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

In the Matter of	)	
	)	CC Docket No. 02-6
Schools and Libraries Universal Service	)	GN Docket No. 09-51
Support Mechanism	)	WC Docket No. 13-184
	)	

COMMENTS OF FUNDS FOR LEARNING, LLC
on the
DRAFT ELIGIBLE SERVICES LIST FOR SCHOOLS AND LIBRARIES UNIVERSAL SERVICE PROGRAM FOR FUNDING YEAR 2015

Funds For Learning ("FFL") is a national, E-rate-compliance consulting and web services firm. Our clients include some of the country's smallest and largest E-rate applicants. This gives us an excellent vantage point from which to observe how well the program is working and what needs fixing and what does not.

For the past 17 years, FFL has dedicated itself exclusively to the needs of E-rate stakeholders. That is why FFL developed and continues to improve E-rate Manager® ("ERM"), its online E-rate management and compliance service. ERM is the Swiss army knife for everything "E-rate." Its electronic tools and features enable users to perform a wide variety of E-rate-related tasks, such as preparing and filing E-rate applications and other forms, monitoring the status of applications and disbursements, and archiving documents and memoranda to ensure audit readiness. Now that the Commission has doubled the document retention requirement from five to ten years, ERM's electronic record keeping feature is going to be more important than ever.

In its E-rate Modernization Order, the Commission committed itself to electronic E-rate filing, to improved data collection, and to making more data publicly available. This is an important first step. We look forward to working closely with the Commission to seeing its electronic vision through to fruition. We look forward to the day when it will be just as easy to file an E-rate form online with USAC as it is today to file an income tax return that way with the IRS.

1. Scale Back Cost Allocation Requirements in the ESL and Elsewhere

The Commission Should Scale Back the Required Use of Cost Allocation Because it is a Confusing, Difficult, Arbitrary, Discriminatory, Incredibly Time-Consuming, and Oftentimes Contentious Process that is Ineffective as a Compliance Tool For the Most Part, Typically Costs Applicants Badly Needed Funding for No Good Reason, and is Squarely at Odds With the E-rate Modernization Order's Goal of Eliminating Unnecessary Program Complexity.

Cost Allocation Requirements Included in the Draft ESL

- *"Eligibility limitations for broadband internal connections - When eligible components have modules or features that are not eligible, (e.g., content filtering), the cost of the ineligible feature must be subtracted from the amount eligible for E-rate support. Similarly, if eligible components are used for both eligible and ineligible purposes, the cost of the ineligible portion of use must be cost allocated."*

- *"Wireless Internet access and mobile hotspot service plans for portable devices are eligible if used for educational purposes and cost effective as required in FCC 14-99. Off-campus use, even if used for an educational purpose, is ineligible for support and must be cost allocated out of any funding request."*

- *"Upfront charges that are part of a managed service contract are eligible for E-rate support except to the extent that the upfront charges are for any ineligible internal connections components (e.g., content filtering) which, if included in the contract, must be cost allocated out of any funding request."*

"Cost allocation" is a well-intentioned administrative policy created long ago at a time when the Commission found itself shielding the E-rate program from a string of powerful attacks. The policy is based on a strict, overly literal reading of the rules that focuses laser-like on not funding anything even remotely or arguably ineligible, theoretically or otherwise. Presumably, it was designed to keep the critics of that era at bay.

Cost allocation may sound good in theory, but when applied in the real, complex world of procurement and commercial transactions, it is anything but that. Time after time, in our experience, the results of cost allocation ignore reality and defy common

sense. By casting such a wide net, cost allocation winds up ensnaring as many if not more dolphins than tuna. There is no doubt in our mind that, *in its current form*, the cost allocation policy does far more harm than good.

The advent of cost allocation triggered a tsunami of make-work, confusion and frustration that has been rolling and roiling along relentlessly ever since. To the utter dismay of virtually everyone, this over-exacting interpretation of the rules has become ingrained into the E-rate program's intricate DNA.

Modifying the E-rate program's DNA has been the goal of the modernization process since the beginning. If the Commission is truly interested in programmatic change at the molecular level – i.e., transforming the Schools and Libraries program into a broadband-only subsidy program that is compatible with 21st century broadband technology, less convoluted, and much more user-friendly -- now is the time to heave its cost allocation policy on to the reform table.

