Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Modernizing the E-Rate	)	WC Docket No. 13-184
Program for Schools and Libraries	)	

COMMENTS OF THE NEBRASKA DEPARTMENT OF EDUCATION
CATEGORY 2 BUDGET APPROACH FOR E-RATE APPLICANTS

Thank you for the opportunity to provide comments on the Category 2 Budget Approach for E-Rate Applicants. Category 2 funding is an important and valuable benefit to schools and libraries in the State of Nebraska. The FCC's continued dedication to update and modernize eligible services is very much appreciated by E-Rate eligible entities in this state.

Nebraska is a very rural state. There are 244 public school districts in the state of Nebraska serving over 310,000 K-12 students. About one third of the districts in the state (81) are considered sparse, and 40 of those are classified as very sparse. Eighty-four percent of K-12 districts serve 1,000 or fewer students; 67% serve fewer than 500 students. Nebraska is also continuing work to support the needs of a changing population including 44.17% of students qualifying for free/reduced meals, a 6.2% English Language Learners population, 14.5% High Ability, and 14.7% Special Education statewide.

Nebraska schools applaud the FCC's decision to make permanent the five-year, pre-discount budgets for applicants requesting funding for the Category 2 equipment and services needed to bring high-speed broadband into classrooms and libraries and meet the Wi-Fi needs of students and library patrons. Category 2 Budgets under this adjustment have had a more fair and equitable distribution of funds to all eligible entities.

Impact of E-Rate funding for internal connections.

Nebraska is a state where districts rarely qualified for Priority 2 funding prior to the 2014 Modernization Order.   The following chart indicates the discounts received by Nebraska schools four years prior to the FCC's Category 2 budgets for individual schools as well as subsequent discounts funded post Order.

Year	FRNs submitted	FRNs funded	Lowest Discount Funded	Post Discount Cmtd Funding
2011	13	4	90	$ 680,922.25
2012	26	4	90	$ 419,200.66
2013	15	0	0	$ -
2014	3	0	0	$ -
2015	281	265	20	$ 6,587,126.04
2016	193	176	40	$ 3,715,644.41
2017	113	93	40	$ 1,864,024.69
2018	151	115	40	$ 2,911,401.73

The implementation of individual school budgets for Category 2 created a predictable and equitable funding model and was a welcome change from past Priority 2/Category 2 funding. This allowed schools the opportunity to upgrade much needed infrastructure and internal connections essential to meet the needs of today's digital learning environment. As need increases and technology advances, infrastructure will always be in a state of upgrade. The challenges schools face in remaining viable in a digital world will increase as well.

In addition to increases in technology tools, a robust infrastructure needs to be ubiquitous and dependable to meet the needs of students taking online distance learning courses and teacher and learning resources in a blended learning environment. Blended learning and courses shared across the state between districts on the statewide education network, including dual credit and advanced coursework when not offered within a local school, have become a mainstay especially in rural sections of the state that often face challenges hiring and retaining content-specific teachers. The following graph shows distance learning course exchanges by grade type:
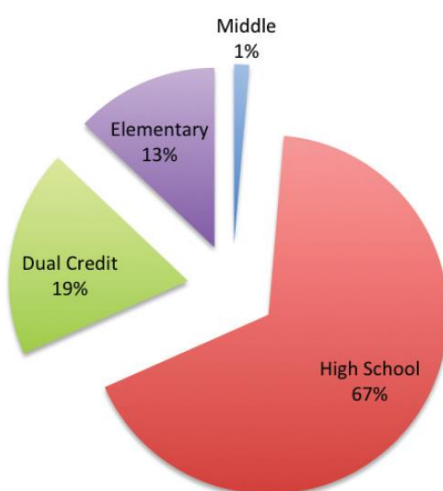
Simplify Budget Calculations:

FCC seeks comment on whether to change the per-student or per-square foot budget multipliers, particularly for entities that may have participated at a lower rate or that may face higher costs for internal connections.

Nebraska recommends raising the floor to $22,000.

Whether the school is large or small, it costs the same to put infrastructure into a classroom (WAP, closet switches/routers, cabling). Using costs provided in the Estimated Costs described below, under the current funding levels, using the example of two schools, with 10 classrooms in an elementary building, School A with 50 students gets a budget of $7,500 – adjusted to a $9,200 budget floor; and School B with 150 students gets $22,500. That equates to $920 per classroom for school A, and $2,250 per classroom for school B. Based on the following example of cost, estimating 10 classrooms, with 2 wiring closets, this cost would total: $24,400, or $2,440 per classroom.

