

**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)

**INITIAL COMMENTS OF THE STATE OF NEBRASKA, OFFICE OF THE CHIEF
INFORMATION OFFICER, IN RESPONSE TO THE WIRELINE COMPETITION BUREAU'S
PUBLIC NOTICE DA 14-308 OF MARCH 6, 2014**

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I. EXECUTIVE SUMMARY

The Nebraska Office of the Chief Information Officer (hereafter referred to as “Nebraska OCIO”) commends the Federal Communications Commission (hereafter referred to as “Commission”) for taking up the very important task of modernizing the E-rate program to further increase the availability and adoption of high-capacity broadband for the nation’s schools and libraries. The Nebraska OCIO recommends to the Commission that it:

- A. Focus the one-time \$2 billion of E-rate funding on new high bandwidth connections for schools and libraries and the internal wireless infrastructure;
- B. Reduce the list of eligible equipment under Priority 2 funding to those devices that are absolutely essential to delivering Internet and other digital resources to the classroom;
- C. Implement the “1 in X years” rotating eligibility model for Priority 2 funding, beginning with the 80% discount level in 2016-17;
- D. Not consider any form of formula-based, per-building or per-applicant distributions or annual allotment models;
- E. Create a new applicant category called “Network Consortium” that includes large-scale or statewide network consortia;
- F. Require a project plan from entities applying for Priority 2 funding;
- G. Modify the Form 471 Item 21 Attachment to collect specific cost and bandwidth data from each eligible participant;
- H. Retain support for voice services, but that if discontinuation is necessary, that it occur over a period of time to allow schools and libraries to adjust their budgets;
- I. Consider the Nebraska OCIO Demonstration Project proposal for possible implementation.

II. INTRODUCTION

- A. The Nebraska OCIO submits the following comments in response to the Commission’s Public Notice to modernize the E-rate Program for Schools and Libraries.
- B. The Nebraska OCIO, in preparation of these comments, reviewed the Telecommunications Act of 1996, relative to the E-rate program. This review not only helped guide these submitted comments and recommendations but also revealed that the E-rate program may have gradually strayed from the fundamentals of the original law, which states that “Elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services as described in subsection (h).” [PL 104 Sec 254(b)(6)].

Within the law, “Advanced telecommunications capability is defined, without regard to any transmission media or technology, **as high-speed, switched, broadband telecommunications capability** [*emphasis added*] that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.”

It is also worth noting that the law provides the definition of the term **telecommunications** as “the transmission, between or among points specified by the user, of information of the user’s choosing, without change in the form or content of the information as sent and received.”

One possible observation is that the E-rate program has experienced scope creep when it comes to Priority 1 service and now includes a variety of services that go beyond digital transmission service defined by law. This is without a doubt due to the well-intentioned desire of schools and libraries, as well as service providers, to find ways to fund services and systems that take full advantage of the E-rate program.

In the spirit of the program’s goal of providing advanced telecommunications services within the limitation of available funding, and in order for schools and libraries to have resources available for classroom technology, the Nebraska OCIO encourages the Commission to return the E-rate program to the original intent of the law.

In simplest terms, we submit that a **Priority 1 service does not create or store information**. It only provides the medium to transmit (receive/send) information— see *medium* defined below. Therefore, the Nebraska OCIO recommends retaining only the following as Priority 1 services:

- Digital transmission services (the medium over which it is carried is irrelevant, including dark fiber).
- Internet Access

[*Medium / Media*: Any form of transmission capacity used to carry signals including copper wire, coaxial cable, optical fiber, or wireless (radio/laser/microwave).]

As the following services do create and store information, the Nebraska OCIO suggests that these fall outside of the goal of “advanced telecommunications service” and therefore should not be eligible as Priority 1 services; neither do they qualify as Priority 2. They should be removed from the Eligible Services List or consideration as an eligible service altogether.

- Email Service
- VOIP
- Voice Mail
- Web Hosting
- Video Conferencing Equipment (codecs, etc)
- Any hosted service (circuits over which delivered are eligible, not the service)

These items recommended for removal are not true telecommunication services but rather applications that are used to transmit information over Priority 1 services. Email, Voice Mail, and Webhosting do create and store information. In addition, VOIP and video

conferencing are end user applications that use telecommunications services to transmit and/or store information. Indeed, these applications are examples of services that advanced telecommunications capability was intended to transport – not fund.

