

How to Meet the Challenges of Bandwidth Demands for Schools and Libraries

Working Forum for Stakeholders
at DSIT
February 17, 2010



K-12 Technology Initiative Bandwidth Evaluation Process

Our Goal: To fund a circuit to each school based on student population and a level of bandwidth per student to determine what total bandwidth is appropriate for each school. We already have a tier structure for Internet that is based on student population so we are developing a similar process for the WAN circuits to schools. The Internet side will also be re-evaluated based on the bandwidth per student criteria.

It is our intent to establish a uniform level of bandwidth per student that can be financially supported by the state as a "funded baseline bandwidth". Once this baseline level is established, a new Cost Share formula will need to be developed to allow districts to pay a percentage of the additional cost above this "funded baseline" (based on their district E-Rate discount) to get additional bandwidth at a school.



Purpose of This Forum

For ALL Stakeholders to work collaboratively to determine how best to meet exploding bandwidth demands to serve students and library patrons in SC in a manner that is both **Affordable** to the State and **Equitable** to all users.





Where to Start?



What We Do Know

- **DSIT has gathered data on the following:**
 - What bandwidth is being provided to school and library sites
 - What carrier is providing these services
 - What these services cost
 - How many students are in each school
 - What is the E-rate discount level of each district/library
 - How many computers are in the libraries
 - Who has requested additional bandwidth on the WAN side



What We Do NOT Know

- Where should the baseline bandwidth/cost be set ?
- What is the cost of the baseline portion to the state ?
- How much state funding will be available in 2010-11 for network connectivity ?
- How should Cost Shares be calculated ?
- Others ???



Where Should the Baseline Bandwidth/Cost be set ?

- **Things Under Consideration**
 - Bandwidth allocation per student for schools
 - Bandwidth allocation based on computers for libraries
- Other Thoughts ???



What is the Cost of the Baseline Portion to the State ?

- Things Under Consideration
 - Vendor rates for the Baseline circuits
 - How much is eligible for E-rate funding
- Other Thoughts ???



How Much State Funding will be available in 2010-11 for Network Connectivity?

- Things Under Consideration
 - Economic Impact on State Budgets
 - Ways to Influence Decisions
- Other Thoughts ???



How Should Cost Shares be Calculated ?

- **Things Under Consideration**
 - E-Rate Discount Levels
 - Cost of Services in High-Cost areas
 - Apply to Hub sites
- Other Thoughts ???



10 Mb Cost for Metro Ethernet

Carrier	MRC	11.00% Taxes/Fees	Total	Cost Used
AT&T	\$490.05	\$53.91	\$543.96	\$544
Spirit Telecom Franchise Companies				
Chesnee	\$786.50	\$86.52	\$873.02	\$873
Chester	\$822.80	\$90.51	\$913.31	\$913
Farmers Telephone	\$1,028.50	\$113.14	\$1,141.64	\$1,142
Hargray	\$786.50	\$86.52	\$873.02	\$873
Home	\$786.50	\$86.52	\$873.02	\$873
Horry Telephone	\$1,018.82	\$112.07	\$1,130.89	\$1,131
Lockhart	\$822.80	\$90.51	\$913.31	\$913
Palmetto Rural	\$786.50	\$86.52	\$873.02	\$873
Piedmont Rural	\$786.50	\$86.52	\$873.02	\$873
Pond Branch (PBT)	\$786.50	\$86.52	\$873.02	\$873
Ridgeway	\$822.80	\$90.51	\$913.31	\$913
Sandhill	\$786.50	\$86.52	\$873.02	\$873
West Carolina	\$786.50	\$86.52	\$873.02	\$873
Comporium				
Ft. Mill	\$925.65	\$101.82	\$1,027.47	\$1,027
Heath Springs	\$925.65	\$101.82	\$1,027.47	\$1,027
Lancaster	\$925.65	\$101.82	\$1,027.47	\$1,027
Rock Hill	\$925.65	\$101.82	\$1,027.47	\$1,027

Rates Vary for the Following:

Bluffton - Embarq - McClellanville - Norway - St. Stephen - Verizon - Williston - Windstream



Bandwidth per Student Matrix

Circuit Speed	Monthly Cost to DSIT	School Type	Avg Daily Student Attendance	Kilobits per Student						
				3	4	5	6	7	16	34
				Megabits per Site						
100 Meg	\$813	District office	3547	11	14	18	21	25	57	121
10 Meg	\$682	High School	235	1	1	1	1	2	4	8
10 Meg	\$682	Elementary School	411	1	2	2	2	3	7	14
10 Meg	\$682	Elementary School	316	1	1	2	2	2	5	11
10 Meg	\$682	High School	420	1	2	2	3	3	7	14
10 Meg	\$682	Elementary School	267	1	1	1	2	2	4	9



Possible Cost Share Formula

Actual Cost of Circuit **minus** Funded Baseline Cost = **Cost Difference**

Cost Difference **times** District E-Rate Non-discount % (100%-E-Rate %)

Equals

District Cost Share for Circuit



Impact of Various Discount Rates, Carriers, and Discount Rates on District Cost Shares

<u>Students</u>	<u>District E-Rate Discount</u>	<u>Serving Carrier for School</u>	<u>Eligible B'width @ 6 kbs/stu</u>	<u>Baseline Circuit Speed</u>	<u>Baseline Cost</u>	<u>Cost for Additional Bandwidth</u>				
						<u>Cir Speed</u>	<u>Cost to DSIT</u>	<u>Cost Diff</u>	<u>District Non- Disc %</u>	<u>District Cost Share</u>
500	70%	AT&T	3	10 F	\$544	100 F	\$1,088	\$544	30%	\$163
500	90%	AT&T	3	10 F	\$544	100 F	\$1,088	\$544	10%	\$54
500	70%	Spirit Avg	3	10 F	\$873	100 F	\$1,853	\$980	30%	\$294
500	90%	Spirit Avg	3	10 F	\$873	100 F	\$1,853	\$980	10%	\$98
500	70%	Farmers	3	10 F	\$1,142	100 F	\$1,948	\$806	30%	\$241
500	90%	Farmers	3	10 F	\$1,142	100 F	\$1,948	\$806	10%	\$80



Are We Headed in the Right Direction?

Action Items ...



What Are the Next Steps?

- Finalize Baselines
- Finalize Budget for 2010-11
- Finalize Cost Share Formula
- Verify WAN Configurations
- Evaluate DIA Bandwidth using New
Cost Share Formula



More Questions ??

Answers or Resolutions ??



Thanks for Joining Us !

