

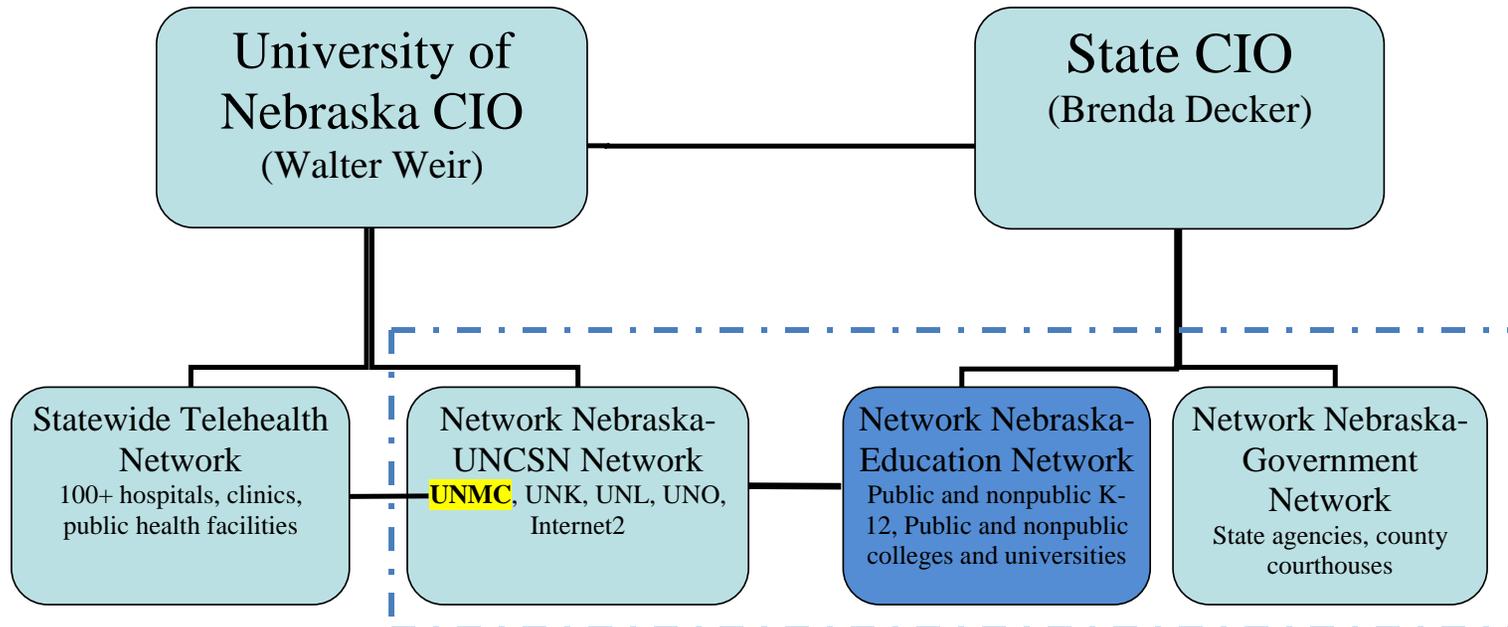


Talking Points

- Current Status
- Future trends/direction
- FCC E-rate Modernization
- State Purchasing RFPs—points to ponder



- (N.R.S. 86-5,100) The Chief Information Officer, in partnership with the University of Nebraska, shall 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 state agencies, local governments, and educational entities as defined in section 79-1201.01. *(LB 1208—2006 Session)* (“Network Nebraska” is shown inside the dotted lines)





K-12 networking, before and after LB 1208 (2006)