III. NETWORK NEBRASKA SUMMARY

A. The Nebraska OCIO was given administrative and management responsibility by the Nebraska State Legislature in 2006 to work in partnership with the University of Nebraska to develop and maintain a statewide, multipurpose, high capacity, scalable telecommunications network to be called **Network Nebraska**. “The network shall consist of contractual arrangements with providers to meet the demand of educational entities. The network shall provide access to a reliable and affordable infrastructure capable of carrying a spectrum of services and applications, including distance education, across the state. The Chief Information Officer shall aggregate demand for those state agencies and educational entities choosing to participate and shall reduce costs for participants whenever feasible. The Chief Information Officer shall establish a cost structure based on actual costs and shall charge participants according to such cost structure. The Chief Information Officer shall annually provide a detailed report of such costs to each participant and to the Legislative Fiscal Analyst.” (Neb. Rev. Stat. 86-5,100)

B. Since 2006, the Nebraska OCIO and the University of Nebraska have worked together to carry out the vision of the Legislature to create a single, statewide, IP-based network that interconnects K-12 school districts, educational service units, and higher education. On July 1, 2014, Network Nebraska will mark its 275th participant in this statewide consortium. Participation will include:

1. 235 of 250 public school districts (94%)
2. 17 of 17 Educational Service Units (100%)

3. 8 of 8 community colleges [including 2 tribal colleges] (100%)
4. 3 of 3 state colleges (100%)
5. 1 of 1 University of Nebraska (100%)
6. 7 of 14 private colleges (50%)
7. 6 of 213 private, denominational schools (3%)
8. 1 of 270 public libraries (.3%)

Network Nebraska-Education daily serves approximately 375,000 K-12 and higher education students, or about 95% of the state's public student population.

- C. The Nebraska OCIO is responsible for the E-rate filing on the statewide backbone and statewide Internet access for all of the eligible education entities, and based on the poverty and 'rurality' of the participants, has received an annual E-rate discount ranging from 68-70% on those services. The entities, themselves, are responsible for the E-rate filing on the Wide Area Network (WAN) circuits needed to reach the Network Nebraska-Education aggregation points.
- D. The Nebraska OCIO is also responsible for the aggregation of demand and procurement of the WAN circuits, statewide backbone circuits, and statewide Internet.
- E. Since the Nebraska OCIO has been entrusted since 2006 with the interconnection of schools and colleges to a single statewide network, and procurement of WAN circuits on their behalf, an additional 24 school districts have been connected with terrestrial optical fiber for the first time, so that an estimated total of 99.6% of Nebraska's 250 public school districts now are connected with scalable fiber telecommunications circuits. Actual building-level WAN data is currently being collected.
- F. Network Nebraska-Education is a Sponsored Education Group Participant (SEGP) of Internet2, and enjoys preferential Intranet routing and peering through the Great Plains Network (GPN) Gigapop in Kansas City. The cost for Commercial Peering Service Internet through the GPN is \$.25/Mbps/month but is non-E-rate eligible.

IV. FOCUSED FUNDING FOR HIGH-CAPACITY BROADBAND

- A. (PN ¶ 7) On the matter of redistributing \$2 billion of E-rate funding over the next two years to help support broadband networks in our nation’s schools and libraries, the Nebraska OCIO recommends funding for TWO high priority initiatives: 1) Support for non-recurring costs to connect any library or school building that does not already have access to scalable fiber or other high bandwidth technology; and 2) support for internal wireless infrastructure for schools and libraries. While Nebraska is “in pretty good shape” relative to its school district connectivity, we do have many areas of the State where only one provider exists, and monthly costs tend to be much higher where there is little or no competition. We also have school buildings and some school districts that are limited to 40Mbps bandwidth because the provider has not upgraded its infrastructure to serve 100Mbps or above. A great majority of Nebraska’s public libraries are on DSL or cable modem service and cannot afford faster Internet service, although the number of patrons’ wireless devices and laptop computers is proliferating.
- B. (PN ¶ 11) On the matter of deciding the appropriate equipment and software to bring broadband from the building’s front door (Priority 2 Funding), the Nebraska OCIO recommends limiting the eligible equipment to:
1. Routers, switches, or firewall appliances, up to one per building;
 2. Wireless Access Points, up to one per classroom, one or more per common area, and one per XXX square feet of library patron and staff space;
 3. Internal Cabling to interconnect classrooms and Wireless Access Points, up to four cabling drops per classroom or library room;
 4. The software to manage the edge devices and wireless access points.

