

**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 BY RIVERSIDE COUNTY OFFICE OF EDUCATION
RELATED TO THE E-RATE 2.0 NOTICE OF PROPOSED RULEMAKING**

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Introduction:

The Riverside County Office of Education (RCOE) is a service agency supporting the county’s 23 school districts and linking them with the California Department of Education. RCOE services include administrative support to districts, programs for 35,000 preschool, special education, pregnant minor, correctional, migrant and vocational students, professional training, support and resources for teachers, administrators and staff.

The mission of the Riverside County Office of Education is to ensure the success of all students through extraordinary service, support, and partnerships. Our pledge which defines student success is stated as, "All students in Riverside County will graduate from high school well prepared for college and the workforce." The vision of the Riverside County Office of Education (RCOE) is to be a collaborative organization characterized by the highest quality employees providing leadership, programs and services to school districts, schools and students countywide.

On March 11, 1893, California Governor Henry Markham signed the bill that took 7,090 square miles from San Diego and San Bernardino counties – two counties in disagreement over many issues – to form the new County of Riverside. At that time, the superintendency remained an elected position, but the office was part of county government until it gained fiscal independence in 1975. The Riverside County Office of Education has nearly 1,700 employees working at offices in Riverside, Murrieta and Indio and with a budget of \$232 million.

Enrollment in Riverside County schools has surpassed more than 400,000 students at 434 sites under the jurisdiction of 23 local school districts. There are more than 24,500 full time and 33,000 part time teachers and other school employees working in Riverside County.

As part of its menu of services, Riverside County Office of Education provides Internet access to participating school districts and forwards all Internet traffic to K12-HSN/CENIC for which it has 2 node sites - one at Riverside and the other in Indio. As of September 13, 2013, peak Internet bandwidth utilized was 2.680 Gbps from all participating districts and our programs.

Riverside County Office of Education has participated in the E-Rate program since it began and appreciates the opportunities it has provided to our schools and school districts, and ultimately students in Riverside County. We also welcome the opportunity to participate in the Commission's NPRM proceeding, "Modernizing E-Rate Program for Schools and Libraries".

Connectivity Goals (§ 23-24) *More specifically, we seek comment on whether the SETDA targets are appropriate for all schools, or whether we should set some other minimum levels of broadband speed necessary to meet our proposed goal, and what those levels should be.*

In the opinion of staff at the Riverside COE: **NO**, the FCC should **NOT** adopt these goals based on the SETDA formula. Rather, empirical data for Riverside County suggests that a minimum Internet bandwidth of 2 to 2.5 the suggested minimum Internet bandwidth could be a suggested minimum per 1,000 students, with a goal of 10 Gbps WAN bandwidth by 2017. A hard and fast formula with no room for adaptive, agile maneuvering as actual patterns of use may demand is not indicated here. Flexibility in bandwidth consumption, especially as more students take to 1:1 devices is needed until a steady-state outlook emerges (which should be after the 2015-16 school year).

Here, Riverside COE uses detailed statistics on bandwidth utilization to provide you with facts. Also, we wish to advise you that as more and more schools are taking advantage of E-Books, streaming content, on-line learning programs (Renaissance Learning, Read 180, online credit recovery, virtual schools, etc.) and 1:1 initiatives in preparation for Smarter Balanced Assessments as well as Common Core standards, we have seen bandwidth utilization to the Internet jump explosively.

As historical context, we can state that in the 1998-99 timeframe, we aggregated all our users on a SMDS 45 Mbps Internet circuit which was roughly at 90% capacity utilization when it was replaced. Bandwidth demanded grew to OC-3 (192 Mbps with about 80% utilization) in 2002-2003 to 2x 1Gbps in 2004-05 at about a80% utilization, and now to 11 Gbps (at 2 locations from 2010-11), with peak Internet bandwidth utilization of 2.680 Gbps (24% of available bandwidth), and growing. Most of our school district goals of graduating students who are well prepared for the workforce require that access to the Internet to be woven into the curriculum.

For their own WAN as well as the Riverside County WAN needs, we are seeing districts installing 10 Gbps connectivity back to Riverside COE. One urban school district put in the functional equivalent of 63 Gbps circuits to us (53 x 1 Gbps and 1x10 Gbps connection). Another school district that serves exclusively high school students, went from a10 Mbps Internet bandwidth utilization to a current 130 Mbps in two years (from September 2011 to September 2013). A rural district went from a15 Mbps Internet bandwidth utilization to almost 320 Mbps in the same period. We are seeing ranges from a minimum of 3 times to a maximum of 20 times greater Internet bandwidth utilization across rural and urban school districts in the county during the same 24-month period.

