. This includes repair and upkeep of eligible hardware; wire and cable maintenance; configuration changes; basic technical support; and software upgrades, bug fixes and security patches.

Timelines for applying

Although specific dates vary from year to year, here's a summary of the application process.

APPLICATION PROCESS

COMPETITIVE BIDDING



STEPS INVOLVED

- Request services by submitting FCC Form 470.
- Wait at least 28 days while entertaining bids.
- Evaluate bids as they're received.
- Choose a service provider and sign a contract.

TIMELINE

Fall-Winter

APPLYING FOR DISCOUNTS



STEPS INVOLVED

- After waiting at least 28 days to choose service providers and sign contracts, file FCC Form 471 to request E-rate discounts on eligible services.
- Work with service providers to choose an invoicing method: Pay the full cost of services and invoice USAC for reimbursements, or pay only the discounted cost (in which case the service provider would invoice USAC for the difference).
- USAC reviews applications and issues Funding Commitment Decision Letters.
- File appeals of USAC decisions within 60 days, if applicable.

TIMELINE

Winter-Spring
(Form 471 deadline is typically mid to late March)

SERVICE BEGINS



STEPS INVOLVED

- Once the new program year begins July 1, file FCC Form 486 confirming that services have started and reporting compliance with the Children's Internet Protection Act.

TIMELINE

Summer

INVOICING



STEPS INVOLVED

- If requesting reimbursement from USAC for services paid in full, submit FCC Form 472 (BEAR).
- Complete invoice review; correct errors and resubmit forms if necessary.
- Receive BEAR reimbursement from USAC.

TIMELINE

Summer-Fall



When planning out target dates and milestones, make sure you build in enough time to allow for contingencies. USAC, the agency that oversees E-rate, is unforgiving about the program's deadlines.

Tips for success

A significant number of schools are denied E-rate funding because they miss a deadline or fail to conform to the program's complex rules. Here are five strategies that can simplify the process and reduce the risk of having your application denied.

Map out a plan.

"The most successful applicants are those who sketch out a plan before each E-rate season begins," says Brian Stephens, a senior compliance analyst for FFL.

Your plan should be unique to your own school or district and should be built around how it operates, Stephens says. However, there are a few common elements that each plan should contain:

- A calendar of all application deadlines for the coming program year, so you can refer to these easily and aren't surprised at the last minute. Based on these deadlines, plan out key milestones and target dates by which you should finish certain E-rate tasks to keep on schedule. For instance, you should know the last date by which you can file a Form 470 and still meet the deadline for filing a Form 471 after waiting the required 28-day bidding period.
- A list of all information you'll need to complete the application process, such as enrollment information and National School Lunch Program data (to calculate your discount percentage). Make sure you know where this information resides and whom you need to speak with — or which databases you need to consult — in order to retrieve it.

Give yourself plenty of time.

When planning out target dates and milestones, make sure you build in enough time to allow for contingencies. USAC, the agency that oversees E-rate, is unforgiving about the program's deadlines.

"Schools typically wait until the deadline to file their E-rate forms, but we recommend that you file early," Stephens says. "This gives you the opportunity to refile a form in case you need to add to or amend your request."

Pay attention to document retention.

One aspect that's often overlooked is how you'll store E-rate documentation. USAC requires E-rate applicants to save all documentation for 10 years after the final service date in case of an audit. "That's longer than you have to keep your tax documentation," Stephens notes.

Because this retention period is typically longer than schools have to save any other files or documents by law, you might have to create special processes just for storing E-rate information. But if you're ever audited, you'll be glad you did. School systems that aren't able to produce the information required in an audit can be forced to return millions of dollars in E-rate discounts. USAC conducts dozens of E-rate audits each year to curb instances of waste, fraud and abuse.

Be responsive to program administrators.

E-rate administrators will often reach out to applicants by phone or email if they have a question or need more information. This communication might occur during the summer or another school vacation period.

When program administrators send questions, they request a response by a certain date — often 15 days from the date of their email. If you don't respond by the date they indicate, your application will be denied. Be on the lookout for such communication, and respond in a timely manner when prompted.

Stay informed.

There are frequent changes to E-rate rules and procedures. For instance, USAC issues a new Eligible Services List every year. Therefore, it's critical to remain as educated as possible about the program.

Leverage as many resources as you can to stay current. USAC offers free E-rate training sessions each year, as do most state E-rate coordinators. FFL offers a free email newsletter with program information and updates.





Final thoughts

With billions of dollars in discounts available each year, the E-rate program provides a critical path to enhancing K-12 networks — and new rules now make it easier for school systems to deploy WiFi and offset special construction costs.

Even with these new rules in place, applying for E-rate discounts and keeping up with ever-changing policies can be tricky. To leverage E-rate effectively, you'll need dogged determination and a long-term strategy for making the most of program opportunities.

- ¹ *Taking Learning Online: Leveraging online resources to support students' learning and teacher effectiveness*, Project Tomorrow and Spectrum Enterprise. (2019). <https://enterprise.spectrum.com/insights/resources/reports/taking-learning-online-leveraging-online-resources-to-support-students-learning-and-teacher-effectiveness>.
- ² *2019 State of the States Report*. EducationSuperHighway. <https://stateofthestates.educationsuperhighway.org/#national>.
- ³ "An Emerging Threat to Educational Transformations: New demands for digital learning held back by bandwidth capacity challenges," Project Tomorrow and Spectrum Enterprise. (2019). <https://enterprise.spectrum.com/insights/resources/reports/an-emerging-threat-to-educational-transformations>.
- ⁴ Ibid.
- ⁵ "Wireline Competition Bureau Directs USAC to Fully Fund Eligible Category 1 and Category 2 E-rate Requests," FCC, July 6, 2020, <https://docs.fcc.gov/public/attachments/DA-20-712A1.pdf>
- ⁶ "2019 E-rate Trends Reports," Funds for Learning, 2019, <https://fundsforlearning.app.box.com/v/2019ErateTrends>
- ⁷ "2019 State of the States Report," EducationSuperHighway, 2019, <https://stateofthestates.educationsuperhighway.org/#state>
- ⁸ Ibid.
- ⁹ Ibid.
- ¹⁰ Ibid.
- ¹¹ Ibid.
- ¹² "2019 E-rate Trends Report," Funds for Learning, 2019. <https://www.fundsforlearning.com/2019ErateTrends>.
- ¹³ Federal Communications Commission, Report and Order FCC 19-117, Dec. 3, 2019. <https://docs.fcc.gov/public/attachments/FCC-19-117A1.pdf>.
- ¹⁴ Federal Communications Commission, Report and Order FCC 20-3, Jan. 27, 2020. Retrieved from <https://ecfsapi.fcc.gov/file/01271085820403/FCC-20-3A1.pdf>.

About Spectrum Enterprise

Spectrum Enterprise, a part of Charter Communications, Inc., is a national provider of scalable, fiber technology solutions serving America's largest businesses and communications service providers. The broad Spectrum Enterprise portfolio includes networking and managed services solutions: Internet access, Ethernet access and networks, Voice and TV solutions.

Spectrum Enterprise's industry-leading team of experts works closely with clients to achieve greater business success by providing solutions designed to meet their evolving needs.

More information about Spectrum Enterprise can be found at enterprise.spectrum.com/E-rate.

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