Estimated Costs: A senior engineer in one of the rural Nebraska Educational Service Units (ESUs) provides the following estimates for planning Category 2 budgets:

> I always use dual drops to every location so I estimate $450 per location for wiring. Includes termination, patch panel, testing and so forth. Labor is all over the board, but the $450 usually includes labor and mounting the hardware. I do most of the final configurations and adoptions myself. I then estimate about $600 per AP per closet (x2), unless I'm quite sure of the equipment to be installed. If a controller is to be installed, $2000 is fair in my estimate. Per switch, if necessary, I estimate $1500 (x2). Fiber upgrade between closets at about $3000. I may estimate a UPS for $350 (x2) at each closet. Routers: $1000 per 100 Mbps seems to be the going rate which is fair. If a school would like 1Gbps, then they should expect to spend $10,000 on a router to perform the functionality which includes the advanced services.

If the FCC determines to move to a district-based budget, the number of classrooms and student ratio would be even greater, and therefore raising the floor to $22,000 would be more equitable for smaller schools.

FCC seeks comment on moving from a per-school or per-library budget to a per-district or per-system budget for category two services.

Nebraska schools support a district-based budget format to make better use of available funds. Large districts especially have developed centralized distributed networks that would benefit from the ability to leverage funds to meet infrastructure modernization and distribution of services more equitably. Some comments include:

From one of the largest districts in the state:

> I agree that district wide budgets and simplifying the budget process would be great

recommendations. The administration of the category 2 funds was intense and hard to manage. Any opportunity to improve this would be great!

From a suburban district:

I do know that we have plenty of money left on the table for some buildings that we just couldn't spend based on when we put equipment into those buildings or just based on the size. Being able to use those funds in another school that was over budget would also be nice.

Nebraska supports the FCC suggestion that a district-wide budget calculation would simplify the application process by eliminating the need for school districts to count part-time students as well as provide the flexibility to allocate funding as it sees fit.   As with Category 1 funding, NIFs and offices that are integral to the education process in schools and should be considered eligible for Category 2 funding. These locations utilize the same network infrastructure to conduct teaching, learning, and administration and are vulnerable to the same issues as classrooms. Similarly, rural districts often rely on regional or state-based network infrastructures for shared services at the Educational Service Unit (ESU) level or state level. The FCC may consider a method for districts to make no more than a fixed percentage of funds available to these agencies (state or regional ESUs) that are consortium BENs. Agencies that maintain SPIN status should not receive Category 2 funds.

The FCC may consider engaging State E-Rate Coordinators, who are committed to program integrity, as partners in eliminating waste, fraud, and abuse of E-Rate funds. In addition to providing state valid files confirming NSLP data, State Coordinators could provide verification of consortium status as well as school closure and consolidations. An update of districts (BENs) and member school entities as well as NIFs (ENs) is part of that valid file. State E-Rate Coordinators could be engaged to monitor for an unfair distribution of district funds. Districts may be required to submit a report or project document that identifies how funds or network services will be distributed and the equity of access that is intended.

Easing the equipment transfer rules within a district

Nebraska also agrees that whether or not the FCC chooses to move to district-wide budgets, easing the equipment transfer rules within a district makes sense. Districts should still retain equipment for a useful period of time and retain records as good practice.

Budget Calculations

Nebraska recommends that the five-year budget be based on the district population at the time that the budget cycle begins and that no calculation for inflation occur until the next five-year

budget cycle. Once a project to update facilities has been initiated, it should maintain the budget it starts with and not expect extreme changes in funds.

School districts tend to remain stable, and even if a school closes or it consolidates with another district, the number of students affected remains the same. In the case of consolidation, the budgets can be combined. If the students are split, a cost per student can be determined and the amount associated transferred to the new district associated with those students. The bottom line is, that students will be attending class in a district, in a school facility, and utilizing Category 1 and Category 2 services.