Most schools are interpreting implementation of the Common Core standards to be both latency as well as bandwidth driven. While theoretical calculations may show 1 Gbps per 1,000 users by 2017 to be a valid goal, the number of concurrent users who demand close to zero latency may boost that number to several Gbps per 1,000 users. Beyond some acceptable number, both WAN as well as Internet bandwidth requirements may grow to absurd numbers in time. While we do realize that there are some technical and economy of scale techniques to "normalize" bandwidth, we feel that the proposed Internet connectivity goals, at a minimum, should be roughly 2 – 2.5 times the 2017 Internet connectivity goal. The WAN bandwidth goal of 10 Gbps per 1,000 users seems to be sufficient, all other factors remaining constant.

Our perspective is both from the aggregator of bandwidth on a county wide WAN as well as an Internet Service Provider and K12-HSN/CENIC node site.

Broadband Based Priorities (¶ 100): *We seek comment on whether we should make changes to the E-rate program to ensure that supported services are, at a minimum, used for the core purpose of educating students and serving library patrons. More specifically, we seek comment on whether we should allow a school or library to seek E-rate support for services that will be used only by school and library staff, administrators, or board members.*

YES, school administration and board members are very much part of the education system. While students and educators are directly served by the availability of circuits and access to the Internet, for regional entities, such as the County Office of Education, administrators add value to the educational process.

Examples include, but are not limited to assessing the effectiveness of teachers, piloting programs and watching results real-time, aggregating attendance data and reporting to the State, researching the latest in effective teaching and leadership techniques and holding in-services for teachers; in short improving the educational experience for students.

Similarly board members (who are very few in number, relative to the student population), will need occasional Internet access for reviewing board agenda and minutes as well as looking up CDE and other reports. They are stakeholders in the educational process by approving textbooks, electronic materials and the various program budgets. It is far more efficient to include all stakeholders in part of E-rate calculation than to cost allocate them out.

Most of what a regional entity, such as a County office does is not only to further the educational aspirations of the regular student population, but also that of the special needs children as well as Alternative Education based programs, Early Childhood Programs, CTE and numerous other programs that all benefit students. From the perspective of a county office, we strongly advocate that ALL stakeholders be allowed to seek E-rate support.

Need for more funding (¶ 174): *Should we instead consider a more permanent change to the cap to achieve the goals of a modern E-rate program? When the Commission adopted the \$2.25 billion cap 16 years ago, it recognized that it was a best efforts attempt to estimate what the demand would be for telecommunications and Internet access services by schools and libraries. Commenters advocating an increase in the cap emphasize that every funding year applicants have requested more than is available in E-rate support. They further argue that because of the effects of inflation and the growth in the number of students in our nation's schools, the actual purchasing power of the E-rate program declined by nearly one third from the start of the program in 1998 to today. We seek comment on these arguments.*

NO, we recommend that if at all there is a cap imposed, it be examined at least every 5 years. Currently, we feel that the present **cap is too low** especially in terms of connectivity, bandwidth and most importantly the funding of devices that make all this possible.

From the perspective of local schools, scattered all across the county (our Special Education, Alternative Education, Court Community Schools, Head Start/State Preschool programs and CTE programs are all considered schools operated by the county office), we face a huge hurdle in how they are connected. While we make the best use of the available bandwidth providers, we have to purchase Layer 3 devices at each site to allow traffic to be passed over our WAN.

The programs best serve students in their local areas or where common facilities exist with the Sheriff's department or in areas that are best served by county programs and not local school district programs. Because of this, we have to be at areas that we cannot piggyback off local networks, since these local networks (such as Sheriff's networks) do not allow us on their networks. Since there is a large geographical area at stake (over 7,090 square miles) we are at a significant disadvantage in provisioning access to these sites. If there were some consideration as to regional versus local programs and if one looked at how this county office, like quite a few do, provide service to students who are in danger of falling through the cracks or who are very severely disabled, then at this stage an increase in funding is needed.

When one looks at all the sites and their needs under the new Common Core, Smarter Balanced Assessments and Local Control Accountability and Progress/Local Control Funding Formula (LCAP/LCFF) [California law], we expect that we need more funding to purchase and service equipment. The equipment is for data, VoIP, teleconferencing and for connectivity back to our Regional Data Center for aggregation and connectivity to the Internet.

From the perspective of a regional service provider for the county operated programs mentioned above, we need more funding in order to serve the programs better. Our current E-rate discounts of around \$ 3.6 million, while very appreciated are not adequate for the County's needs.

Speedy Review of Applications, Commitment Decisions and Funding Disbursement (¶ 223): *Are there current cost-allocation challenges that impose undue burdens on applicants and on USAC that could be removed? For example, some states do not include preschool within their definition of elementary schools. In such states, preschool classrooms are therefore currently not eligible to receive support for E-rate services, even when those preschool classrooms are located within an elementary school building that otherwise receives E-rate supported services. As a result, in such states, applicants must cost-allocate the expenses for providing E-rate supported services to preschool classrooms, and exclude those expenses from requests for E-rate support.*

YES, there are undue burdens especially when we do calculations for discounts where there are Head Start/State Preschool programs at several locations. For example, for economies of scale, the County Office often locates such Early Childhood Educational (ECEP) Programs in structures that other programs such as Special Education, Alternative Education and CTE occupy. This arrangement lowers operating costs and consolidates facilities, yet we have to subtract out E-rate support for the ECEP programs.

