Before the
Federal Communications Commission
Washington DC 20554

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

COMMENTS OF INFINITY COMMUNICATIONS AND CONSULTING
ON THE CATEGORY TWO NPRM

Infinity Communications & Consulting, Inc. (Infinity) is an E-Rate consultant located in Bakersfield, California, representing more than 300 E-Rate applicants in eight states. We also design technology systems, including all current E-Rate Category One and Category Two eligible services. In the 16 years Infinity has been in business, we have designed hundreds, if not thousands, of systems eligible for Category Two funding. With this background in mind, Infinity submits the following comments on the Commission's Notice of Proposed Rulemaking regarding the Category Two budget approach.[1]

In these comments, Infinity supports the Commission's proposed permanent extension of the Category Two budgeting approach adopted in 2014. Infinity also supports moving from a per-entity budget to a district-wide budget, which will help E-Rate applicants manage their Category Two budgets more efficiently. Infinity suggests some ideas on how to simplify the budget calculations and recommends that the Category Two budget be raised to $300 per student for school districts, to $5.00 per square foot for libraries, and that the minimum per building budget be raised to $25,000. Infinity recommends that advanced firewall and security devises, DHCP & DNS servers, and VOIP equipment be added to the Eligible Services List. Lastly,

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Infinity recommends that the Commission not allow the Form 471 filing window to open until the rule changes proposed in the *Notice* have been adopted, published in the Federal Register, and have been in effect for at least four months.

A. THE COMMISSION SHOULD PERMANENTLY EXTEND THE CATEGORY TWO BUDGET APPROACH

Infinity supports the Commission's proposal to make permanent the five-year budget approach for Category Two services, rather than revert back to the former two-in-five approach.[2] We believe moving away from the two-in-five rule, which prioritized funding for the highest discount applicants, in favor of the new five-year budget approach, has been a tremendous success. Under the current approach, more applicants, no matter their discount rate, have been able to request and use Category Two funding. Infinity believes that the benefits of the current approach outweigh any potential burdens. Accordingly, Infinity urges the Commission to adopt its proposal and make the five-year budget approach permanent.

B. THE COMMISSION SHOULD ADOPT CERTAIN IMPROVEMENTS TO THE CATEGORY TWO BUDGET APPROACH

While Infinity strongly supports making the five-year budget approach permanent, we do recommend a few ways that the Commission can improve and strengthen the budget approach.

Increase Budget Levels. The Commission proposes to maintain the existing budget multipliers for Category Two services and seeks comment on this proposal.[3] Infinity strenuously disagrees with this proposal, and with the Wireline Competition Bureau's conclusion that current funding levels are sufficient.

As noted above, Infinity is a technology design firm, and we have designed hundreds and hundreds of Local Area Network and wireless systems. In our experience, it is impossible to

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[2] *Id.* ¶¶ 14-16.

[3] *Id.* ¶¶ 19-21.

design and install a complete system for the current budget of $150 per student for schools. A complete system includes conduit, trenching, raceway systems, fiber and copper cabling, racks, routers, switches, servers (which are currently ineligible), uninterrupted power supplies (UPS), wireless access antennas, wireless controllers, installation, taxes, and licensing. While basing a budget on the number of students or library patrons is not the best way to calculate costs, in our experience the actual cost of installation is closer to $300 per student. See the examples below of actual E-Rate projects that were funded and completed in recent years:

1. Taft Union High School District – Because parts of the campus are more than 100 years old with 2-foot poured concrete walls and no useable conduit that could be reused, the cost to install a new Wireless LAN system including new conduit, raceway systems, fiber optic and Cat 6 copper cabling, wireless electronics, installation and licensing was $1,692.21 per student.

2. Fruitvale School District (Single Site) – While the District desperately needed new cabling and wireless LAN equipment, they could only install the cabling portion because the cost of the cabling system ended up bidding at $352.11 per student and they did not have the additional budget for the network electronics.

