

Worksheet for Page 2 Of 6 for Determining Discount Percentage

Site Name	Total students	Free/Red. students	Free/Red %	MAS	E-Rate Discount	Wt. Factor	State Shared %	Dist. Shared %
Jonesborough Elementary	713	355	50%	Urban	80%	570		
Jonesborough Middle	587	243	41%	Urban	60%	352		
Lamar Elementary	593	337	57%	Urban	80%	474		
South Central Elementary	244	179	73%	Urban	80%	195		
Sulpher Springs Elementary	530	225	42%	Urban	60%	318		
University School	512	20	4%	Urban	40%	205		
West View Elementary	548	268	49%	Urban	60%	329		
Johnson City Schools	6297	2367	38%	Urban		3669		58%
Stratton Elementary	269	190	71%	Urban	80%	215		
Cherokee Elem	267	70	26%	Urban	50%	134		
Fairmont Elem	284	74	26%	Urban	50%	142		
Woodland Elementary	537	317	59%	Urban	80%	430		
Liberty Bell	2362	676	29%	Urban	50%	1181		
Mountain View Elementary	445	400	90%	Urban	90%	401		
North Side	238	143	60%	Urban	80%	190		
Science Hill	1117	294	26%	Urban	50%	559		
South Side	267	171	64%	Urban	80%	214		
Towne Acres	511	32	6%	Urban	40%	204		
Wayne County	2772	1442	52%	Rural		2103		
Wayne County Schools	2772	1442	52%	Rural		2103		76%
Collinwood Elem & Middle	475	283	60%	Rural	80%	380		
Collinwood High	328	146	45%	Rural	70%	230		
Collinwood Middle	373	223	60%	Rural	80%	298		
Frank Hughes	311	215	69%	Rural	80%	249		
Wayne Co. High	368	138	38%	Rural	70%	258		
Wayne Co Voc Ctr			52%	Rural	80%	0		
Waynesboro Elem & Middle	467	236	51%	Rural	80%	374		
Waynesboro Middle	450	201	45%	Rural	70%	315		
Weakley County	4592	1570	34%	Rural		2928		
Weakley County Schools	4592	1570	34%	Rural		2928		64%
Dresden Elementary	531	223	42%	Rural	70%			
Dresden Middle	263	110	42%	Rural	70%	184		
Dresden Hs	328	82	25%	Rural	60%	196		
Gleason School	655	270	41%	Rural	70%	459		
Greenfield	624	213	34%	Rural	60%	374		
Martin Primary	528	213	40%	Rural	70%	370		
Martin Elem	443	143	32%	Rural	60%	266		
Westview Hs	553	104	19%	Rural	50%	277		
Martin Middle	456	119	26%	Rural	60%	274		
Palmerston School	171	91	53%	Rural	80%	137		
Sharon School	247	143	58%	Rural	80%	198		
Weakley Co Reg Hs	326	82	25%	Rural	60%	196		
White County	3538	1539	43%	Rural		2519		
White County Schools	3538	1539	43%	Rural		2519		71%
Bpon De Croft Elem	168	99	59%	Rural	80%	134		
CasaVille	236	123	52%	Rural	80%	189		
Central View Elem	97	63	65%	Rural	80%	78		
Doyle Elem	195	111	57%	Rural	80%	156		
Findlay Elem	706	297	42%	Rural	70%	494		
Sparta White Co. High	930	242	26%	Rural	60%	558		
White Co. Middle	553	249	45%	Rural	70%	387		
Woodland Park Elem	653	355	54%	Rural	80%	522		
Williamson County	19096	1559	8%	Urban		7534		
Williamson County Schools	15984	834	5%	Urban		6087		38%
Bethesda Elem	629	45	7%	Urban	40%	252		

Worksheet for Page 2 Of 6 for Determining Discount Percentage

Site Name	Total students	Free/Red. students	Free/Red %	MAS	E-Rate Discount	Wt. Factor	State Shared %	Dist. Shared %
Brentwood High	1405	5	0%	Urban	20%	281		
Centennial Hs	1190	28	2%	Urban	40%	476		
College Grove Elem	231	42	18%	Urban	40%	92		
Edmondson Elem	641	1	0%	Urban	20%	128		
Crockett Elem	547	7	1%	Urban	40%	219		
Fairview Elem	576	77	13%	Urban	40%	230		
Fairview Middle	532	135	25%	Urban	50%	266		
Fairview High	533	83	16%	Urban	40%	213		
Franklin High	1072	120	11%	Urban	40%	429		
Fred J. Page Middle	833	37	4%	Urban	40%	333		
Fred J. Page High	933	8	1%	Urban	40%	373		
Grassland Elem	629	4	1%	Urban	40%	252		
Grassland Middle	679	11	2%	Urban	40%	272		
Hillsboro	331	72	22%	Urban	50%	166		
Hunters Bend Elem	472	8	2%	Urban	40%	189		
Lipcomb Elem	662	8	1%	Urban	40%	265		
Nolensville Elem	384	23	6%	Urban	40%	154		
Brentwood Middle	592	8	1%	Urban	40%	237		
Oak View Elem	529	20	4%	Urban	40%	212		
Pinewood Elementary	159	38	24%	Urban	50%	80		
Scales Elem	643	5	1%	Urban	40%	257		
Trinity Elem	489	21	4%	Urban	40%	196		
Walnut Grove	563	19	3%	Urban	40%	225		
Woodland Middle	730	13	2%	Urban	40%	292		
Franklin Sd	3112	725	23%	Urban		1448		47%
Johnson Elementary	281	72	26%	Urban	50%	141		
Franklin Elementary	431	164	38%	Urban	60%	259		
Freedom Intermediate	773	146	19%	Urban	40%	309		
Freedom Middle	743	138	19%	Urban	40%	297		
Liberty Elementary	461	115	25%	Urban	50%	231		
Moore Elementary	423	90	21%	Urban	50%	212		
Wilson County	13204	2357	18%	Urban		5946		
Wilson County Schools	10689	1331	12%	Urban		4377		41%
Carroll Oakland Elementary	509	99	19%	Urban	40%	204		
Gladeville Elementary	631	56	9%	Urban	40%	252		
Lakeview Elementary	605	32	5%	Urban	40%	242		
Lebanon High	1436	213	15%	Urban	40%	574		
Mt Juliet High	1320	39	3%	Urban	40%	528		
Mt Juliet Jr. Hi	1043	74	7%	Urban	40%	417		
Mt Juliet Elementary	750	68	9%	Urban	40%	300		
Southside Elementary	777	142	18%	Urban	40%	311		
Stoner Creek Elementary	556	80	14%	Urban	40%	222		
Tuckers Cross Roads	335	58	17%	Urban	40%	134		
Watertown High School	432	77	18%	Urban	40%	173		
Watertown Elementary	506	184	36%	Urban	60%	305		
West Elementary	571	72	13%	Urban	40%	228		
Wilson Co Voc Ctr			12%	Urban	40%	0		
W A Wright	667	99	14%	Urban	40%	279		
Wilson Co Adult Hs			12%	Urban	40%	0		
Mt. Juliet High Annex	519	38	7%	Urban	40%	208		
Lebanon Sd	2515	1026	41%	Urban		1569		62%
Byars Dowdy Elem	419	127	30%	Urban	50%	210		
Coles Ferry Elem	388	168	43%	Urban	60%	233		
Sam Houston Elem	423	229	54%	Urban	80%	338		
Walter Baird Middle	486	276	57%	Urban	80%	389		