Briefly and very generally speaking, cost allocation works like this:

(A) if an applicant procures something eligible that happens to include "modules or features" that are ineligible, or
(B) if an applicant procures something eligible that will be used in part to do something ineligible, or
(C) if an applicant procures something eligible that is not going to be used one hundred percent of the time on school property, or
(D) if an applicant's student body includes even a handful of students, who that applicant's state does not happen to put a "K-12-Student" label on[1] ...

... then program rules require the applicant to manufacture some "reasonable" formula for allocating a portion of its E-rate funding to the ineligible service, location, use, or student. After that, the rules require the school to sacrifice however much funding their allocation methodology turned up. This is required, as we will discuss in more detail below, even if whatever is allegedly ineligible costs the applicant, and thus the program, nothing.

[1] In our opinion, one of the most egregious misuses of the cost allocation requirement, one that the E-rate program's basic rules, or certainly its underlying policies, do not support, is that eligible services be cost allocated to account for the presence in school buildings of allegedly ineligible pre-K and other ineligible groups – even when their presence does not increase costs. So far as the ESL is concerned, this kind of cost allocation is not an issue, so we are not going to address it here. But see, e.g., http://www.fundsforlearning.com/docs/2010/02/FFL%20Comments%20FCC-CIPA-NPRM.pdf

This process is many times arbitrary and frequently capricious. Among many other things, it requires speculation about usage and guesstimating component values. In addition, applicants are completely free to devise whatever cost allocation methodology they wish, so long as it is arguably "reasonable." Because of this, the amount of funding lost to cost allocation varies widely among applicants, even when their circumstances are virtually identical. Naturally, this gives applicants, who retain professionals to help them with cost allocation, a leg up on those who do not, as the professionals have the expertise, experience and time to craft formulas that will minimize how much funding their applicant clients will be forced to give up and to debate successfully the reasonableness of those formulas with USAC. The reality, therefore, is that the amount of funding that an applicant loses to cost allocation winds up, more often than the Commission apparently realizes or is willing to admit, a function of whether or not an applicant receives professional assistance, as opposed to how much genuine or theoretical ineligibility there may actually be.

As electronics become more and more sophisticated and their features and functionality become increasingly integrated, cost allocation is going to occupy more and more of everyone's valuable time – applicants', vendors', USAC's, and the Commission's – but time will not be the policy's only victim. The result will be more and more discrimination against forward-thinking applicants who want to make the most cost-effective and intelligent networking decisions they can.

Here is an example. A school district posts a Form 470 for a router and receives back two bids; router #1 is a model that can only perform eligible functions; router #2 is a model from a different manufacturer that not only performs eligible functions, but comes integrated with network security features to boot; the price is <u>exactly the same</u> for both routers; since the prices are the same and the model with the integrated features will reduce the school district's LAN and WLAN operating costs and make its network more secure, naturally the applicant contracts to purchase router #2. No matter how the school district looks at it, router #2 is unquestionably the better deal and undoubtedly makes the most sense – at least, that is, until the impact of E-rate discounts on the purchase price is taken into account.

Because router #2 includes ineligible, network security features, the cost allocation rules will apply to it. This will involve figuring out some cost to assign to the security features (which more than likely will require seeking help from the vendor who in turn may have to contact the manufacturer who may or may not be able to provide any reasonably useful information), deducting that amount from the routers pre-discount cost, and then applying the school district's E-rate discount rate to whatever the reduced amount turns out to be. After that, router #2 will cost more than router #1, because the

lower pre-discount cost of router #2 means that the school district would receive a smaller E-rate subsidy on it than it would on router #1.

So there it is – competitive bidding, two routers, exact same price, one clearly makes more sense to purchase than the other; however, the cost allocation rules artificially increase the net cost of the smarter choice, ultimately making it the more expensive of the two.

And here is the problem – "cost allocation" in its present form is a difficult, time-consuming process that tends to discriminate against intelligent, technologically forward thinking, cost-effective decision-making. It penalizes applicants for choosing -- at no additional cost to the E-rate program – some of the most cost effective, advanced, future-proof LAN and WLAN equipment available on the market today. The Commission needs to do what it can, as soon as it can, to get ahead of the curve, because this issue is not going away. Indeed, it is only going to rear its ugly head more often as network electronics manufacturers increasingly compete for sales and market share by building highly integrated products designed specifically to reduce network cost and complexity.

As a prophylactic policy designed to protect the E-rate program, cost allocation in many respects resembles many of TSA's security screening procedures, which create the perception of security, rather than security itself. Cost allocation may appear to be protecting program resources and integrity, but in reality it does precious little in that regard. If an eligible service or piece of equipment, procured in compliance with program rules, is going to cost the same amount of money, whether there are ineligible features or uses involved or not, no cost allocation should be required. Cost allocation rules should apply only when there is objective evidence to show that ineligible functionality or use will result in more than a *de minimis* price increase for the equipment or service.