1992-2005

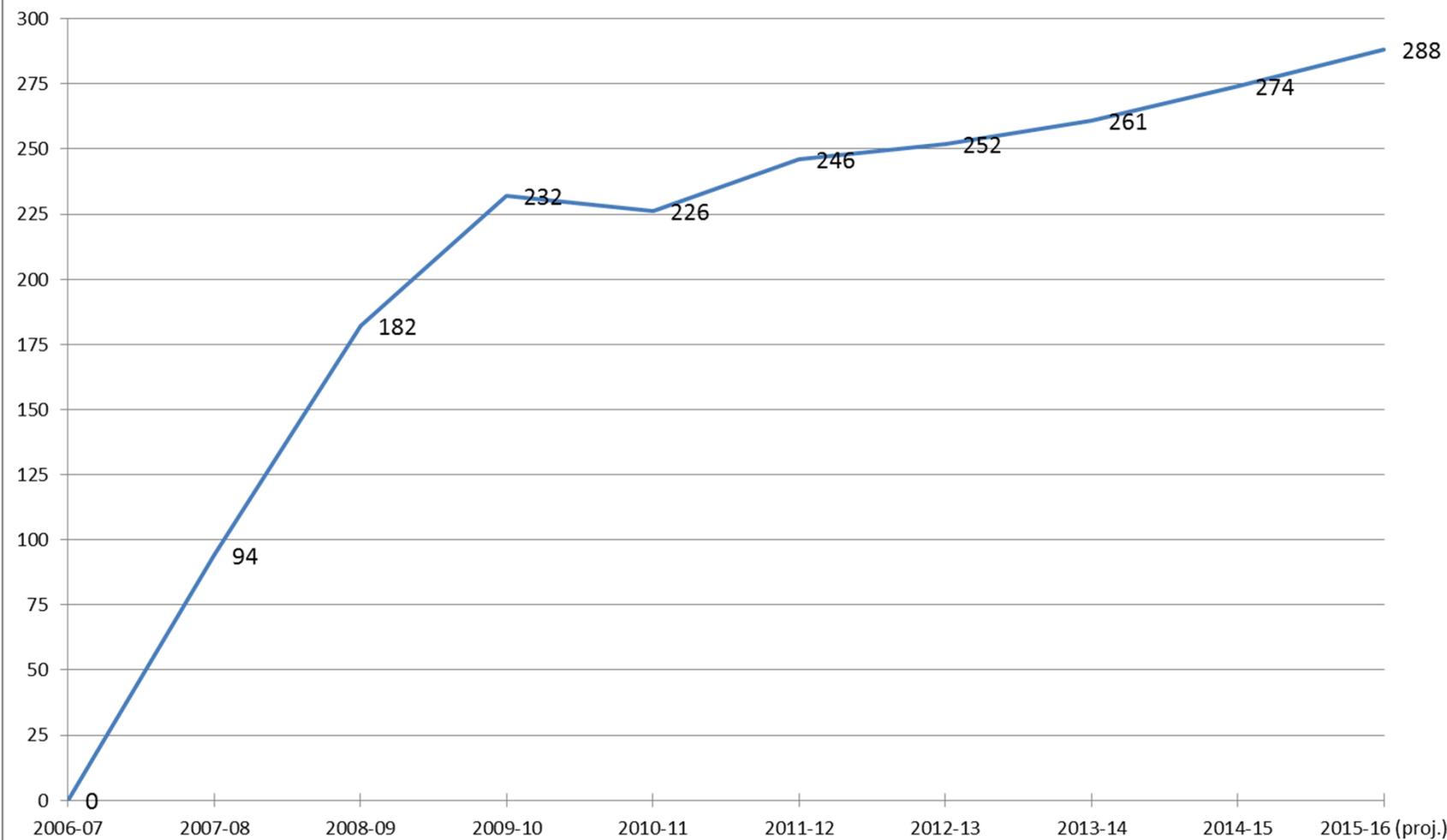
- 12 distance education consortia (“pods”)
- Analog & Motion JPEG DS-3s
- No backbone interconnects
- 1.5 – 3.0 Mbps Internet per school
- Fiber to 90% of districts

2006-present

- 1 distance education clearinghouse
- IP-based statewide network
- 1293-mile backbone
- Completely scalable Internet; total statewide purchase 25Gbps
- Fiber to 99.2% of districts



Network Nebraska-Education Membership by Year





- **Network Nebraska-Education
CURRENT Partners (274)**

- 232 public school districts (94%)
- 17 Educational Service Units (100%)
- 10 public colleges (100%)
- 2 tribal colleges (100%)
- 7 nonpublic colleges (50%)
- 3 nonpublic schools (3%)
- 1 public library (<1%)