Application and Administration

One of the areas of most concern for Nebraska applicants is the application process and the timeliness of receiving funds for projects that rely on E-Rate support. In fact, technology coordinators reported that they were hesitant to apply for Category 2 funds as the receipt of those funds was not predictable and could cause hardship on the district. When asked for input on this topic, many district technology directors responded and supported or echoed the comments from these two technology directors:

Leonard Kwapnioski, Columbus Public Schools (CPS):
> Thanks for sending us this information. I think the biggest challenge for CPS/me has been the timeline of the approval/purchasing process. This year I filed as early as I could so I could completely update my Elementary network. I was approved around May 5th for my $315,000.00 project. If I wanted to get this network updated during the summer months because of the size and the equipment being replaced, it would require CPS to pay the entire bill and then file for reimbursement. I budgeted my 20% portion but the other was somewhat of a challenge but I was able to make it happen. Not sure others have the resources to do that. What I'm getting at is the July 1 - June 30 timelines. I would love to see a June 1 - May 31 fiscal year or have the option to order early without having to file a 472 to make summer projects like this happen without having to hire a contractor to complete in a short time-frame. Going down the contractor route reduces your means for product. USAC needs to understand that this is about student learning and being the least disruptive. Again, thanks for asking for input.

Cliff Huss, Fremont Public Schools:
> My frustration with the current system is time line. USAC puts a limited time line on us, the applicants, to get anything and everything done but there is no time line on their approval process. My Category 2 applications were submitted back at the beginning of March and still are in "Review". There is no indication as to when USAC will get around to approving the projects. There needs to be a reasonable timeline of approval by USAC of projects. I don't think they, USAC, realize we have to start the installation process in June to get everything ready by the end of July because school is starting the beginning of August now, as far as when teachers come back. USAC needs to have deadlines for when we submit a 471 and when it is approved. If the 471 is submitted by XX/XX/XXXX deadline then it is

guaranteed to be approved prior to June 1 and we can get our summer install on. Or maybe staggered deadlines that allow us to know that if we submit within a certain window then the approval for those projects will be by xx/xx/xxxx date. Otherwise when a district can't afford to go ahead with the project and apply for reimbursement, and has to sit on their thumbs and wait for USAC approval, then students suffer because the improvements won't be done.

Nebraska recommends that the FCC consider approving funding requests that span multiple years so that projects can be implemented in the most efficient times for such work to be done in school facilities. The FCC may consider approved multi-year funding requests for Category 2 to have the option of being encumbered for a maximum of time (at least 2 years) allowing schools time to initiate projects that may be delayed due to late FCDL approval. This would expand the timeframe under which projects can be started and alleviate the concern of districts being denied and unable to pay for installations that have begun in good faith. Such a change may also relieve the need for invoice extensions and appeals due to late completion of work by service providers.

Eligible Services and Category 2

The Eligible Services List (ESL) for Category 2 should be well defined in the services allowed. For example, there is often much trepidation from applicants that they will be denied because they did not specifically understand the basic vs. advanced firewall service. If firewall service is to be included, the elements that make it basic vs. advanced need to be identified so that applicants and vendors understand the differences and can made fundable decisions. The same is true for other ESL elements where the wording has been challenging to interpret. Solid definitions would also assist PIA reviews and increase funding commitments.

However, Nebraska technology coordinators and system engineers wish to advocate the FCC to adopt Advanced Firewall Services as an eligible service as well as other Cybersecurity measures. Several comments received echo these specifically:

Alex Wyatt <alex.wyatt@esu11.org>:
> It would be *great* if they could be used for cyber security! Even to the point of having an endpoint firewall/antivirus/web filter solution...That would let individual machine policies be managed centrally, off network as well as on. It might also be good to have support for training on things like KnowBe4, to help prevent users from being compromised.

Jamen Hall, ESU 6:
> I really like the idea of using cat 2 for cybersecurity! I think two areas that could help are cybersecurity awareness training and vulnerability assessment. 91% of security breaches start with a phishing email. We can (and do) spend a lot of money in K12 on antivirus, firewalls, and other security devices but if a user falls for a phishing email they bypass many of the security devices currently in place in schools today. I think funding for services such as Knowbe4 would be a great use of dollars to help train staff on cybersecurity awareness.

Examples of this. . . I usually have at least one staff member every week flag a legitimate phishing message that made it through the email and spam filters to their inbox. Properly trained staff can help create a "human" firewall to increase the security of our school networks.