Cost allocation in its current form is an anachronism, a policy remnant from an earlier, darker, E-rate time. It is the poster child for everything that people find so maddening, difficult and frustrating about the program. And further, it is inconsistent with what the Commission, in its E-rate Modernization Order, made quite plain it wants to see accomplished – namely, network infrastructure in every school and library capable of handling high-speed broadband connectivity effectively. Cost allocation is an unnecessary administrative hurdle standing in the path to that goal.

For all of these very good reasons, we urge the Commission to take a long and very hard look at its cost allocation policies, beginning first with those articulated in the draft ESL, and moving on from there.

2. <u>DHCP and DNS are Eligible Internal Connections Services in Category Two.</u>

DHCP and DNS Software/Servers Were Eliminated by Mistake From the Draft ESL's List of Eligible Internal Connections. DHCP and DNS are Eligible Internal Connections Services in Category Two Because They are "necessary to bring broadband into, and provide it throughout, schools and libraries."

This is how the draft ESL defines "eligible" internal connections:

> *"Category Two support is limited to the internal connections equipment or services necessary to bring broadband into, and provide it throughout, schools and libraries."*

And this is how the FY 2014 ESL defines DHCP and DNS, which explains clearly why they are necessary for moving all of the information rides on broadband into and around school and library buildings, and thus eligible internal connections:

> *"Standard networks need each computer to have a unique address for communication to occur. Dynamic Host Configuration Protocol (DHCP) is a system that provides this unique address from a central computer so that each individual computer does not need to be separately configured."*
>
> *"Domain names, such as www.fcc.gov, are alphabetic, so they are easier to remember than the IP addresses on which the Internet is based. A Domain Name Service translates the alphabetical names input by users into the IP addresses used by Internet devices."*

When we asked our own highly experienced network engineers, who are responsible for keeping Funds For Learning's multi-state network up and running, what a network needs to bring bandwidth into a building and distribute it throughout that building, this is what they said:

> To access the Internet there are several services that we would put in the "required for proper functioning" category. These services may be hosted on one or more individual servers, or possibly on a single device that provides multiple services. These are DHCP, DNS, firewall and directory services.

DHCP. At a minimum you would need DHCP service to provide IP addresses to devices that connect to the internal network. In theory you could assign addresses manually, but that would require someone with the knowledge of how to set that up, and is untenable for all but the smallest networks. This service may run on a device like a router, or is often hosted on servers that also provide DNS and directory services. DHCP also assigns DNS server and gateway (router) addresses to each client.

DNS service. While there are Internet based services, this is typically hosted internally on one or more internal servers. Without DNS, clients would not be able to access services/content on the Internet unless the user happens to know the IP address of the remote site. Hosting DNS internally also makes sense due to the fact that DNS query results are cached on the server(s) and used for subsequent requests for the same resource. This provides faster responses for the clients and also reduces network bandwidth usage.

Firewall. A firewall typically provides translation between IP addresses provided by an ISP and the IP addresses that are used as part of an internal addressing scheme. It also is used to allow or deny internet traffic by port (i.e. types of services such as e-mail, web server requests, etc.). It plays a vital part in making sure that responses to internet requests are routed properly back to the machines that made the original requests.

Directory Services. Another service that is commonly used is directory services like Active Directory and LDAP which are used to authenticate users and allow access to devices and network resources. This is also often used to provide authentication/access to wireless networks as well (RADIUS server/service). Without RADIUS, limiting access to wireless networks would require pre-shared keys (passwords) or some type of web-based authentication.

On a simple network, like a home network, these services are typically performed by the same router which also provides firewall functionality and wireless networking. A single, multi-function router is not going to work well for a large school district or library system with thousands, or tens of thousands, of clients at multiple locations. These systems will use several servers dedicated to performing these critical services.

Obviously, DHCP and DNS satisfy the criteria for Category Two eligibility. Does UPS equipment? In contrast to DHCP and DNS, which enable networks to operate, let's take a quick look at UPS equipment, which does not. Every network needs and should have electrical backup, but electrical backup is not necessary to bring and provide broadband anywhere. Nevertheless, the draft ESL continues to list "Uninterruptible Power Supply (UPS)/Battery Backup" as eligible. What happened to DHCP and DNS?