3. Salinas City School District (Single Site) – Because the District had other funding sources (bond monies) to supplement what E-Rate did not cover, they installed a complete system including cabling and network electronics. Total cost per student - $776.11.

4. Wilsona School District (Single Site) – The District needed to install new conduit, cabling and network electronics but the budget for the project was $700.00+ per student so they only did cabling. Cost per student - $295.94

5. Riverbend Elementary School (Single Site) – While the District wanted to install new cabling and network electronics to every classroom at the school, because they were

already over their E-Rate budget, they were only able to install cabling and network

electronics into their computer labs, not all classrooms. Total cost per student - $304.64

Bear in mind, all of these projects were competitively bid and received multiple bids for each

project and the Applicants selected the lowest responsive and responsible bidder.

Why would we recommend only $300 per student when, clearly, the actual cost is much

higher? Because, we believe, many sites have partially installed systems that won't need to be

upgraded in the next five years. Some may only need cabling and others may only need

electronics. And, if the FCC allows applicants to determine how to best use their funding by

moving from a per-entity to a per-district funding model, there will be some flexibility to use the

monies more efficiently once the new budget is set.

Granted, new conduit, trenching, raceway and cabling systems do not need to be installed

as often as network electronics but, at the current speeds that these networks need to run, most

fiber optic and copper cabling that was installed 10 or more years ago does not work in today's

environments. To be clear, increasing Category Two budgets will not lead to "gold-plated"

systems. Rather, doubling the per-student budget will merely be enough to cover the actual and

true cost to install a complete and operable system.

Infinity believes that the Bureau likely based its conclusion that $150 per student budget

was adequate on a review of data pulled from FCC Form 471 applications that were approved

during the past four years. But it is important to note that the amount of Category Two funding

that has been **_requested_** is not the same as the amount of Category Two funding that is **_needed_**.

Because USAC staff told applicants not to request Category Two funding on their applications

that was more than their budgets would allow, the Bureau never saw the actual cost of these

systems. In other words, USAC's guidance deflated the amount of requested funding for

Category Two services and equipment, as applicants faced the reality that their actual needs

would not be funded in full. Thus, to the extent that the Bureau relied on Form 471 data to

conclude that current budget limits were adequate, that conclusion bears little resemblance to what schools and libraries actually need. If the Commission wants to fund Category Two services sufficient to the real-world needs of schools and libraries, it should double the per-student amount. For similar reasons, Infinity recommends that the Commission establish $5.00 per square foot as the budget for both rural and urban calculator for all libraries, not just urban ones for the same reason.

We find that most of our smallest schools, libraries and Head Start facilities are also in the most rural communities. It is impossible to install even the most bare bones wireless system in a facility for the current budgeted amount. We would recommend that a budget floor be increased from $9,200 (plus annual inflation adjustments) to $25,000 per entity (plus annual inflation adjustments) both for schools, libraries and Head Start facilities. Then, if the minimum floor for each system is $25,000, no matter if they are rural or urban, schools, libraries or Head Start facilities, it would much easier to manage and administer the program. We believe there is enough money in the program to cover the cost of this change.

Return to District-Wide or Library System-Wide Budget Calculations. The *Notice* sought comment on whether to replace the current, per-school/per-library budget approach with district-wide or system-wide budgeting for Category Two services.[4] While the per-entity approach may have been worth trying in order to make sure that no schools were excluded from receiving Category Two services, Infinity believes that per-entity budgeting has significantly increased the complexity and administration of the program. Infinity therefore urges the Commission to abandon the per-entity approach in favor of district-wide/system-wide Category Two budgets.

We believe it would be much easier and fairer, and would not cost any more, to allow each school district, library system, or Head Start program to receive a new five-year budget

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[4] *Notice* ¶¶ 22-27.

based upon the number of students they have in the entire district or system, and then allow them to allocate funding as needed based on their technology needs at each entity site. In our experience, schools and libraries can be trusted to allocate those funds equitably and responsibly to maximize technology opportunities for all their locations. In the 20-plus years we have been working with school and library applicants, we have never seen a case where a school or library administrator has "robbed Peter to pay Paul."

