

**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, REGARDING NOTICE OF PROPOSED RULEMAKING**

TABLE OF CONTENTS

Heading

- I. INTRODUCTION
- II. EXECUTIVE SUMMARY
- III. GOALS AND MEASURES (NPRM ¶ 13-55)
- IV. ENSURING SCHOOLS AND LIBRARIES HAVE AFFORDABLE ACCESS TO 21ST CENTURY BROADBAND THAT SUPPORTS DIGITAL LEARNING (NPRM ¶ 56-176)
- V. MAXIMIZING THE COST EFFECTIVENESS OF E-RATE FUNDS (NPRM ¶ 177-223)
- VI. STREAMLINING THE ADMINISTRATION OF THE E-RATE PROGRAM (NPRM ¶ 224-269)
- VII. OTHER OUTSTANDING ISSUES (NPRM ¶ 270-329)

I. INTRODUCTION

- A. The State of Nebraska Office of the Chief Information Officer (OCIO) submits the following comments in response to the FCC’s Notice of Proposed Rulemaking to modernize the E-rate Program for Schools and Libraries.
- B. The State of 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)

- C. Since 2006, the 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, 2013, Network Nebraska marked its 261st participant in this statewide consortium. Participation now includes:
- a. 222 of 250 public school districts (89%)
 - b. 16 of 17 Educational Service Units (94%)
 - c. 8 of 8 community colleges [including 2 tribal colleges] (100%)
 - d. 3 of 3 state colleges (100%)
 - e. 1 of 1 University of Nebraska (100%)
 - f. 7 of 14 private colleges (50%)
 - g. 6 of 213 private, denominational schools (3%)
 - h. 1 of 270 public libraries (.3%)
- D. Network Nebraska-Education daily serves approximately 350,000 K-12 and higher education students, or about 93% of the state's public student population.
- E. The 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.
- F. The OCIO is also responsible for the aggregation of demand and procurement of the WAN circuits, statewide backbone circuits, and statewide Internet. Over the past seven years, the OCIO has been able to reduce the per Megabit per second (Mbps) cost of WAN circuits by 39% and the unit cost of commodity Internet by 98% through competitive bidding. These savings have been passed on to the consortium participants. The statewide Internet access has increased over 100% per year for the past two years and the total statewide quantity purchased is now at 10.7Gbps. The retail cost for Internet on the statewide contract is \$2.50/Mbps/month and the post-discount cost for E-rate eligible entities is \$.7750/Mbps/month.
- G. Since the OCIO had been entrusted 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 via terrestrial fiber, so that an estimated total of 99.6% of Nebraska's 250 public school districts now are connected with scalable fiber telecommunications circuits.
- H. 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.

II. EXECUTIVE SUMMARY

The Nebraska OCIO commends the 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. Restructure USAC data collection and reporting on connectivity type, bandwidth amount, cost, and vendor information to measure availability and affordability. **(NPRM ¶ 52-54)**
- B. Promote and support scalable, flexible and affordable fiber infrastructure solutions where it is feasible to meet current and future needs of schools and libraries. **(NPRM ¶ 67-70)**
- C. Promote and incentivize the use of statewide consortia applications. **(NPRM ¶ 179-185)**
- D. Recognize that statewide consortium networks use E-rate support to provide many varied services that assist schools and libraries in achieving the highest possible service level at the lowest possible cost. **(NPRM ¶ 186; 190; 28)**
- E. Include Internet2 or Research and Education network access, particularly Commercial Peering Service, as eligible E-rate services to improve the quality of connections. **(NPRM ¶ 18; 28; 248; USC 254 (b)(1))**
- F. Modernize the eligible services list to prioritize bandwidth capacity and classroom connections over all other services [i.e., digital transmission service, fiber and dark fiber service, fixed wireless access and Internet access]. **(NPRM ¶ 248-249)**