Worksheet for Page 2 Of 6 for Determining Discount Percentage

Site Name	Total students	Free/Red. students	Free/Red %	MAS	E-Rate Discount	Wt. Factor	State Shared %	Dist. Shared %
Castle Heights Upper	799	224	28%	Urban	50%	400		
Special District	1773	1545	87%	Urban		1536		87%
West Tn School For The De	43	43	100%	Urban	90%	39		
York Institute	602	374	62%	Rural	80%	482		
Tn School For The Blind	160	160	100%	Urban	90%	144		
Tn School For The Deaf	117	117	100%	Urban	90%	105		
Bradley County Group Hom	12	12	100%	Rural	90%	11		
Group Homes	39	39	100%	Urban	90%	35		
Inman Group Home	13	13	100%	Rural	90%	12		
West View Center	10	10	100%	Urban	90%	9		
Nashville Transition Center	22	22	100%	Urban	90%	20		
Woodland Hills	124	124	100%	Urban	90%	112		
Taft	125	125	100%	Rural	90%	113		
North East Tn Academy	13	13	100%	Urban	90%	12		
Johnson City Transition	12	12	100%	Urban	90%	11		
Wilder	134	134	100%	Urban	90%	121		
Johnson City O & A	16	16	100%	Urban	90%	14		
Peabody Group Home	8	8	100%	Urban	90%	7		
Mt. View	130	130	100%	Rural	90%	117		
Cookeville Halfway Home	7	7	100%	Rural	90%	6		
Jackson Halfway House	8	8	100%	Urban	90%	7		
Tn Preparatory School	178	178	100%	Urban	90%	160		

Contact Person's Name: Angeline B. Shrago and Phone Number: 615-532-1229

Block 5: Services Ordered

15. "Shared" services: All EXCEPT site-specific, internal connections and dedicated ("private line") connections from only one school or library to an ISP other end user.

(1) SLC Service Provider Number or Full Legal Name of Service Provider	(2) Universal Service Control Number for Form 470 on which this is based	CONTRACT			(6) Services or Products	(7) Service Start Date	Amount		(10) Estimated Total Annual Prediscount Cost	(11) Percentage Discount (from Item 14)
		(3) Contract Number (if applicable)	(4) Award Date	(5) Expir- ation Date			(8) Estimated One Time Pre- discount Cost	(9) Estimated Monthly Pre- discount Cost		
143008159	144790000000004				Telecommunications Services					
		FA-99-12803-00	20-Mar-98	31-Dec-01	Internet Access	01-Jul-98	1,747,000		1,747,000	69%
					Internal Connections (Shared)					
143008159	144790000000004				Telecommunications Services					
		FA-99-12803-00	20-Mar-98	31-Dec-01	Internet Access	01-Jul-98		329,276	1,975,656	69%
					Internal Connections (Shared)					
143008159	144790000000004				Telecommunications Services					
		FA-99-12803-00	20-Mar-98	31-Dec-01	Internet Access	01-Jul-98		275,770	1,654,620	69%
					Internal Connections (Shared)					

Contact Person's Name: Jacqueline B. Shrager and Phone Number: 615-532-1229

Block 5: Services Ordered

15. "Shared" services: All EXCEPT site-specific, internal connections and dedicated ("private line") connections from only one school or library to an ISP other end user.

(1) SLC Service Provider Number or Full Legal Name of Service Provider	(2) Universal Service Control Number for Form 470 on which this is based	CONTRACT			(6) Services or Products	(7) Service Start Date	Amount		(10) Estimated Total Annual Prediscount Cost	(11) Percentage Discount (from Item 14)
		(3) Contract Number (if applicable)	(4) Award Date	(5) Expir- ation Date			(8) Estimated One Time Pre- discount Cost	(9) Estimated Monthly Pre- discount Cost		
					Telecommunications Services					
143008159	144790000000004	FA-99-12803-00	20-Mar-98	31-Dec-01	Internet Access	01-Jul-98	1,845,546	189,552	2,982,858	69%
					Internal Connections (Shared)					
					Telecommunications Services					
143008159	144790000000004	FA-99-12803-00	20-Mar-98	31-Dec-01	Internet Access	15-Jul-98	1,790,552	146,302	2,668,364	69%
					Internal Connections (Shared)					
					Telecommunications Services					
143008159	144790000000004	FA-99-12803-00	20-Mar-98	31-Dec-01	Internet Access	01-Aug-98	1,691,151	173,742	2,559,863	69%
					Internal Connections (Shared)					
					Telecommunications Services					
143008159	144790000000004	FA-99-12803-00	20-Mar-98	31-Dec-01	Internet Access	01-Sep-98	1,207,140	172,675	1,897,839	69%
					Internal Connections (Shared)					
					Telecommunications Services					
143008159	144790000000004	FA-99-12803-00	20-Mar-98	31-Dec-01	Internet Access	01-Oct-98	1,207,140	241,752	1,932,396	69%
					Internal Connections (Shared)					

Contact Person's Name: Jacqueline B. Shingo and Phone Number: 615-532-1229

Block 5: Services Ordered

15. "Shared" services: All EXCEPT site-specific, internal connections and dedicated ("private line") connections from only one school or library to an ISP other end user.

(1)	(2)	CONTRACT			(6)	(7)	Amount		(10)	(11)
		(3)	(4)	(5)			(8)	(9)		
SLC Service Provider Number or Full Legal Name of Service Provider	Universal Service Control Number for Form 470 on which this is based	Contract Number (if applicable)	Award Date	Expiration Date	Services or Products	Service Start Date	Estimated One Time Pre-discount Cost	Estimated Monthly Pre-discount Cost	Estimated Total Annual Prediscount Cost	Percentage Discount (from Item 14)
					Telecommunications Services					
143008159	144790000000004	FA-99-12803-00	20-Mar-98	31-Dec-01	Internet Access	01-Nov-98	1,134,489	363,953	1,862,395	69%
					Internal Connections (Shared)					
					Telecommunications Services					
143008159	144790000000004	FA-99-12803-00	20-Mar-98	31-Dec-01	Internet Access	01-Dec-98	858,234	633,431	1,491,667	69%
					Internal Connections (Shared)					
					Telecommunications Services					
					Internet Access					69%
					Internal Connections (Shared)					
					Telecommunications Services					
					Internet Access					69%
					Internal Connections (Shared)					

Appendix per Item 17
Supporting Documentation for Item 15

Schools and Libraries Universal Service Program
Form 471 Services Ordered Worksheet

Block 1: General Information	
1. Form 471 Application Number	2. Universal Service Control Number(s) 144790000000004
3. SLC Service Provider (SPIN) or Full Legal Name of your Service Provider: 143008159	
4. Shared Services Telecommunications Services Internal Connections Internet Access Site Specific Services: Internal Connections Dedicated Access	5. Identifier that links to specific line of Form 471 Items 15 & 16 Item 15 Column 6 Line Item Entries 1 through 10 correlate to these entries.