It is incredibly important for the Commission to clearly delineate the types and numbers of eligible equipment to control the amount of funding originating from Priority 2 requests so that schools and libraries can reach a minimum equitable standard of supported connectivity.

- C. **(PN ¶ 12)** On the matter of deciding the eligibility of **other** services, software, or equipment necessary to enable high quality, high-capacity networks inside schools and libraries, the Nebraska OCIO recommends no additional support other than that detailed in Section IV. B. 1-4 above.
- D. **(PN ¶ 17-19)** On the matter of Rotating Eligibility of 1 in X years, as recommended by the State E-rate Coordinators Alliance (SECA), the Nebraska OCIO strongly supports the rotating eligibility of Priority 2 funding for all schools and libraries starting at the 80% discount level in 2016-17 (to allow time for competitive bidding), and continuing with lower discount rates until all interested schools and libraries have been funded, and then restart the rotation at the 90% discount level. Schools and libraries would be required to adhere to the eligible internal connections list, submit a project plan and budget, and then using a carryover funding approach, would have up to three years to expend and be reimbursed from their allocated funds. The Nebraska OCIO suggests the Commission consider a different application process to avoid project inflation and safeguard the Priority 2 funding program.

The Nebraska OCIO would advocate for leaving the discount matrix the same for both Priority 1 and Priority 2 discounts. Entities that are requesting Priority 2 funding for the first time will likely have ineligible expenses that may include electrical capacity, closet or data center related construction, or HVAC costs they will endure in order to

provide the high density, high capacity wireless networking to each classroom and common area.

E. **(PN ¶ 20-22)** On the matter of Annual Allocation for Internal Connections, the Nebraska OCIO does not support formula-based, per-building or per-applicant distributions or annual allotment models. The Nebraska OCIO suggests that such a system could increase the likelihood of fraud and mis-expenditure of funds, and also could fund services (and equipment) inconsistent with the original Telecommunications Act of 1996, as explained in I.B. above. Further, inasmuch as regional and statewide consortia have provided significant cost savings for school districts and libraries, no sufficient explanation has been presented as to how formula-based funding models apply to large-scale consortia, if at all.

F. **(PN ¶ 35)** On the matter of encouraging Consortium purchasing and bulk-buying, the Nebraska OCIO can readily demonstrate that large-scale, statewide consortia can achieve cost savings through bulk-buying. Over the past eight years, the Nebraska OCIO has been able to reduce the per Mbps (Megabit per second) cost of WAN circuits by 39% and the unit cost of commodity Internet by 99% through competitive bidding. These savings have been passed on to the consortium participants. The statewide Internet demand has increased ~100% each year for the past three years and the total statewide quantity of Internet to be purchased on 7/1/2014 will be at 20.9Gbps. The retail cost for Internet on the statewide contract has just decreased to \$1.275/Mbps/month for 7/1/2014 and the average post-discount cost for E-rate- eligible entities should be \$.3950/Mbps/month. The incentive to join or form a statewide or large-scale purchasing consortium should be the promise of lower costs derived from reaching economies of scale, and not require additional incentives provided through the E-rate program. It

should be noted that the formation of a multi-entity consortium does not, in itself, guarantee cost savings. In fact, many state networks that operate as competitive providers will include costs of doing business within their E-rate-eligible Internet unit cost, that is many times more expensive than a state network that “brokers” services and operates as “an applicant on behalf of” school districts. The Nebraska OCIO strongly urges the Commission to consider defining a “consortium” as an entity with statutory underpinnings and a vetted system of governance and public oversight. The Nebraska OCIO further urges the Commission to create a new classification of E-rate “Applicant” to be called “Network Consortium”.

G. **(PN ¶ 36)** On the matter of the Commission requiring technology planning to qualify for E-rate funding, the Nebraska OCIO recognizes the value derived from effective technology planning at the district and library level, and urges the Commission to require a detailed project plan be submitted that includes timelines for deployment and specific listings of Priority 2 eligible goods and services for the accountability and detail needed to safeguard Priority 2 funding.