III. GOALS AND MEASURES

A. Ensuring Affordable Access to 21st Century Broadband (NPRM ¶ 17-40)

- a. (NPRM ¶23-27) On the matter of adopting the SETDA targets of 100Mbps per 1000 students by 2014-15 and 1000Mbps per 1000 students by 2017-18, the Nebraska OCIO observes that the SETDA targets are unsubstantiated with actual network data and research are therefore, without merit. Network Nebraska-Education's actual statewide Internet demand for 300,000 students is currently 39Mbps per 1000 students (10.7Gbps), and is increasing by about 100% (1X) per year. It is projected to reach 52Mbps per 1000 students in 2014-15. In order to achieve SETDA's target recommendations by 2017-18, Nebraska's total Internet demand would have to grow 30X (3000%) over the next four years to 300Gbps! Possible? Perhaps. Probable? Not in the least, and Nebraska has historically had one of the highest rates of classroom technology penetration. The SETDA broadband targets may be applicable to school districts that receive commodity Internet directly from an Internet Service Provider (ISP), but they are not appropriate for school districts that receive demonstrable network efficiencies when connected to a statewide network (See ¶ 190).
- b. (NPRM ¶29-39) On the matter of whether to measure the actual bandwidth delivered to schools, the Nebraska OCIO asserts that the measure of E-rate program achievement to each school should be whether scalable optical fiber exists to that school, and the capacity of the WAN circuit in Mbps/1000 students and to leave the level of purchased bandwidth up to the digital education needs within that school.

c. (NPRM ¶40) On the matter of Educational Impact Measurements, the Nebraska OCIO strongly recommends that the FCC not go down the path of connecting success in the classroom with E-rate funding or access to Internet services. Success in the classroom depends upon many factors and variables (e.g. pedagogy, teacher quality, class size, learning readiness, etc...), not the least of which is access to digital resources, which may or may not be transported via the Internet. The role of the FCC in the E-rate program, according to PL 104 Sec 254(h)(2)(a), is to establish competitively neutral rules to enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunications and information services for all public and nonprofit elementary and secondary school classrooms, health care providers, and libraries. Therefore, in the opinion of the Nebraska OCIO, it is not appropriate for the Commission to adopt educational-outcome measurements related to the E-rate program.

B. Maximizing Cost-Effectiveness (NPRM ¶ 41-44)

- a. (NPRM ¶ 41-42) On the matter of adopting the second goal of maximizing the cost-effectiveness of E-rate funds, the Nebraska OCIO strongly recommends that the Commission proceed with its adoption.
- b. (NPRM ¶ 43-44) On the matter of which performance measures the Commission should adopt to support the goal of maximizing the cost-effectiveness of purchases made using E-rate funds, the Nebraska OCIO strongly recommends that the Commission adopt the metric of Dollars per Megabit per second per month or \$/Mbps/month and require this data reporting on all Priority 1 Services that include digital transmission services and Internet access. This metric would

permit the Commission to measure and track the affordability of the advanced telecommunications over time.

C. Streamlining Administration of the Program (**NPRM ¶ 45-51**)

- a. (**NPRM ¶ 48**) On the matter of additional measurements the Commission should adopt to support the goal of streamlining the administration of the E-rate program, the Nebraska OCIO recommends that the Commission adopt the metric of “number of days elapsed between the date of the Form 471 filing and the date of the Funding Request Notification” for Consortium Applications and publicly publish such data.