Block 2: Services Ordered Information

6. Services & Products Ordered Details															
NCES School Code	1A Telephone Number	1B Account Information	2 Service Description	3 Quantity	4 One Time Charge	5 One Time Taxes & Surcharges	6 Monthly Charges	7 Monthly Taxes & Surcharges	8 Number of Months	9 Eligible Service (Yes or Partial)	10 Percentage Eligible of Service/Product shared with Ineligible Entities	11 Estimated Eligible Prediscount One Time Charges	12 Estimated Eligible Prediscount Monthly Charge	13 Estimated Eligible Prediscount Total Charges	14 Discount
4700000	615-532-1229	FA-99-12803-00	Basic Internet Access Service Setup Fee	1	\$1,747,000.00	\$0.00	\$0.00	\$0.00	6	Yes	100%	\$1,747,000.00	\$0.00	\$1,747,000.00	69%
4700000	615-532-1229	FA-99-12803-00	Basic Internet Access Service Provision	1	\$0.00	\$0.00	\$329,276.00	\$0.00	6	Yes	100%	\$0.00	\$329,276.00	\$1,975,656.00	69%
4700000	615-532-1229	FA-99-12803-00	Service Level One	1	\$0.00	\$0.00	\$275,770.00	\$0.00	6	Yes	100%	\$0.00	\$275,770.00	\$1,654,620.00	69%
4700000	615-532-1229	FA-99-12803-00	Service Level Two	1	\$1,845,546.00	\$0.00	\$189,552.00	\$0.00	6	Yes	100%	\$1,845,546.00	\$189,552.00	\$2,982,858.00	69%
4700000	615-532-1229	FA-99-12803-00	Service Level Three	1	\$1,790,552.00	\$0.00	\$146,302.00	\$0.00	6	Yes	100%	\$1,790,552.00	\$146,302.00	\$2,668,364.00	69%
4700000	615-532-1229	FA-99-12803-00	Service Level Four	1	\$1,691,151.00	\$0.00	\$173,742.40	\$0.00	5	Yes	100%	\$1,691,151.00	\$173,742.40	\$2,559,863.00	69%
4700000	615-532-1229	FA-99-12803-00	Service Level Five	1	\$1,207,140.00	\$0.00	\$172,674.75	\$0.00	4	Yes	100%	\$1,207,140.00	\$172,674.75	\$1,897,839.00	69%

**Education Networks of America (ENA)
Brief Summary of Contracted Services
for the State of Tennessee Department of Education Consortium of K-12 Schools**

Overview of Contracted Services: In response to the State's RFP 97-2, the State of Tennessee has awarded and contracted with Education Networks of America (ENA) to provide a turnkey Internet Access Service approved under CC Docket no. 96-45, Schools and Libraries Eligibility List, Service Name: Internet Access. Due to the complexity and scope of Tennessee's requirements, this service is delivered to all sites at the service levels specified in the contract for a one-time and single monthly rate for all consortium members.

ENA's service levels are based on increasing Internet web site access speeds and availability as the customer purchases higher levels of service as set forth in the Contract. The 42-month contract calls for the migration from Basic Level One Internet Access Service to a fully robust service. At the Enhanced Internet Access Service Levels, the service will be capable of delivering 2 web pages per minute to the current 50,000 computers, increasing to 90,000 computers over 3.5 years. ENA's Enhanced Internet Access Service Levels provide ability to avoid the problem of Internet congestion during peak school utilization hours. Excluding internal network failures, all schools with Enhanced Internet Access Service have 74% of their web requests answered within ENA's Internet Access Service, avoiding many possible delays on the Internet. The remaining 26% of web requests will query the Internet directly.

ENA's Enhanced Internet Access Service provides access to any site that has been recently previewed by any user on the system during peak demand times, regardless of the congestion level of the Internet. This Internet access approach is necessary to meet the classroom needs of Tennessee teachers. This provides educators with a substantial improvement in predictable and reliable delivery that cannot be obtained through bandwidth increases to the Internet alone.

Students and teachers receive this Internet access service transparently and without content provisioning or content modification. The only content provided by ENA, under this contract, is an Educators' Web Page to link educators via bookmarks to education sites and services. ENA owns or leases all telecommunications equipment and telecommunications lines necessary to support a Point of Presence in each school. ENA's service offering also includes the following items as a bundled package. No unbundled packages are available through ENA.

1. Toll-free Help Desk support for notifying ENA of Internet access problems
2. An E-mail account for each teacher.
3. Educators Web Page to link educators to popular education web sites on the Internet.
4. Enhanced Service Levels include security protection from Internet intrusion.
5. Network-wide Content Filtering to meet federal or state requirements

Description of Item 17-Listed Services

Basic Internet Access Service Setup Fee - This fee is the initial charges to establish the State of Tennessee's account for Basic Internet Access. The charge is a single, one-time fee of \$1,000 per site.

Basic Internet Access Service Provision - This fee is the one-time cost of the Basic Internet Access Service Provision paid in monthly installments over 18 months.

Service Level One is the monthly recurring cost of Basic Internet Access Service that provides basic access to the Internet via ISDN.

Contracted Service Performance Level:

100% connected to the Internet with Basic Internet Access

97% Internet Access Availability for all Sites

Service Level Two: Service Level Two provides enhanced Service Levels through the provision of 5 enhanced egress points covering all LATA's. ENA K-12 traffic is routed to these egress points where ENA accesses its Tier 1 and Tier 2 Internet access providers. All web requests are centrally managed to meet reliability service levels and to reduce problems related to congestion on the Internet as described in the overview of service. This Internet Access Service Level provides the capability to migrate schools from Basic Internet Access Service Level connections (ISDN) to Enhanced Internet Access Service Levels

utilizing BellSouth's Connectionless Data Service (CDS), a form of packet switching similar to Frame Relay, utilizing fractional T1 access. The following Service Levels apply in Service Level Two:

Contracted Service Performance Level:

All users have 74% of their web requests answered within ENA's Internet Access Service, avoiding many possible delays on the Internet. The remaining 26% of web requests will query the Internet directly.

Service Levels Three through Eight: Service Level Three through Eight enhancements improve the performance of Internet Access to all schools. Service Level Three through Eight incrementally reduces Internet access congestion points through upgrades of bandwidth and enhancements to schools and ENA county points of presence. Schools with high PC counts and corresponding high student populations are migrated from county ISDN access points to CDS Internet Access, thereby increasing the available bandwidth to all schools remaining on the shared county access points

ENA County points of presence are upgraded to support Enhanced Internet Access via dual ISDN. Enhanced Internet Access via dual ISDN for smaller schools also begins.