If you ask anyone to list the electronic tools that make networking possible, we guarantee that DHCP and DNS software, along with the servers that enable that software to operate, would be on their list -- but somehow DHCP and DNS servers managed to wind up on the draft ESL's cutting room floor. Since UPS equipment is not actually necessary to bring broadband into, and provide it throughout, schools and libraries, but DHCP and DNS servers are, we have to assume that DHCP and DNS servers were left off the Category Two internal connections list by mistake. The FY2015 Category Two list should include DHCP and DNS infrastructure and/or services.

3. <u>Allow Funding to Vendors Who Install, But Do Not Supply, Eligible Equipment.</u>

The draft ESL proposes removing certain language from the ESL to make it clear that E-rate funding for the installation of eligible equipment is eligible, whether or not the vendor installing the equipment also supplied the equipment:

> *"The proposed ESL removes phrasing from the "Installation, activation, and initial configuration" description indicating that installation must be part of a contract or bid for the components. As suggested by commenters from prior proceedings, schools and libraries, especially rural schools and libraries that do not have local or regional equipment manufacturers that both sell networking equipment and perform installation, may need flexibility to contract with local firms to provide installation as part of a contract that is separate from the equipment. We seek comment on this change to allow E-rate funding for installation from vendors that do not supply the eligible equipment to be installed."*

We support one hundred percent the Commission's decision in this regard. For what it's worth, however, we do not agree that it actually is a change.

Eleven months ago, Funds For Learning prepared and filed a Request for Review or Waiver on behalf of Montgomery County Public Schools asking the Commission to reverse USAC's decision not to fund the school district's request for discounts on the cost of installing wireless infrastructure <u>solely because the vendor who installed the infrastructure was different from the vendor who supplied it.</u> For purposes of the Commission's request for comments here, we direct the Commission to the school district's Request for Review – http://apps.fcc.gov/ecfs/comment/view?id=6017468284 – inasmuch as the discussion there is directly on point.

Among many other things, the school district argued that SECA's contention in its FY2013 ESL comments – i.e., that it was never the Commission's intent not to fund equipment installation from a vendor simply because the installation vendor did not sell the equipment to the applicant too -- was correct; that no rule, regulation or statute should ever be interpreted or applied in a fashion that produced illogical results, which was, unfortunately, exactly what was happening there; and that the rule, as USAC was trying to apply it, punished applicants for trying to contract for equipment and installation as cost effectively as they possibly could.

We support the Commission's proposed change for all of the reasons set forth and discussed in detail in Montgomery County Public School's Request for Review or Waiver and, in view of this proposed "change" to the ESL, request that the Commission grant the School District's Request for Review or Waiver as quickly as possible.

4. Caching Servers/Software and Caching as a Service Should be Eligible.

Thirteen Years Ago, in a Request for Review, we argued that Caching Servers "are Absolutely Necessary to Transport Information, Especially High-Bandwidth Information, to the Classroom."

This year, finally, the Commission has proposed that caching be eligible for E-rate support:

> *"Pursuant to the E-rate Modernization Order, the proposed ESL also includes caching as an eligible broadband internal connections component. As directed by the commission, we seek comment on how to define caching, including comment on the necessary software or equipment the E-rate program should support as part of supporting caching, such as caching servers, and on whether the program should support caching as a service."*

In 2001, one of our school district clients requested E-rate discounts on caching servers. USAC denied it. On our client's behalf, we prepared and filed a Request for Review. It was denied. We filed a Request for Reconsideration. It was denied. We filed a Petition for Reconsideration. We have never seen a decision. We believe, to the best of our knowledge, that it is still pending before the full Commission. *See* Petition for Reconsideration of the Decision of the Administrator by Prince George's County Schools (June 12, 2002), http://fjallfoss.fcc.gov/ecfs2/comment/view?id=5508349393.

Vindication after all of these years is nice, but the school district has been short-changed, literally. Since the school district was correct all along, it seems to us that the

"right" thing to do would be to fund its request for discounts on caching servers now, either by granting the request for review or by granting a waiver.

In the "Caching Server" appeals that we prepared there is a wealth of information on the subject of caching. In the attachments, there are two, extremely comprehensive articles, one from Intel and the other from Dell. They can be found in the Petition for Reconsideration, as it appears on the Commission's website, at pages 18 - 27 and pages 29 -38, respectively. We are confident that this information will be useful to the Commission as it goes about preparing its final rules on caching.

Respectfully submitted,

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