D. Data Collection (**NPRM ¶ 52-55**)

- a. (**NPRM ¶ 53**) On the matter of specific form revisions the Nebraska OCIO recommends that the Commission modify the Form 471 Item 21 Attachment so that the form would require from the applicant the following data:
 - i. Circuit technology type (e.g. copper, fiber, fixed wireless, etc...)
 - ii. Contracted capacity of the circuit (e.g. 100Mbps, 1,000Mbps, etc...)
 - iii. Current bandwidth purchase (e.g. 80Mbps, 750Mbps, etc...)
 - iv. Current monthly recurring cost (e.g. \$550/month, etc...)
 - v. Current cost in \$/Mbps/month (e.g. \$2.50/Mbps/month)
 - vi. Name of provider
 - vii. SPIN of provider
 - viii. Circuit origination location by street address, city, state, zip +4
 - ix. Circuit termination location by street address, city, state, zip +4

IV. ENSURING SCHOOLS AND LIBRARIES HAVE AFFORDABLE ACCESS TO 21ST CENTURY BROADBAND THAT SUPPORTS DIGITAL LEARNING (**NPRM ¶ 56-176**)

- A. Focusing E-rate Funds on Supporting Broadband to and within Schools and Libraries (**NPRM ¶ 65-66**)

a. **(NPRM ¶ 65, 92-102)** On the matter of updating the eligible services list, the Nebraska OCIO recommends that the Commission eliminate non-broadband-related applications such as:

- i. E-mail Service
- ii. VOIP
- iii. Voicemail
- iv. Web Hosting

B. Funding for Broadband Connections (NPRM ¶ 67-89)

a. **(NPRM ¶ 67)** On the matter of the most efficient technological architectures that schools and libraries are likely to use for connectivity, the Nebraska OCIO finds that optical fiber is the most cost-effective and future-proof method of delivering high-capacity broadband to schools and libraries. Fixed wireless, if scalable above 100Mbps, is also acceptable if optical fiber is not feasible or proves to be cost-prohibitive.

C. Tightly Focusing the Eligible Services List (NPRM ¶ 103-110)

a. **(NPRM ¶ 104)** On the matter of SECA's proposal to limit the Priority Two eligible equipment, the Nebraska OCIO recommends that the Commission limit the Priority Two eligible equipment to include:

- i. Routers, switches, or firewall appliances, up to one per building
- ii. Wireless Access Points, up to one per classroom and one per common area
- iii. Internal Cabling, up to four cabling drops per classroom

D. Support Based on District-Wide Eligibility and Application by School District (NPRM ¶ 126-132)

a. **(NPRM ¶ 126-129)** On the matter of calculating the discount for supported services by using the average discount rate for the entire school district, the

Nebraska OCIO strongly recommends that the Commission adopt this proposal.

E. Setting Budgets or Limits (**NPRM ¶ 135-142**)

- a. (**NPRM ¶ 138**) On the matter of consideration of a more flexible per-student, per-building limit, or alternative forms of limits, the Nebraska OCIO strongly recommends that the Commission not adopt this methodology and retain the current model of awarding discounts per service requested. The alternative proposal has the potential to place rural, remotely located schools and libraries, and sparsely populated geographic areas at a distinct funding disadvantage.

F. More Equitable Access to Funding for Internal Broadband Connections (**NPRM ¶ 143-148**)

- a. (**NPRM ¶ 145**) On the matter of rescinding the priority two two-in-five rule in favor of SECA's proposal of a rolling funding cycle, the Nebraska OCIO strongly recommends that the Commission adopt the rolling funding cycle for all eligible entities, including core routing equipment for statewide consortia.
- b. (**NPRM ¶ 146**) On the matter of eliminating the distinction between priority one and priority two services, the Nebraska OCIO strongly recommends that the Commission NOT eliminate the distinction between priority one and two services.

V. MAXIMIZING THE COST EFFECTIVENESS OF E-RATE FUNDS (**NPRM ¶ 177-223**)

A. Increasing Consortium Purchasing (**NPRM ¶ 178-185**)

- a. (**NPRM ¶ 178, 185**) On the matter of cost-effective purchasing and consortium benefits, the Nebraska OCIO wishes to inform the Commission that consortium purchasing at the statewide level has successfully inspired competition, not

diminished competition in Nebraska's experience. By listing large numbers of school and library sites within a single RFP cycle, bidders are able to achieve a more efficient bid response by not having to replicate their legal terms and conditions and respond to multiple, locally driven RFPs. Another successful RFP technique that has been used by state consortium groups and state networks is to have potential providers bid "one, some or all" the number of sites and also allow the potential providers to select from multiple network aggregation points to accommodate their fiber topography. In this instance, the state network backbone performs the interconnections, once the network participant has reached the state backbone. This technique has the potential to stimulate additional competition and lower prices, particularly in rural areas.