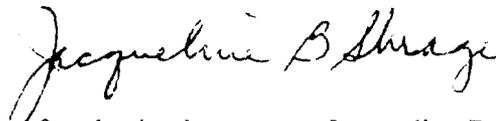
Service Level Eight Contracted Service Performance Level:

- a. 50% of Schools are connected with Enhanced Internet Access with a guaranteed 2 web pages per minute.
- b. All users have 74% of their web requests answered within ENA's Internet Access Service, avoiding many possible delays on the Internet. The remaining 26% of web requests will query the Internet directly.
- c. 99% Internet Access Availability for Enhanced Internet Access (Dual ISDN and CDS-Connected Sites).
- d. 97% Internet Access Availability for Basic Internet Access Sites

This list will be augmented as requested by the SLC in its letter dated April 9, 1998.

Addendum Note to Item 17
USCN: 14479000000004

The Applicant believes that the services and entities listed are eligible for universal service support based on the definition of Internet Access. However, because an objection has been filed by an unsuccessful bidder with the SLC and the Commission, the Applicant has been unable to finally confirm this with the SLC prior to the filing of its Form 471. The Applicant understands that it will be able to amend its Form 471, without prejudice, at the time a determination is made, and before any disapproval at the services-ordered level.

Signature: 

Date: 4-14-98

Printed name of authorized person: Jacqueline B. Shrago

Title or position of authorized person: Director, ConnectEN

Contact Person's Name: Jacqueline B. Shrago and Phone Number: 615-532-1229

16. "Site Specific" Services: Internal connections not shared by multiple schools or libraries and dedicated ("private line") connections from only one school or library to an ISP or other end-user.

(1) SLC Number of Service Provider <i>(Obtain from Service Provider)</i>	(2) Universal Service Control Number for Form 470 on which this is based	CONTRACT			(6) Services or Products	(7) Service Start Date	Amount <i>(See instructions about rounding)</i>			(11) Percent- age Dis- count (from Item 14)	(12) School or Library Code (listed on website)
		(3) Contract Number (if applicable)	(4) Award Date	(5) Expira- tion Date			(8) Estimated One Time Pre-discount Cost	(9) Estimated Monthly Pre- discount Cost	(10) Estimated Total Annual Pre- discount Cost		
					Dedicated Services						
					Dedicated Services						
					Dedicated Services						
					Dedicated Services						
					Dedicated Services						
					Dedicated Services						
					Dedicated Services						
					Dedicated Services						
					Dedicated Services						

Contact Person's Name Jacqueline B. Shrago

and Phone Number 615-512-1229

- 17 Check this box to confirm that, for each service provider listed in 15 and 16, above, a list is attached (as an appendix to this form) of all of the service provider is providing to the billed entity. Service providers should provide these lists on requests.

18 a Total dollars of support allocated for this application for the entire funding year (calculated by administrator)

b Amounts of support set aside for this application for the first six months of the year (calculated by administrator)

19 Provide the total estimated cost (pre-discount price) for the services you expect to order in the funding year following the one for which you are applying here. (This figure is not binding.)

\$ 24,286,000

20 Is your order solely for basic telephone service? Yes No

Block 6: **Certification and Signature**

21 The applicant is eligible for support because it includes: (Check one or both)

schools under the statutory definitions of elementary and secondary schools found in the Elementary and Secondary Education Act of 1965, 20 U.S.C. Secs. 8801 (14) and (25), that do not operate as for-profit businesses and do not have endowments exceeding \$50 million; and/or

libraries or library consortia eligible for assistance from a state library administrative agency under the Library Services and Technology Act of 1996 that do not operate as for-profit businesses and whose budgets are completely separate from any schools', including, but not limited to, elementary and secondary schools, colleges, or universities.

22 The school(s) or library(ies) I represent have secured access to all of the resources, including computers, training, software, maintenance, and electrical connections necessary to make effective use of the services purchased as well as to pay the discounted charges for eligible services

23 All individual schools, libraries, and library consortia listed above in items 15 and 16 are recovered by

a an individual; and/or

b higher-level technology plan(s) for using the services requested in this application (if those services consist of other than voice services).

24 Status of technology plans (check one):

a Technology plan(s) has/have been approved; or

b Technology plan(s) will be approved by a state or other authorized body; or

c Technology plan(s) will be submitted to Schools and Libraries Corporation for approval

25 I certify that the entities eligible for support that I am representing have complied with all applicable state and local laws regarding procurements of services for which support is being sought

26 I certify that the services the applicant purchases at discounts provided by 47 U.S.C. Sec. 254 will be used solely for educational purposes and will not be sold, resold, or transferred in consideration for money or any other thing of value.

27 I understand that the discount level used for shared services is conditional, for future years, upon ensuring that the most disadvantaged schools and libraries that are treated as sharing in the service receive an appropriate share of benefits from those services.

28 I recognize that I may be audited pursuant to this application and will retain for five years any and all worksheets and other records that I rely upon to fill out this application.

29 I certify that I am authorized to submit this request on behalf of the above named institution, that I have examined this request, and to the best of my knowledge, information, and belief, all statements of fact contained herein are true

30. Signature

Jacqueline B. Shrago

32. Date 4-14-98

32. Printed name of authorized person

Jacqueline B. Shrago

33 Title or position of authorized person

Director, ConnectEN Project

Contact Person's Name JACQUELINE B. SHRAGOand Phone Number 615-532-1229

Persons willfully making false statements on this form can be punished by fine or forfeiture, under the Communications Act, 47 U.S.C. Secs. 502, 503(b), or fine or imprisonment under Title 18 of the United States Code, 18 U.S.C. Sec. 1001.

NOTICE TO INDIVIDUALS Section 54.504 of the Federal Communication Commission's rules requires all schools and libraries ordering services that are eligible for and seeking universal service discounts to file this Services Ordered and Certification Form (FCC Form 471) with the Universal Service Administrator 47 C.F.R. 54.504 the collection of information stems from the Commission's authority under Section 254 of the Communications Act of 1934, as amended, 47 U.S.C. 254. The data in the report will be used to ensure that schools and libraries comply with the competitive bidding requirement contained in 47 C.F.R. 54.504. All schools and libraries planning to order services eligible for universal service discounts must file this form themselves or as part of a consortium.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

The FCC is authorized under the Communications Act of 1934, as amended, to collect the personal information we request on this form. We will use the information you provide to determine whether approving this application is in the public interest. If we believe there may be a violation of potential violation of a FCC statute, regulation, rule or order, your application may be referred to the Federal, state, or local agency responsible for investigating, prosecuting, enforcing or implementing the statute, rule, regulation or order. In certain cases, the information in your application may be disclosed to the Department of Justice or a court or adjudicative body when (a) the FCC, or (b) any employee of the FCC, or (c) the United States Government, is a party of a proceeding before the body or has an interest in the proceeding.

If you owe a past due debt to the federal government, the taxpayer identification number (such as your social security number) other information you provide may also be disclosed to the Department of the Treasury Financial Management Service, other federal agencies and/or your employer to offset your salary, IRS tax refund or other payments to collect that debt. The FCC may also provide this information to these agencies through the matching of computer records when authorized.

With the exception of your social security number, if you do not provide the information we request on the form, the FCC may delay processing of your application or may return your application without action.

The foregoing Notice is required by the Privacy Act of 1974, Pub. L. No. 93-579, December 31, 1974, 5 U.S.C. 552, and the Paperwork Reduction Act of 1995, Pub. L. No. 104-13, 44 U.S.C. 3501, *et seq*.