I also think it would be great if cat 2 dollars could be used for vulnerability assessment. We currently pay a 3rd party to do weekly security scans against all public IPs of all schools in DVLG. Each week all DVLG schools receive a very nice email report that tells them what systems have either low, medium, high, or critical vulnerabilities exposed to the world. I think this is also a missing security piece in many K12 districts (although this past year many ESUs have started doing weekly vulnerability scans through DHS). Again, a good firewall or antivirus doesn't do much good if you have critical vulnerability exposed. The scanning we have implemented this past year through the DHS scans and through Tenable.io has greatly increased the security of our networks by identifying numerous systems with critical vulnerabilities that we were previously unaware of.

Nebraska schools have had several instances of ransomware and malware that have stopped teaching and learning from happening, costing districts extreme amounts of time and money to rectify. The effect of allowing schools to use Category 2 funds to enhance cybersecurity will have multiple benefits including, but not limited to, protecting endpoints from ransomware, eliminate phishing emails, and preventing malicious malware from entering school networks and costing thousands, if not hundreds of thousands, of dollars to recover. As schools become more digital, this issue becomes even more important. Protecting networks from loss of data and financial assets is a great value to schools that Category 2 can help to address. Again, some of these services are handled at the state network level or at a regional level. Being able to move Category 2 funds from schools to these support agencies will benefit all users of digital resources as well as effective and efficient us of E-Rate funds.

Conclusion:

Nebraska schools appreciate the opportunity to benefit from the E-rate program. The program provides opportunities for schools to integrate and utilize eligible services to meet the growing educational needs of teaching and learning in a digital world. As technology and needs change, the following recommendations to improve the process of utilizing Category 2 funds are provided from users, constituents, and participants in Nebraska:

- Continue the per student funding model. This allows all schools in the nation the opportunity to increase capacity.
- Implement a district-wide budget model, rather than individual school budgets, to eliminate the unpredictability of new construction, closures, or mergers and allows districts to plan for utilizing all funds in service of all teaching and learning.

- The FCC could consider a budget established at the beginning of a five-year period based on the District's total membership and eliminate the part-time student calculation. The five-year budget remains lump sum without changes due to membership or inflation costs for the five-year period. Rarely, if needed, budgets would be adjusted to account for mergers and closures by moving the funds with the students to the appropriate district billed entity.

- Consider approving funding requests that span multiple years so that projects can be implemented in timeframes best suited to upgrade facilities. Districts would provide a multi-year project proposal and submit purchase orders with a specific vendor and equipment or services identified, that have been duly selected in the 470 process. FRNs would encumbered funds for a minimum of 2 years on which invoicing would occur. This would alleviate invoice denials and the need for waivers and appeals.

- When a district has done its due diligence in its Form 470 selection, and ordered new infrastructure with vendor neutrality, consider allowing specific equipment requested in subsequent Category 2 requests from an approved pricing list that matches the district's standards. Example: If a business has installed a Panasonic phone system, it would not order Cisco phones to add to the system. They just won't work. The same is true for wireless access points and other controlled switches and network equipment in schools.

- Allow districts the flexibility to utilize a limited percentage of their Category 2 funds for regional or state level infrastructures.

- The Eligible Services List (ESL) for Category 2 should be well defined in the services allowed. For example, there is often much consternation from schools losing funds because they did not specifically understand the basic vs. advanced firewall service. If firewall service is to be included, the elements that make it basic vs. advanced need to be identified so that applicants and vendors understand the differences and can made fundable decisions. The same is true for other ESL elements where the wording has been challenging to interpret. Solid definitions would also assist PIA reviews and increase funding commitments.

- Malware, ransomware, phishing attempts, and such are a costly and time-consuming issues to mitigate, and school personnel with the knowledge and training needed to secure a network are not easily found in rural areas. Strong consideration needs to be given to include cybersecurity solutions as a Category 2 eligible service.

- The FCC may consider engaging State E-Rate Coordinators as partners in eliminating waste, fraud, and abuse of E-Rate funds. State Coordinators could provide verification of

consortium status, equitable distribution of funds, as well as school closure and consolidations.

Thank you for the opportunity to provide comments on Category 2 funding and possible improvements to the process that represent the information and input from several direct beneficiaries and users of the resources in Nebraska. We in Nebraska, would be happy to provided additional information the FCC requires to assist in its decision-making process.

Respectfully Submitted by:

/s/ Dean Folkers

Dean Folkers, Information Officer
Nebraska Department of Education
301 Centennial Mall S, PO Box 94987
Lincoln NE 68509-4987
402-471-4740
dean.folkers@nebraska.gov
August 29, 2019