There are also instances, where demographics are such that these ECEP programs are located in areas that we have to build networks to. Communication as well as device costs are a constant burden to us. We serve the needs of the entire county, as a county office.

From our role as a Regional Data Center operating as part of a County Office providing service to ECEP programs, we feel that we offer unparalleled economies of scale as well as bandwidth aggregation and transport for these programs, yet are penalized by the exclusion of such expenses from E-rate support calculations

Program Simplification (224): *Some applicants spend many hours not only filling out FCC forms and gathering required data, but also responding to questions from USAC and requests for additional information, including documentation. As a result, many applicants feel the need to hire consultants to handle these tasks. While consultant fees cannot be paid using E-rate funds, they are a cost to program participants, and therefore may reduce the net benefits that schools and libraries realize from participation in the E-rate program.*

We believe that our E-rate consultants are part of the standard operating costs. In an environment where the organization needs legal representation, educational consultants and other entities bringing expertise to a staff whose expertise is real Information Technology and not ever changing laws and audit methods under the E-Rate program.

As such, we believe that farming out E-Rate tasks to our trusted consultants relieves us from taking on these in addition to designing, creating, maintaining and replacing electronic systems, storage and connectivity – our core areas of expertise.

Our methods of connectivity range from leased fiber to MPLS based technology from established LECS at the transport level to BGP and OSPF based routing externally. The staff of 2 or 3 people that work on county wide (and this includes assisting school districts we server in addition to our own programs) network related issues in addition to other technologies, would be overwhelmed if they had to handle E-Rate funding requests, respond to questions from USAC, and respond to other requests.

If one considers efficiency, effectiveness and high rates of accuracy in fulfilling E-Rate tasks, the ROI in using our consultants is excellent. We have used the same consultant company for as long as we have participated in the

program, and they know our needs, our circuits and why we put in for them as well as audit our bills and keep documentation on behalf of us. In addition they also know some of the school district needs and are often the first to inform us as to long term plans for these districts, which we need for our purposes.

Addressing Changes to the National School Lunch Program (290): *Fourth, we seek comment on whether we should use direct certification data with a multiplier to determine a school's poverty level. Using only the direct certification poverty statistic without a multiplier as the basis for a CEO school's E-rate discount would tend to severely underreport a school's actual poverty statistic, because students at the reduced-price lunch status, along with some free lunch students, would not be included in the counts for determining the E-rate discount rate.*

YES, using direct certification **with a multiplier** will assist immensely. From our role as a Regional service provider, we use direct certification and this very severely under reports our actual poverty statistic. Our last year's E-rate discount was 52%, the highest it has been (averages over the past few years range from 48% to 52%). We feel that if there were a multiplier, our true E-rate discount would be in the order of 60-70% for the last few years.

At the Riverside COE, great care is given to the network planning and design process. Layer 2 and 3 switches are carefully chosen to take advantage of lifetime guarantees, configurations are generally standard at sites, such that very junior technicians can service devices; all devices have SNMP v2c reporting capability for centralized monitoring and switch modules also have PoE capability for provisioning VoIP/SIP telephony – all with direct dial numbers from the internal side.

We feel that addressing regional service provider considerations will maximize tax payer dollars. By Regional service providers, we mean that services such as ECEP, HS/SP, Alternative Education, Court Community Schools, CTE are provided by this County Office as well as the transport for WAN connectivity, phone capability and Internet capability are provided by the Regional Data Center the county office operates.

Extending the E-Rate Document Retention Requirements (295-297): *We propose to extend the E-rate program document retention requirements from five to at least ten years. We seek comments on the benefits and burdens of doing so.*

NO, we strongly feel that the FCC should not adopt this goal.

Currently it takes a business services technician, a department secretary, a document retention technician and an external electronic archival and retrieval company at least 8-16 hours a week keeping up with the document retention and destruction policies of the County Office. This includes all electronic telephone bills, contracts, services, invoices, payment records and other documents required by E-Rate.

In some time frame, IT is required to take all these processes in-house with the building of an electronic archiving system that models document retention policies laid out at design time. If such retention policies suddenly change the cost of storage (including near line storage for infrequently used documents) climbs; the cost of backups climbs; the size of the backup window shrinks as more and more services are backed up and finally, the capacity and cost of Disaster Recover (DR) systems skyrocket due to increasing document retention requirements.

One has to also factor in the increased cost of scanning in paper forms, processing of indexing keywords, running indexing activities and quality control before accepting the document as a "legally authentic and tamper proof one". The cost of such proposed goals does not double the present cost, but in calculated cases will go beyond 2.5 to 4 times the original, as a perturbation in one system requires increased capacity to licensing, backup capacity, indexing capacity and DR capacity.

In our opinion, we simply do not have the budget and manpower to do so.

Sincerely,

/s/

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