Public reporting burden for this collection of information is estimated to average 6 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing, and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information including suggestions for reducing the reporting burden to the Federal Communications Commission, Performance Evaluation and Records Management, Washington, DC 20554.

This form should be submitted to **Schools and Libraries Corporation**
P.O. Box 4217
Iowa City, Iowa 52244-4217
1-888-203-8100

Allotment Code 331.25
Cost Center 035
Grant Code N/A

RFS Number 331.258-034

**AMENDMENT NUMBER 1
TO CONTRACT FA-99-12803-00**

**BETWEEN THE STATE OF TENNESSEE,
DEPARTMENT OF EDUCATION
AND
EDUCATION NETWORKS OF AMERICA**

This Contract, by and between the State of Tennessee, Department of Education, hereinafter referred to as the State, and Education Networks of America, hereinafter referred to as the Contractor, is hereby amended as follows:

1. Delete following Section in its entirety:

A.11.10 Payment. The State agrees to pay within forty-five (45) days after receipt of the invoice covering the delivered items or services in accordance with the Prompt Payment Act of 1985 (TCA 12-4-703). The State is not responsible for any discounts received by the Contractor from the E-Rate Fund, as described in the proposal. The State shall pay the one-time costs and recurring monthly cost for basic service, upon provision of service, as defined as "Total All Payments" (line d.v) Exhibit 3 for No E-Rate funding. The payment for the ConnectTEN network will be received as a credit that will be applied by the State against invoices received from ENA by September 30, 1998 for basic services. If it is determined by the State, in the State's sole discretion, that such payment arrangement is not authorized, then ENA shall pay the State of Tennessee the purchase price for the network by cashier's check or similar form acceptable to the State, on July 1, 1998. To the extent that E-Rate funding is available, the Contractor will apply all E-Rate supplements to enhancing the basic services as defined in Exhibit 1. The State may withhold payment for failure to respond as stated in this contract or other non-performance of responsibilities.

AMENDMENT # 1 TO CONTRACT FA-99-12803-00

CONTRACT
BETWEEN THE STATE OF TENNESSEE,
DEPARTMENT OF EDUCATION
AND
EDUCATION NETWORKS OF AMERICA

The following Section is hereby substituted for Section A 11.10 in the original contract:

A.11.10. Payment. The State agrees to pay within forty-five (45) days after receipt of the invoice covering the delivered items or services in accordance with the Prompt Pay Act of 1985 (TCA 12-4-703). The State is not responsible for any discounts received by the Contractor from the E-rate Fund, as described in the proposal. In the event there is no E-rate funding, the State shall pay the one-time costs and recurring monthly cost for basic service, upon provision of service, as defined as "Total All Payments" (line d.v.) Exhibit 3 for No E-Rate funding. In the event of Full E-rate funding, the State shall pay the one-time costs and recurring monthly cost for all service levels, upon provision of service, as defined in "Total All Payments" (line d.v.) Attachment A (attached hereto) for Full E-Rate funding. Contractor agrees that this amendment does not increase the liability of the State or the amounts available or owed to Contractor. The payment for the ConnecTEN network will be received as a credit that will be applied by the State against invoices received from ENA by September 30, 1998 for basic services. If it is determined by the State, in the State's sole discretion, that such payment arrangement is not authorized, then ENA shall pay the State of Tennessee the purchase price for the network by cashier's check or similar form acceptable to the State, on July 1, 1998. To the extent that E-Rate funding is available, the Contractor will apply all E-Rate supplements to enhancing the basic services as defined in Exhibit 1. The State may withhold payment for failure to respond as stated in this contract or other non-performance of responsibilities.

The other terms and conditions of this Contract not amended hereby shall remain in full force and effect.

IN WITNESS WHEREOF:
Education Networks of America, LLC:


Albert F. Ganier, III

DATE: 4/14/98

Department of Education:


Jane Walters, Commissioner

DATE: 4-14-98

APPROVED:

DEPARTMENT OF FINANCE AND ADMINISTRATION:


John D. Ferguson, Commissioner

DATE: 4/14/98

COMPTROLLER OF THE TREASURY:


William R. Snodgrass, Comptroller of the Treasury

DATE: 4/14/98

ATTACHMENT A

FULL E-RATE FUNDING

Proposed Type of Expense	# of Sites	6 mo per site cost	1st 6 mo. Jul-Dec 98*	2nd 6 mo. Jan-Jun 99*	3rd 6 mo. Jul-Dec 99*	4th 6 mo. Jan-Jun 00*	5th 6 mo. Jul-Dec 00*	6th 6 mo. Jan-Jun 01*	7th 6 mo. Jul-Dec 01*	Total 7.5 yrs.***
Local Site total costs: (a)										
Sites with < 30 computers	400	\$360	\$ 144,000	\$ 144,000	\$ 144,000	\$ 144,000	\$ 144,000	\$ 144,000	\$ 144,000	\$ 1,008,000
Sites with 30-60 computers	1000	\$360	\$ 360,000	\$ 360,000	\$ 360,000	\$ 360,000	\$ 360,000	\$ 360,000	\$ 360,000	\$ 2,520,000
Sites with 61-120 computers	300	\$360	\$ 108,000	\$ 108,000	\$ 108,000	\$ 108,000	\$ 108,000	\$ 108,000	\$ 108,000	\$ 756,000
Sites with >120 computers	100	\$360	\$ 36,000	\$ 36,000	\$ 36,000	\$ 36,000	\$ 36,000	\$ 36,000	\$ 36,000	\$ 252,000
Subtotal for local sites	1800		\$648,000	\$4,536,000						
State Backbone & Internet (b)	95	\$10,596	\$1,006,620	\$1,006,620	\$1,006,620	\$1,006,620	\$1,006,620	\$1,006,620	\$1,006,620	\$ 7,046,340
Any additional Backbone cost (c)			\$110,773	\$110,773	\$116,050	\$142,423	\$142,423	\$142,423	\$142,423	\$ 607,300
Other one-time costs (c)			\$10,988,217	\$2,511,693	\$1,357,693	\$233,253	\$50,000	\$50,000	\$50,000	\$15,440,860
Other recurring costs (c)			\$8,019,036	\$9,636,377	\$6,994,123	\$4,852,055	\$3,623,543	\$3,623,543	\$3,623,543	\$46,423,441
Total All Costs (h) (sum check) (h)			\$20,772,668	\$13,963,667	\$10,322,488	\$6,882,333	\$7,470,588	\$7,470,588	\$7,470,588	\$74,352,941
Sources of Payment (d)										
Amount paid by State & Local** (d.i)			\$2,540,000	\$2,540,000	\$2,740,000	\$2,340,000	\$2,540,000	\$2,540,000	\$2,540,000	\$ 17,180,000
Amount of Other Funding offered by proposer (d.ii)			\$7,500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$ 7,500,000
Savings from existing State & Local paid to proposer for expansion (d.iii)			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Payment Schedule										
Amount paid by State in this time period			\$7,062,707	\$4,747,647	\$3,309,646	\$2,340,000	\$2,540,000	\$2,540,000	\$2,540,000	\$ 25,280,000
Discount paid by FCC to proposer (d.iv)			\$13,709,961	\$9,216,020	\$6,812,842	\$4,542,333	\$4,930,588	\$4,930,588	\$4,930,588	\$49,072,941
Total All Payments: *** (d.v) (sum check)			\$20,772,668	\$13,963,667	\$10,322,488	\$6,882,333	\$7,470,588	\$7,470,588	\$7,470,588	\$74,352,941
State Reserve from Sources of Payments			\$2,977,293	\$769,648	\$0	\$0	\$0	\$0	\$0	\$0
Total Savings proposed by vendor under current state & local costs (e)			\$0	\$0						
Calculations of FCC discount for each 6 mo. Period										
Costs eligible for FCC discount	66%		\$20,772,668	\$13,963,667	\$10,322,488	\$6,882,333	\$7,470,588	\$7,470,588	\$7,470,588	\$74,352,941
Costs ineligible for FCC discount	0%		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sum of all discounts from FCC (sum check)			\$13,709,961	\$9,216,020	\$6,812,842	\$4,542,333	\$4,930,588	\$4,930,588	\$4,930,588	\$49,072,941