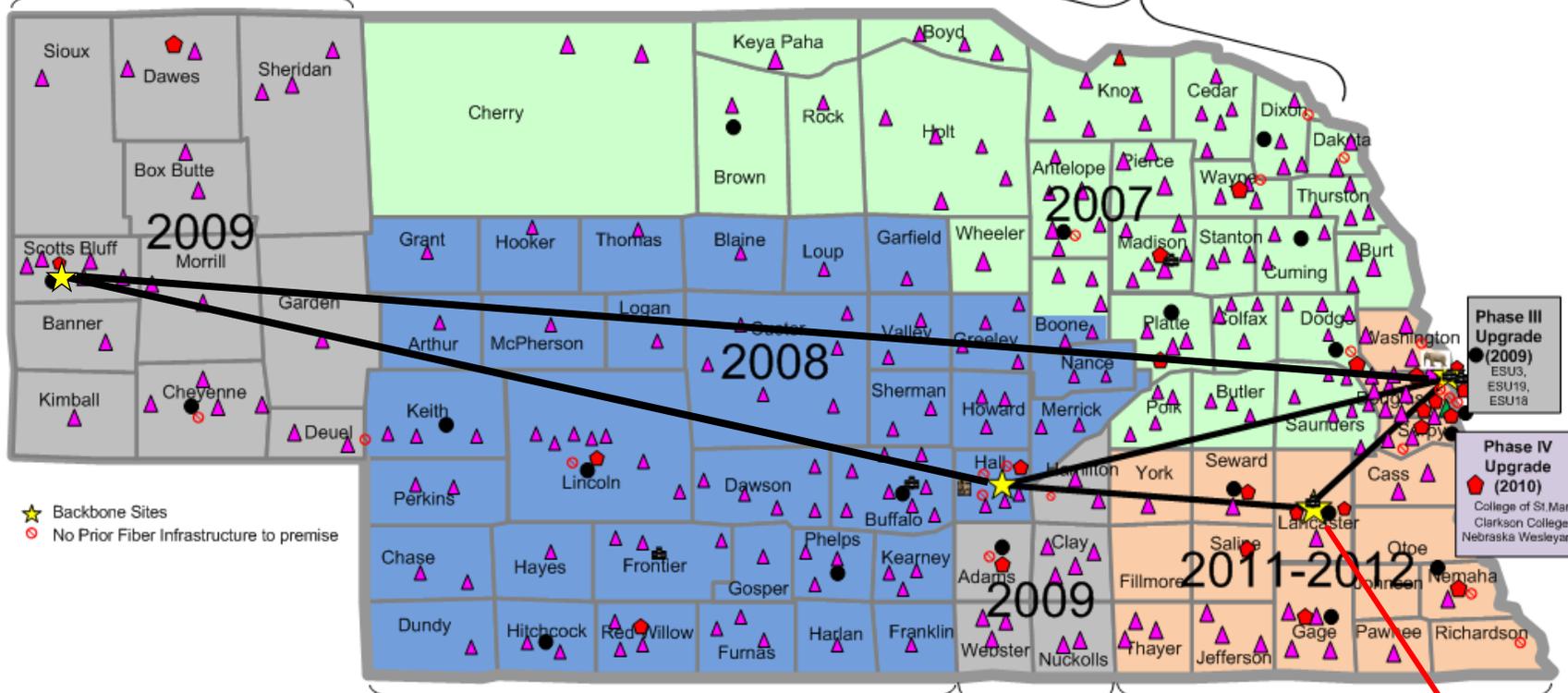
- **Network Nebraska-Education
POTENTIAL Partners (448)**

- 15 public school districts
- 7 nonpublic colleges
- 159 nonpublic schools
- 267 public libraries

Network Nebraska-Education Map by Year

Phase III Upgrade
Panhandle Region: 23 high school districts, 2 ESU offices, 1 college campus

Phase I Upgrade
Green Shading of Northeast Region: 87 high school districts, 5 ESUs, & 2 college campuses



★ Backbone Sites
○ No Prior Fiber Infrastructure to premise

Phase III Upgrade (2009)
ESU3, ESU19, ESU18

Phase IV Upgrade (2010)
College of St Mary
Clarkson College
Nebraska Wesleyan

Phase I – Green Shading on Counties
North Central/NorthEast Regions 2007

- ▲ 87 School Districts
- 5 ESU Offices (1, 2, 7, 8, & 17)
- ◆ 2 College campuses
- NU (UNO, UNL, UNMC, UNK)

Phase II – Blue Shading on Counties
South Central Regions 2008

- ▲ 78 School districts
- 4 ESU Offices (10, 11, 15, & 16)
- ◆ 7 College campuses
- 1 NU (NCTA)

Phase III – Gray Shading on Counties
Western/SouthEast Regions in 2009

- ▲ 42 School districts
- 6 ESU Offices (3, 9, 13, 14, 18, & 19)
- ◆ 8 College campuses

Salmon Shading on Southeast Region (2011-2012)

- ▲ 18 School districts
- 3 ESU Offices (4, 5, & 6)
- ◆ 4 College campuses
- Henry Doory Zoo
- Grand Island Public Library