B. Encouraging Other Types of Bulk Buying Opportunities (NPRM ¶ 186-190)

a. (NPRM ¶ 190) On the matter of lowering costs through aggregation of data, the Nebraska OCIO wishes to inform the Commission that there are many technological benefits and network efficiencies for schools and libraries that participate in statewide networks. Statewide networks utilize advanced networking and engineering to speed up the transport of data and reduce the reliance on commodity Internet. These techniques and strategies include, but are not limited to:

- i. Intranet routing
- ii. Caching servers
- iii. Commercial Peering Service
- iv. Shared backbone
- v. Traffic shaping

C. Broadband Planning and Use (NPRM ¶ 217-219)

- a. (NPRM ¶ 217) On the matter of broadband planning and use and appropriate technology planning, the Nebraska OCIO recommends that the Commission reinstate the Technology Plan requirement as a prerequisite for receiving E-rate discounts. Technology planning serves as part of the overall continuous improvement planning process (CIP), specifically aimed at the technology needs of the organization, and is used as part of documentation for accreditation. It is important to understand the current status of the organization in order to plan for improvements. (See <http://www.education.ne.gov/CIPToolkit/Technology/index.html> for more information.)

VI. STREAMLINING THE ADMINISTRATION OF THE E-RATE PROGRAM (NPRM ¶ 224-269)

A. Speeding Review of Applications, Commitment Decisions, and Funding Disbursement (NPRM ¶ 233-247)

- a. (NPRM ¶ 241, 243, 244) On the matter of contract term limitations, the Nebraska OCIO strongly recommends that the Commission not place any limits on the duration of locally procured telecommunications contracts and allow state consortia to comply with state and local purchasing policies to ensure the greatest amount of competition and lowest pricing possible. Many states employ a traditional term for telecommunications services (e.g. NEBRASKA--Four years for wide area network circuits and backbone circuits and three years for Internet access), coupled with up to three or four voluntary one-year extensions. The contract term should be long enough for the provider to recover its capital costs

and be assured of a multi-year service term, but not so long as to be bound to higher contract prices while more affordable market bid prices become available. In order to defend itself against rapidly changing market forces within medium-term state contracts, many state procurement agencies employ what is called a "Technology Refreshment Clause", that enables the agency to sit down with the contracted provider(s) and revisit the technology services and pricing at pre-determined time periods (e.g. every 18 months) within a contract term and require the contracted provider to extend the lowest corresponding price available at that time. These strategies and techniques have worked well for State Consortium Group procurements over time and the SECA SCG would like to continue to employ them in order to get the most competitive pricing and best service quality available for our E-rate-eligible schools and libraries.

VII. OTHER OUTSTANDING ISSUES (NPRM ¶ 270-329)

A. Extending the E-rate Document Retention Requirements (NPRM ¶ 295-297)

- a. (NPRM ¶ 295) On the matter of extending the E-rate program document retention requirements from five to at least ten years, the Nebraska OCIO strongly recommends that the Commission make no changes to the document retention schedule and retain the five-year requirement from the last date of service.

B. Documentation of Competitive Bidding (NPRM ¶ 298)

- a. (NPRM ¶ 298) On the matter of requiring submission of competitive bidding documents with their FCC Forms 471, the Nebraska OCIO strongly recommends that the Commission not adopt the additional document submission requirement.

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,

Brenda L. Decker
Chief Information Officer
State of Nebraska
501 S. 14th Street, P.O. Box 95045
Lincoln, NE 68509-5045
brenda.decker@nebraska.gov
(402) 471-3717