* See explanatory note (g)

** See explanatory note (f)

*** See explanatory note (h)

CONTRACT
BETWEEN THE STATE OF TENNESSEE,
DEPARTMENT OF EDUCATION
AND
EDUCATION NETWORKS OF AMERICA

- This Contract, by and between the State of Tennessee, Department of Education hereinafter referred to as the "State" and Education Networks of America, hereinafter referred to as the "Contractor," is for the provision of expanding existing Internet services to Tennessee K-12 public schools, including, bandwidth, equipment and management as described in RFS 97-2 Expansion and Network Operation of ConnectEN, as further defined in the "SCOPE OF SERVICES."

The Contractor is A LIMITED LIABILITY COMPANY. The Contractor's address is:

209 10th Avenue South, Suite 500, Nashville, Tennessee 37203

The Contractor's place of incorporation or organization is STATE OF Tennessee.

A. SCOPE OF SERVICES:

A.1. Contractor Responsibilities. The Contractor will be responsible for providing Internet access and certain other services to all K-12 schools as defined herein, including Internet filtering and necessary Network hardware, Software, Operations and and remote monitoring and management of the ENA owned and operated network communications and systems equipment as defined in RFP, Contractor's response and Cost Proposal and Section A.10. These services will maximize K-12 Internet availability, and allow Tennessee educators and students to access, utilize and leverage Internet-based resources as effectively as possible and meet reliability measures, maintenance and support services defined in Contractor's RFP response.

A.1.a. Service Levels. The Contractor will provide the levels of service for Enhanced and Basic capabilities to be delivered respectively with and without E-Rate funding. The Contractor's response provides the full detail of these services, with a summary of elements from pages 62-64 of the response attached hereto as Exhibit 1.

A.1.b. Performance Levels. The Contractor will provide the performance levels for Basic and Enhanced Services. The Contractor's response provides the full detail of these levels, with a summary of elements from pages 66-68 of the response attached hereto as Exhibit 2.

The Contractor will invoice the State for one-time costs associated with the delivery of basic service and enhanced service levels as defined in Contractor's Cost Proposal as Supplemented (Exhibit 3) which includes the infrastructure to provide the services described in this contract, upon acceptance by the State. These one-time costs will include the provision of basic service and enhanced service levels that are achieved by ENA's provision of hardware, software and software licenses, communications, engineering support, and furniture and are governed by budgetary constraints defined in RFP.

The Contractor will provide all hardware, software and bandwidth to achieve performance levels as defined in RFP and Contractor's response and will perform the help desk operation and remote network management services described in RFP and Contractor's Response. These will be provided at the one-time costs and recurring monthly service charge specified in Cost Proposal. The school sites that the Contractor will initially support at this recurring monthly service charge are the Standard Plan and Alternate Plan school sites (see A.10.1) in operation at the signing of the Contract in 1998. The school sites to be managed will not exceed 1800, and a list of the specific school sites will be provided by June

1, 1998. The scope also includes the e-mail and web server supporting K-12 schools. The Contractor will provide all new functionality as defined in its RFP response for the specified one-time costs and monthly service charge in the Cost Proposal.

Additional locations beyond 1800 that the State may require can be added at any time, at the recurring pricing structure specified in the Contractor Cost Proposal for basic service at \$2822.22 per year. One-time costs specified in the Contractor's Cost Proposal are prorated per site, but not to exceed \$4167 per site. The charge for enhanced service levels are based on availability of full E-Rate funding and the service levels defined in the Contractor's response as listed below.

Scalability Chart for ConnectTEN			
Student Population	Minimum PCs	Line Type	Enhancements
Above 1,200	120	Full 1.5Mbps CDS	Caching Server
476 - 1,199	80-120	Fractional CDS	
251 - 475	25 - 48	Dual ISDN w/High Compression	
<250	24	Single ISDN with High Compression	

All references to "Network" or "ENA Network" in this Scope of Services shall mean the locations that are receiving ENA-provided services and further defined in the RFP, Contractor's Response and Cost Proposal and in Section A.10.

Except as otherwise specified in this document, the one time costs and recurring monthly service charge identified in Cost Proposal as Supplemented is the total compensation for services provided to all public schools in operation in Tennessee during the period of this Contract. Such services are defined in Exhibit 1 and 2 and subject to availability of E-Rate funding as explained in Exhibit 3.

Lastly, if an ENA customer's service level is interrupted due to the failure of a network connection that requires on-site service and support, the Contractor will dispatch a field service technician, or if necessary, a systems engineer, to assist troubleshooting and problem resolution, in a hands-on capacity or for hands-on systems engineering and integration support, as appropriate. The cost of this service is included in the Cost Proposal as Supplemented.

- A.2. Hours of Operation. The Contractor will operate the help desk and Network Operations Center hereinafter referred to as the "ENA NOC" at the Andrew Johnson Building in Nashville, Tennessee. This NOC will operate 7:00 AM to 5:00 PM Central Standard Time, Monday through Friday not including observed school holidays during the school year and State scheduled holidays during the public school summer vacation. Additionally, the Contractor will provide continuous reactive and proactive remote network management services to diagnose, isolate, identify and resolve ENA networking hardware and software faults.
- A.3 Help Desk Services. The Contractor will provide telephone-based technical support to diagnose, isolate, identify and resolve ENA networking hardware and software faults. Authorized ENA customers will be able to contact the ENA NOC via a 1-800 toll free number to request assistance and help desk services. These same customers will also be able contact the ENA NOC via electronic mail, fax, or the world wide web. The Contractor's technical support engineers will receive, categorize, and log the incoming calls, and, where possible, provide immediate problem resolution for the customer. The Contractor will provide an automated action request system and will log, track and resolve each problem or service request in the shortest time possible.