Internet2
(K.C. GigaPop)



- **Connectivity Expectations for each Participant**
 - Pay for WAN circuit to reach a Network Nebraska aggregation point:
 - Scottsbluff-Panhandle Research Center
 - Grand Island-College Park
 - Lincoln-Nebraska Hall
 - Omaha-Peter Kiewit Institute
 - Omaha-Nebraska Co-Location Center
 - Or Sub-aggregation point:
 - Beatrice-ESU 5
 - Milford-ESU 6



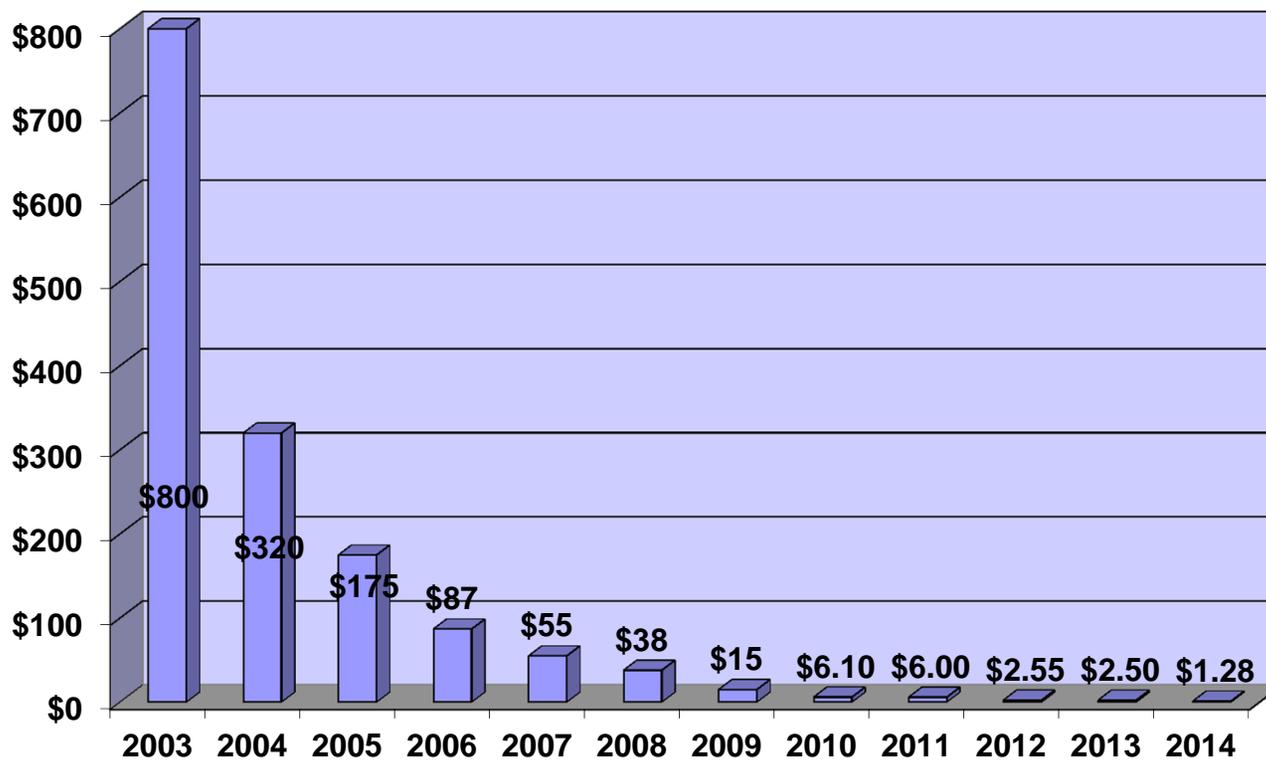
- **Major Roles for Network Nebraska-Education**
 - Network management & infrastructure
 - Bidding for WAN circuits, backbone, Internet, and equipment
 - E-rate filing (backbone & Internet)
 - Accounting, legal, purchasing, budgeting
 - Vendor relations, contracting and billing issues
 - Data center co-location for Participant equipment racks



- **Network Nebraska-Education**
 - **\$1.3M Budget (2014-15)**
 - \$700K for infrastructure maintenance and support
 - \$190K for backbone
 - \$325K for Internet access
 - **Statewide Backbone (2014-15)**
 - 1293 miles
 - 2 Gbps
 - 5 major & 2 minor aggregation points
 - carrying 24+ Gbps of Internet
 - **Completely self-funded by the 274 participants**