Furthermore, the per-entity approach does not consider that the actual cost of Category Two services varies widely from location to location, regardless of whether the number of students is the same. There are so many variables that affect installation costs, including whether a particular school or library needs new conduit, trenching, and wiring; do you have 1 building serving 500 students or 5 buildings serving 100 students each; whether a particular location may have newer equipment than another location; whether services are being installed in a new building or a building that is 200 years old; and how far a location is to the installation contractor. These and other factors cause costs to vary widely from one location to another, and a district- or system-wide approach gives school districts and library systems greater flexibility to allocate funding in a way that accommodates these variations in cost.

To give an example of why the current per-entity approach is problematic, imagine two schools, each with 500 students, so together they qualify for $150,000 in E-Rate funding for Category Two services. Under the current rules each site gets $75,000. But in the real world, it never happens that each bid will come in at $75,000. One might come in at $70,000 and the other $80,000, in which case one school would be fully funded with $5,000 unused, and the other school would have a $5,000 funding deficit. If, instead, these two schools qualify for $150,000 but that funding can be allocated as needed between the two sites, each site could be fully funded with no waste. In short, the district-wide approach is simply superior, and Infinity urges the Commission to adopt it.

The Commission seeks comment on how to best administer and provide budgets for school districts or library systems if the Commission returns to a district-wide budget system.[5] We feel the best way to determine the district or budget is to determine the number of students *who will be receiving Category Two services* in the upcoming five-year budget cycle and then fund that student count. That is, if a district has six of its own schools and two charter schools, and the district has determined that all eight schools need upgrades in the next budget cycle, then the district can establish the budget based on all of the students in the school district. But if the district determines that one of the charter schools will not need Category Two services in the next budget cycle, then the district would establish its budget based on the number of students in the remaining seven schools.

We recommend that once a budget is set for a school district or library system, the district or system will be required to live within that budget for the next five-year budget period. We do not believe the Commission should reduce a district's budget if a school closes during the five-year period because those students will still be in the district, just at another school.

As the Commission has suggested, we recommend providing some flexibility in giving districts the ability to move equipment from the closed school to the school where the student(s) will now be located.[6] It makes sense to ease the equipment transfer rules to accommodate this possibility. We also suggest one exception to the district-wide budget rule. Unless a school is currently under construction and it is known how many students will be occupying the school in the first year, it is almost impossible to adequately predict how many new schools (or libraries) may be constructed at the beginning of a new budget cycle. For that reason, we suggest that a district or a library system be permitted to request additional budget(s) for new schools or

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[5] *Id.* ¶ 25.

[6] *Id.* ¶ 27.

libraries that are built later in the five-year budget cycle. Schools and libraries would follow the same process as they do now when they are asking for Category One or Category Two services from USAC for a new school, library or Head Start facility that is under construction.

The Inflation Multiplier Should Be Rounded to Two Decimal Places. We agree with the Commission's suggestion that the inflation calculation be rounded to two decimal places for the Category Two multipliers beginning in funding year 2020.[7] This small change will make the calculations so much easier on both USAC staff and E-Rate applicants.

The Eligible Services List Should Be Modified. The Commission has requested comments on the Eligible Services list.[8] We also believe DHCP and DNS servers, advanced firewall and network security devices, and VOIP systems should be added to the Category Two portion of the Eligible Services list. For many years, DHCP and DNS servers were eligible for E-Rate funding and then they were taken off the Eligible Services list but an explanation for why was never provided. They are an integral and necessary component of a computer network system and we believe should be eligible for E-Rate funding. Since VOIP resides on a network just like a Wireless LAN system, and all Wireless LAN headend components are eligible for E-Rate funding, we think VOIP equipment should be eligible also.