A.3.1. Personnel. The contractor will staff the ENA NOC with qualified technical support engineers. This staff will provide first-tier helpdesk technical support, and operate the control consoles at the ENA NOC. Their responsibilities include responding to ENA customer support requests, alarms, and coordinating activities to problem resolution. In addition, senior support engineers will provide second tier escalation assistance to the ENA NOC support personnel as needed. These senior engineers will also be responsible for the proactive management of the ENA network. They will evaluate reports and statistics gathered from the managed devices. They will determine whether intervention is required to investigate or rectify abnormal conditions, indications, or trends. They will assist in the resolution of network alarms, faults, and problems, and also provide support to the first tier technical support engineers through event closure as needed.

Both teams of engineers will utilize and leverage Contractor-supplied advanced information technology tools, hardware, software, including an integrated network management platform, an automated action request system, and a unified report database. This automation combined with proactive remote network management services will provide excellent service to all users. While automation may reduce the number of staff members required at any given time the network may experience difficulties at other times which require additional staff. Notwithstanding this, the Contractor will provide the necessary staffing to meet the needs of the help desk. The initial planned help desk staffing levels are shown in the following table:

Projected Number of Daily ENA Support Incidents	First Tier Technical Support Engineers ENA NOC (Nashville, TN)	Second Tier Technical Support Engineers	Management ENA NOC (Nashville, TN)
50 - 80	4	2	1

A.3.1.a Service Level Staffing. Staffing will be provided for enhanced service levels in accordance with the chart provided on pp 87 of the Technical Proposal (Exhibit 4).

A.3.2. Escalation Procedures. For more complex problems or service requests that cannot be resolved within a reasonable timeframe of the initial contact with the ENA NOC, the Contractor will provide second tier senior technical support engineers who will further diagnose the problem and take the necessary means to resolve it. For other than routine requests for services, a trouble call that is not acknowledged within a 30 minute timeframe of the initial contact with the ENA NOC will be automatically escalated to second tier support. If a trouble call is not resolved within one hour, the second tier support will be notified. If the call has not been resolved within a total two hour timeframe, then the Contractor's Director of Customer Support will be notified. The Director will work with the Contractor's third tier engineering staff and the appropriate manufacturer's engineers and product development staff until the problem has been resolved.

A.3.3. Management Information Services and Tools. The Contractor will provide the following information technology tools and services:

A.3.3.1. Action request/trouble ticket reporting service. The Contractor will utilize this to log incoming calls and incident reports; provide a cross reference database containing customer profiles, equipment contract information, and network configuration management information; resolve problems; track the status of open incident reports or "cases"; issue trouble tickets to assign support engineers to specific cases; and generate management reports that facilitate the general operation of the help desk.

A.3.3.2. Enterprise network management system. The Contractor will fully integrate all ENA enterprise network management systems, in order to

automate the detection and notification of network problems and potential problems with appropriate alerts, and automatically initiate a trouble ticket. The Contractor can then direct a support engineer to respond to the problem, as appropriate to reduce network downtime and provide overall service to the ENA customer community.

A.3.3.3. Network management display. The Contractor will use alarms, topology maps, node configurations, and other network parameters which graphically display the network for fast and easy communication and decision making. All of the software tools will be fully integrated to provide a single incident tracking system and a unified report database.

A.3.3.4. Voice system. The Contractor will supply and operate for the help desk and ENA customers a voice system that facilitates the routing of inbound calls to the appropriate technical support engineer. In addition, if all support staff at the ENA NOC are busy, the Contractor's system will forward incoming calls to the second level support staff, thereby eliminating or minimizing the duration of calling queues.

A.3.3.5. Quality assurance. Upon resolution of problem reports, they will undergo a quality assurance process. During this process, the Contractor's quality assurance staff will verify that the problem has been satisfactorily resolved. In addition, problem reports will be examined for systemic problems and trends. If systemic problems or trends are identified, they will be reviewed with the State and the actions necessary to resolve the problem as appropriate. Lastly, the problem reports will be archived and maintained on off-line storage.

A.4. Remote network fault management and network alarm monitoring. As an integral part of the provision of Internet services, including the help desk services and operations, the Contractor will deliver proactive and reactive remote network management services. The Contractor will be the single point of contact for problems associated with the physical and logical network elements provided in the RFP for all sites listed in Exhibits. The Contractor will continuously monitor the ENA network for fault-related alarms through application of Contractor hardware and software tools. The Contractor will monitor all active interfaces on the network devices associated with sites in that (1) all such devices are Simple Network Management Protocol (SNMP) compliant and manageable, and (2) such devices are not down due to factors under the State control (such as scheduled outages or maintenance).

A.4.1. Remote fault identification and isolation. The Contractor will use reasonable efforts to have identified, sectionalized or isolated the event or problem to the nearest point of failure after detection of an alarm.

A.4.2. Management of incident. The Contractor will resolve the problem remotely whenever possible, and manage all resolutions whether by a sub-contractor or other service provider. At the time of ticket closure/resolution, the Contractor will summarize the problem cause and resolution in the automated action request system and the problem resolution database.

A.4.3. Hardware maintenance and advanced replacement. The Contractor will provide all hardware maintenance coordination services, to facilitate repair and replacement services of the ENA network. The Contractor will provide two- and four-hour hardware maintenance response time as specified in the Scope of Services, section A.2 above. If the determination that an item needs to be replaced is made by 2:00 PM CST, the replacement item will be shipped overnight the same day. If the advance replacement decision is made after 2:00 PM CST, the replacement item will be shipped the following business day. The Contractor will maintain all inventories and arrangements necessary to meet these replacement criteria and will make regular adjustments as to the items and quantities to be maintained based on reviews of historical trend data of problems.

A.4.4. On-site support. If an ENA site requires on-site service and support, the Contractor will dispatch appropriate personnel to the site to assist troubleshooting and problem resolution in a hands-on capacity or for hands-on systems engineering and integration support, as appropriate,

- at the rates set out in the Cost Proposal as Supplemented. The Contractor will also provide this same service and support at these rates in Cost Proposal as Supplemented.
- A.4.5. Problem reports. The Contractor will provide to a designated State individual, a monthly report detailing the number and type of faults and alarms received for the prior month, by the 15th of the next month. Reports containing details of significant outages (any outage of more than 24 hours, or an event that takes down more than one school at a time) will be prepared by the Contractor on the next business day after the occurrence and posted on the web server.
- A.5. Configuration management. The Contractor will provide Configuration Management Services. These services involve maintaining inventory and configuration information for devices and circuits, administering the configuration of devices, and managing the provisioning activities for devices and circuits.
- A.5.1. Inventory and Configuration Database. The Contractor will create and maintain an inventory and configuration database for managed equipment that includes:
- Identification of device type (router, server)
 - IP addresses
 - Device hardware, software, and interface configurations
 - Circuit information
 - IP address reallocation and implementation with minimal impact to the schools to the extent necessary, to allow addressing for up to 100,000 computers.
- A.5.2. Change management. The Contractor will be responsible for network device configuration changes as the result of device moves, adds and changes: to include circuit vendor management. The Contractor will work with the State to permit all new public schools and any non-public schools as additional sites on the ENA network. To the extent that a school with unique equipment wishes to join the ENA network, the Contractor will review the equipment proposed to determine whether or not it will impact on the management of ENA network.
- A.5.3. Management reporting. Periodic inventory and configuration management reporting including a network topology map and Inventory reports will be provided.
- A.5.4. Configuration and installation assistance. The Contractor will direct and provide all platform installation configuration, using appropriate Contractor personnel. The Contractor will also provide this same service and support at the rates in the Cost Proposal as Supplemented and further defined in chart in section A.1 above.
- A.5.5. Distribution of firmware and software upgrades and "Bug Fixes". The ENA NOC will be the central point of contact for the distribution of firmware and software upgrades and "bug fixes". The Contractor will direct and support the installation and configuration of all upgrades and "bug fixes", either remotely, or alternatively by working via telephone or electronic mail with a locally identified point of contact. The Contractor is responsible directly or through sub-contractors to provide router firmware updates and upgrades for the network devices being managed under this Contract.
- A.5.6. Change Control. The contractor will notify and receive approval to make modifications in A.5.4. and A.5.5., above, to avoid potential network outages which could conflict with specific critical events in school schedules (i.e., school testing, special conferences, etc.)
- A.6. Performance management. In order to maximize network availability, reduce mean time to repair, and improve end user satisfaction, the Contractor will perform continual monitoring of network performance and functions, and ensure that the network is adequately supporting ENA network users
- A.6.1. Performance monitoring and analysis. The Contractor will provide analysis of the throughput and error rates within the managed components of the network. The Contractor will maintain