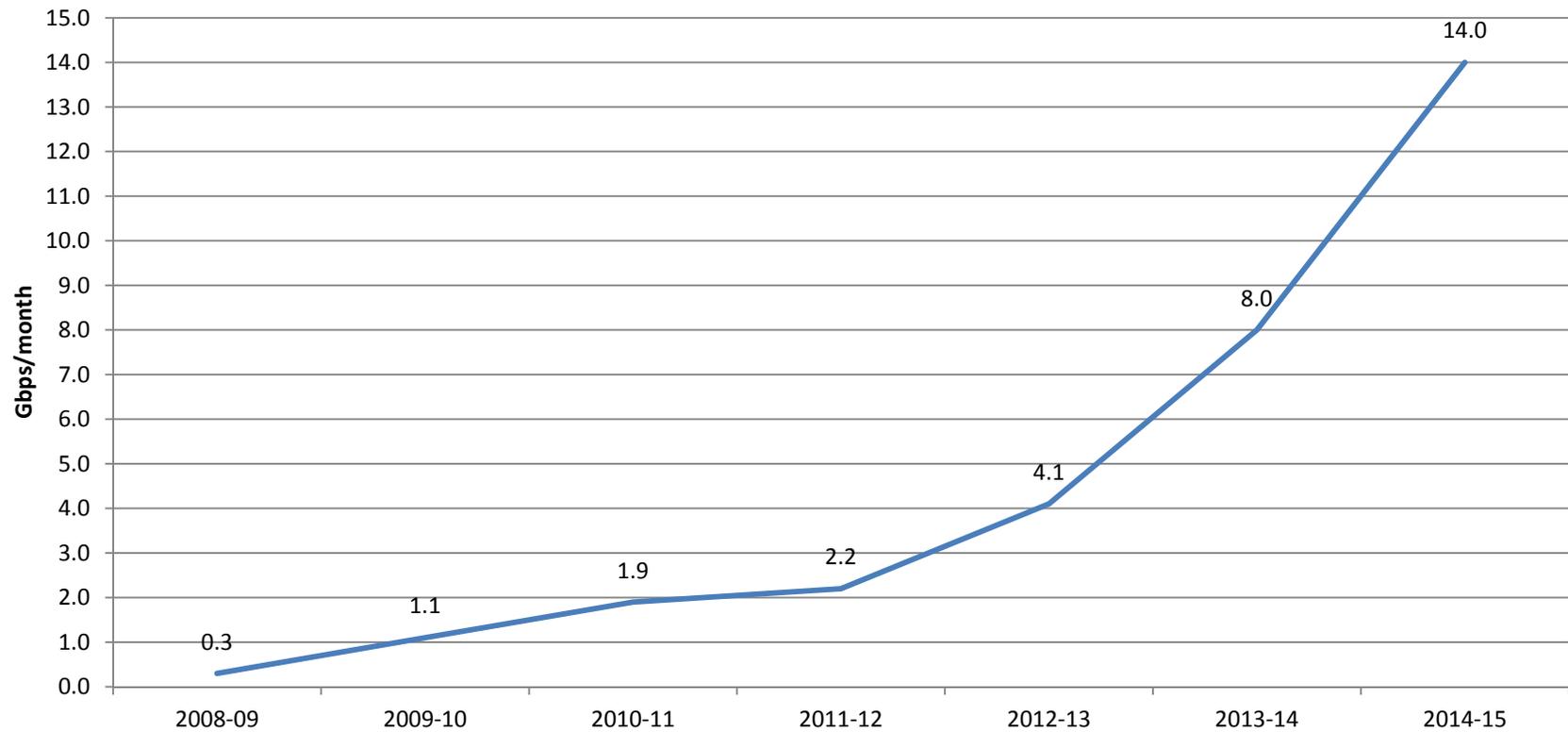


**Network Nebraska Internet Access Cost
(Average \$\$ per Megabit/month)**





**Amount of Internet Bandwidth Purchased by Network Nebraska-
Education K-12 Participants (in Gbps/month)**





E-rate: Who bids? Who files? Who gets billed? Who pays the undiscounted portion?