H. **(PN ¶ 37)** On the matter of Data Collection and Transparency, the Nebraska OCIO previously recommended (NPRM, 9/16/2013) modification of the Form 471 Item 21 Attachment requiring from EACH applicant data that could be publicly published:

1. Circuit technology type (e.g. copper, fiber, fixed wireless, etc...)
2. Contracted capacity of the circuit (e.g. 100Mbps, 1,000Mbps, etc...)
3. Current bandwidth purchase (e.g. 80Mbps, 750Mbps, etc...)
4. Current monthly recurring cost (e.g. \$550/month, etc...)
5. Current cost in \$/Mbps/month (e.g. \$2.50/Mbps/month)
6. Name of provider
7. SPIN of provider
8. Circuit origination location by street address, city, state, zip +4
9. Circuit termination location by street address, city, state, zip +4

V. REDUCED SUPPORT FOR VOICE SERVICES

A. (PN ¶ 40-54) On the matter of reduced support for voice services, the Nebraska OCIO recommends retaining eligibility of voice services. VoIP technology is relatively expensive and rural locations may not be able to afford the expense to install and maintain such a system. Cellular service is also very intermittent in many rural locations. Communication between home and school is important. However, should the Commission determine to fund voice service at reduced levels, or phase out support of 1FBs and other voice-only services altogether, the Nebraska OCIO recommends that this occur over a determined period of time so that schools and libraries can redirect budgeted funds for these expenses.

VI. DEMONSTRATION PROJECTS (PN ¶ 55-62)

A. (PN ¶ 55-62) On the matter of well-defined, time-limited demonstration projects aimed at identifying and testing different approaches to meeting schools' and libraries' connectivity needs, the Nebraska OCIO proposes a demonstration project for the Commission's consideration.

B. The Nebraska OCIO commends the Commission for seeking comment on innovative approaches to encouraging efficiency in the E-rate program. The Nebraska OCIO wishes to propose a 3-year demonstration project for the Commission's consideration that could increase the level of broadband connectivity to rural libraries and also potentially lower their E-rate program costs. The Commission would be empowered to determine the scope of the demonstration project and also measure the effectiveness of the program by tracking the number of rural libraries that are converted to high bandwidth connections and then decide whether to continue or discontinue the project.

C. **Impetus.** In many states across the U.S., rural public libraries lack the necessary financial resources to establish and maintain their own high bandwidth broadband services and are confined to T-1, DSL or cable modem Internet service inadequate for the number of computers and wireless devices being supported. Coincidentally, in these same rural communities, a nearby public school district may be fiber-connected or have scalable broadband service at their disposal. Further, the peak periods of Internet demand are typically offset between the school district (8am-3:30pm) and the public library (3:30pm – closing). Incentivizing the school district and library to collaborate and form a “mini-consortium” with an increase in E-rate discounts could bring about expected and unexpected dividends.

D. **Project Description.** The Nebraska OCIO proposes that the Commission implement a 3-year demonstration project to incentivize school districts to connect public libraries to their district wide area networks (WANs) through any digital transmission service available (e.g. leased lit fiber, dark fiber, Ethernet over copper, fixed wireless, microwave, etc...) and to further consider the sharing of Internet, technical support and filtering services with public libraries. The E-rate program cost of this financial incentive offered to the consortium would be offset by the savings in the replacement of the library circuit and the elimination of the need for separate Internet access at the library. It should be noted that this demonstration project could operate in “reverse”—a fiber-connected library could interconnect a non-broadband school into its wide area network and be eligible for the heightened discount.

E. The project sequence would work like this:

1. School district and public library sign a memorandum of agreement;
2. School district files for “mini-consortium” status with USAC requesting a new Billed Entity Number;
3. Public Library arranges a scalable, point-to-point digital transmission service directly into the school or school district edge device with non-recurring costs being eligible for Priority 1 funding and possible additional federal support;
4. School district files a mini-consortium E-rate application for all eligible services and receives a 5% increase in discount applicable to all eligible services, not to exceed 90%;
5. School district agrees to share Internet, technical support, and filtering services with public library;
6. Commission measures the impact of the demonstration project by tracking the number of public libraries connected with higher bandwidth as a result of the demonstration project and the net cost of the demonstration project to the E-rate program.

F. If the demonstration project proves successful, the Commission could consider extension of the 3-year project to a longer period of time or make it a permanent provision within the E-rate program.

The Nebraska OCIO applauds the Commission for its efforts to ensure our nation's students receive access to the high-speed broadband connectivity and technology necessary for 21st century digital learning, and appreciates the Commission's review of our comments on this matter. If you have any questions, please contact Tom Rolfes, Education I.T. Manager at (402) 471-7969, tom.rolfes@nebraska.gov or SuAnn Witt, State E-rate Coordinator at (402) 471-2085, suann.witt@nebraska.gov.

Respectfully Submitted,

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