historical information in order to determine trends and make recommendations to maximize network availability and performance. The performance management will include:

- Protocol analysis
- Throughput analysis
- Trend analysis
- Up-Time analysis

A.6.2. Performance thresholds. Threshold alarms will be set for indication of performance and traffic problems. The Contractor will take action to isolate the cause of performance degradation and to make recommendations to alleviate traffic problems.

A.7. Network audit and network audit responsibility. The Contractor has, under this agreement, an ongoing responsibility to provide certain service levels. To assist in the certification of these services, a yearly audit of all ENA network school sites will be performed. The purpose of this audit is to verify, at a minimum, the following:

- School sites to be monitored
- Enterprise Configuration Map
- Statistics on use and performance levels

A.8. Server management services: E-Mail and Web. The Contractor will provide fault, configuration, and performance management services of the ENA electronic mail and web server hardware platforms, network operating system, and applications to maximize availability of e-mail and Web services related to the provision of Internet services to the ENA user community.

A.9. Management reports and service reviews. The Contractor will conduct monthly service reviews. The dates and location for these monthly service review meetings (or conference calls) will be jointly agreed upon by the State and the Contractor, and will commence the second month following start-up. These sessions should be attended by the State, the Contractor and any sub-contractors both organizations deem needed to improve the performance of the network. This forum will allow review and discussion of quality of service statistics, specific outages or events of concern, and trends in data. The Contractor will also regularly provide help desk usage reports. These reports will contain summary information regarding call statistics (total number of calls fielded, number of calls resolved within a specified time period, etc.) and trend information (such as recurring problems in a specific area).

A.10. Contractor demarcation responsibility for ENA Standard and Alternate Sites.

A.10.1. Definitions. "Standard Plan Sites" are defined as those, as of July 1, 1998 that are composed of a specific configuration of Cabletron Systems router hardware (formerly Network Express International). ENA Standard Plan Sites are those schools with equipment and bandwidth defined and provided by ENA. "Alternate Plan Sites" are defined as those, as of July 1, 1998 that are composed of other heterogeneous mixtures of vendor equipment which have been certified and achieved network connectivity via an interoperability test with the Tennessee Department of Education. At any time a Local Education Agency site may choose to become an ENA Standard plan site by one of the following options if full E-Rate funding is in place: 1) offering its existing equipment to the Contractor for review and receiving the Contractor's approval to declare the Local Education Agency's existing equipment to be considered Standard Plan, or 2) the Contractor receives ownership of the Local Education Agency's equipment, and replaces it with ENA Standard Plan equipment. If full E-Rate funding is not in place, the Local Education Agency purchases the Contractor's equipment for use; and thereby getting the regular services as defined in the contract as ENA Standard Plan.

A.10.2. Demarcation responsibility. The point of demarcation for the Contractor responsibilities for Standard Plan sites is all service levels defined for K-12 schools. The Contractor responsibilities for Alternate Plan sites are limited to service levels defined for Education Hub Sites, the Internet and problem resolution coordination between the public school system and an ENA network connection or a State-Backbone network access point (TAP).

A.10.3. Contractor's interface to other parties. In a network as complex as the ENA network, the devices under management responsibility of the Contractor interface to devices and communications lines which are currently managed by other third parties. The Contractor technical support personnel will take responsibility to avoid "finger pointing" situations, however, the Contractor responsibilities are limited as follows:

- (i) For Standard Plan sites, the Contractor technical support personnel will assist a local school representative to facilitate connecting Local Area Network wiring and servers to the ENA network. Assistance must be provided for remote troubleshooting and possible identification of incompatibilities.
- (ii) For Standard Plan sites and Alternate Plan sites, the Contractor technical support personnel will assist State of Tennessee Office of Information Resource Network Operations Center personnel in isolating network problems between Contractor managed network and those of the State of Tennessee network and beyond. Assistance is provided for coordinated trouble shooting, fault detection and isolation, but not for ultimate problem resolution.
- (iii) For Standard Plan sites and Alternate Plan sites, the Contractor technical support personnel will be responsible directly or through subcontractors in isolating communication line problems between ENA managed sites. Responsibilities include coordinated trouble shooting, fault detection and isolation, and problem resolution.
- (iv) For Standard Plan devices, the Contractor personnel will be responsible for all equipment in isolating equipment firmware and software bugs, and will provide equipment warranty and maintenance.
- (v) For Server management services, the Contractor personnel will be responsible for operation of equipment assuming existing equipment manufacturer hardware and software maintenance agreements are in effect, and provide changes as needed over the life of the contract.

Notwithstanding the above limitations, it is the intention that the Contractor has the primary responsibility to manage all component parts provided by the Contractor or any Sub-Contractor on behalf of the State to maintain the viability and the integrity of the network. The Contractor will serve as the agent for the State with all sub-contractors.

A.10.3 State-Provided Software. Any software provided by the State pursuant to this contract will be licensed pursuant to the software manufacturer's standard software licensing agreement.

A.10.4 Intellectual Property Rights. The Contractor retains all right, title, and interest in and to any software and other intellectual property that it provides to or uses on behalf of the State pursuant to this contract and acknowledges and agrees that the Contractor is free to use software and intellectual property in providing services to other customers.

A.11. State Responsibilities.

- A.11.1. Help Desk and Network Management Interface. The State and Contractor personnel will communicate through a specific set of contacts. Names and phone numbers of the individuals responsible for assisting the Contractor will be provided. This list will include contacts and numbers for business day and off-hours, along with appropriate points of contact for escalation. The State agrees to supply the Contractor with any changes to this list on a periodic basis.
- A.11.2. Point of Presence Circuit. The State will provide the ENA NOC access to the State of Tennessee Network- TNII. This circuit will serve as the link from the Contractor's monitoring equipment at the ENA NOC to the State of Tennessee network; and will be at a minimum of 10Mb Ethernet bandwidth. The State will also provide an ISDN line and port connection on the Davidson County