While we assume this NPRM was referring to changes to only Category Two components of the Eligible Services list, we feel obligated also to mention that the vast majority of our school and library clients feel strongly that Category One VOIP services and redundant data circuits should be eligible for E-Rate discounts. A data circuit transmits ***voice***, video (audio/video) and data. So why should a VOIP system that resides on a data circuit not be eligible? You don't disallow the ***voice*** portion of an audio/video feed currently? Regarding

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[7] *Id.* ¶ 29.

[8] *Id.* ¶ 18.

redundant data circuits, now that we have transitioned to more and more cloud-based systems, online testing and an ever increasing amount of collaborative tools from the Internet, an applicant can't be down anymore, or instruction grinds to a halt. At a very minimum, if an applicant has a 1Gig circuit currently and wants to have a redundant or failover circuit in case of a network outage, if the FCC determines they can't fund 2-1Gig circuits for an applicant, at least let an applicant secure 2-1Gig circuits from two different Service Providers so that they have some failover if one of the circuits goes down and fund the full cost of both of these 1-Gig circuits. This should be a reasonable compromise.

C. TRANSITION TO PERMANENT EXTENSION OF CATEGORY TWO BUDGET APPROACH

The *Notice* seeks comment on how to ensure a smooth transition to the proposed permanent Category Two budget approach.[9] Infinity has two recommendations in this regard.

First, the *Notice* seeks comment on whether to start fresh in funding year 2020 and reset all applicant budgets.[10] Infinity believes that this is the right approach. Infinity recommends that all applicants get a new fixed budget starting in funding year 2020. It would eliminate the need to figure out how to deal with applicants that have not used all their funding from the previous budget cycle, which we believe would be difficult to administer without commensurate benefits.

Second, Infinity believes that there is a serious problem that, while not mentioned in the *Notice*, must be addressed before any new rules take effect. If the Commission adopts its proposed rules during the 2019 calendar year and make the changes effective starting in Funding Year 2020, many medium to large applicants will not have time to design and put out for bid a Category Two project and meet the normal Form 471 filing window (assuming that the window will be approximately 75 days starting in mid-January). Applicants do not have wireless projects

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[9] *Id.* ¶¶ 31-36.

[10] *Id.* ¶¶ 35.

already designed and ready to be put out today just waiting for funding. They cannot make a decision regarding a new Category Two project until they know how much E-Rate funding they will be receiving. For medium-sized applicants, it is not unusual to expend hundreds of hours designing and putting these projects out to bid. For large districts, if they do a district-wide E-Rate project, they and their consultants typically expend more than 1,000 hours.

Usually by now, many medium to large applicants would have already put out to bid their Category Two projects or would be in the final phase of design, knowing they had the remaining parts of their $150-per-student budgets to work with. This year, virtually 100 percent of our clients have told us that they cannot decide what projects they want to do for Funding Year 2020 until they know what the Funding Year 2020 budget per student will be. So, we are four to six months behind a normal schedule for designing these Category Two systems. While E-Rate applicants and their consultants will move heaven and earth to get their projects out to bid once the order and rules are released, a late-2019 notice date would place too big of a burden on these applicants. Infinity respectfully asks that the Commission consider the challenges of the funding year 2020 Form 471 filing window in relation to the effective date of any new rules and modify the filing calendar accordingly.

Accordingly, we ask that, once the new order and rules are released, the Commission either allow a longer Form 471 filing window (by at least four months) to apply for these Category Two projects, or delay the opening of the Form 471 filing window by four months after the new order and rules are released. Another alternative would be for the Commission to leave the Form 471 filing window as is for Category One services but make some special accommodations for Category Two projects. If the Commission declines to give Category Two projects additional time, then we recommend in the alternative that the Commission not start the new Category Two five-year budget cycle until funding year 2021 and allow applicants to use the last year of their current Category Two budgets, if they have any budget left.

Respectfully submitted,

/s/ Fred Brakeman

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August 16, 2019