Type of Service	Who bids and contracts?	Who files E-rate?	Who is the billed entity?	Who pays the balance?
Local LAN circuits	K-12 schools & Libraries	K-12 schools & Libraries	K-12 schools & Libraries	K-12 schools & Libraries
WAN Circuits to the backbone	State of Nebraska/K-12 schools & Libraries	K-12 schools & Libraries	K-12 schools & Libraries	K-12 schools & Libraries
Statewide backbone	State of Nebraska	State of Nebraska	State of Nebraska	K-12 schools & Libraries
Statewide Internet	State of Nebraska	State of Nebraska	State of Nebraska	K-12 schools & Libraries



- **A look to the future...**

- Traffic shaping, Intrusion Prevention, and Commercial Peering Services were recently implemented
- Participation by public K-12 and public higher education entities expected to reach nearly 100% by 7/1/2015
- More educational applications (e.g. online testing, digital textbooks, cloud services) requiring much more bandwidth
- Online testing predicated on 100.0% up time
- Some backbone segments will need to increase from 2Gbps to much higher capacity (5Gbps-10Gbps)
- Internet access continues to increase about 80% per year



E-rate Modernization



Federal
Communications
Commission

- **Major changes (Part 1)**

- FCC wants every school to have an external connection of at least 100Mbps per 1,000 students by 2015 and 1000Mbps per 1,000 students by 2018; and 10Gbps between school district buildings
- FCC will more aggressively enforce the Lowest Corresponding Price (LCP) rule
- Priority 2 funding becomes Category 2 (C2) funding and allows for an internal connections project budget of \$150/student over five years, less the school district's E-rate discount (Nebraska = \$~56 million)
- C2 funding will focus on WiFi and be able to pay for routers, switches, wireless access points, internal cabling, racks, wireless controller systems, firewall services, uninterruptable power supplies, and the software to control the wireless access points
- C1 funding for voice service, voicemail, VOIP, e-mail, and web hosting will abruptly or gradually be phased out



E-rate Modernization



Federal
Communications
Commission

- **Major changes (Part 2)**

- FCC will make circuit speeds and bandwidth costs totally transparent from the USAC website starting in FY 2015
- FCC plans to designate nationwide Preferred Master Contracts so that schools and libraries will not have to bid C2 equipment, but may bid C2 installation, wiring, and basic maintenance locally or by consortia
- Consortium applications will be streamlined and expedited
- The definition of “rural” will be updated from the 2010 U.S. Census
- Starting in FY 2016, entities who pay the full cost of their services will be able to get direct reimbursement through USAC, instead of through their service provider
- FCC plans to raise the profile of the E-rate program to tribal schools and libraries
- The document retention period for applicants, providers, consortium leads and bidders has been extended from 5 to 10 years



- **Statewide RFPs (Part 1)**

- In order to evaluate bids based on “Cost Only”, **All bidder costs must be reflected in either the monthly recurring or non-recurring charges. All fees, taxes and pass-through charges such as NUSF must also be included in the cost. No additional charges will be accepted.**

- July 1, 1999-September 30, 2005 6.95 %
- October 1, 2005-March 31, 2007 5.75 %
- April 1, 2007-present 6.95 %

- The contract expectation is for a service that, at a minimum, will meet required specifications 99.955% of the year - equivalent to a maximum of 4 total hours of downtime/service non-compliance per year. **No other Master Service Agreements or Service Level Agreements or performance standards will be admissible.** Any service not meeting contract specifications to include violation of QoS parameters will incur a contract performance penalty according to the following formula...



- **Statewide RFPs (Part 2)**

- All bidders must take special care to bid EVERY service or location pertinent to their service areas; bid ONE, SOME, or ALL
- State Purchasing will continue to bid multiple bandwidths for every WAN circuit, backbone circuit or Internet access and then disclose the evaluation increment at the moment of bid opening
- No “conditional” bids will be accepted (e.g. if you agree to award all of these sites to ABC company, then you will get this lower price)
- Bids will be tabulated (evaluated) on the basis of COST ONLY
 - **Total Cost = Non-recurring cost + (contract term in months x monthly recurring cost)**
- State RFP will be “on the street” between 30 and 60 days
- Goal: Intents to Award disclosed before December break
- Goal: All State Contracts signed and posted by February 1, 2015, allowing time for local entities to secure approval to purchase off of the state contract(s) and complete their E-rate filing before the March deadline¹⁷



Tom Rolfes, Education I.T. Manager
Office of the Chief Information Officer and
Nebraska Information Technology Commission
402.471.7969
tom.rolfes@nebraska.gov

Executive Sponsors of Network Nebraska--Education:

Brenda Decker, CIO
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Websites:

<http://www.networknebraska.net> (Network Nebraska)
<http://tinyurl.com/nxxsjem> (to view/download this presentation)