



Biannual Report for Kan-ed Evaluation

Submitted by
Office of Educational
Innovation and Evaluation
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**Kan-ed Evaluation Biannual Report
(December 16, 2011)**

TABLE OF CONTENTS

Table of Contents	i
Summary	ii
Appendix 1: Kan-ed 2.0 Connect Program Update	1-9
Appendix 2: Membership Update	1-5
Appendix 3: 2011 Member Record Update	1-9
Appendix 4: Proposed Circuit Utilization Survey	1-2
Appendix 5: Kan-ed Study Committee Summary	1-125
Appendix 6: Legislative Post Audit Summary	1-2
Appendix 7: Kan-ed Advisory Committee Summary	1-15
Appendix 8: Legislative Tools Summary	1-6

Kan-ed Evaluation Biannual Report (December 16, 2011)

This report provides summary information of the evaluation activities for Kan-ed conducted between July 1 and December 15, 2011. The data collection instruments and analyses are reported and compiled in the attached appendices so that essential information is easily accessible. The accomplishments of this period are bulleted below while the planned accomplishments for the next period (January 1 – June 30, 2012) are listed on the following page. Brief summaries of the sections included in this report begin on page iii.

ACCOMPLISHMENTS THIS PERIOD

- Continued development of the Invoices and Reimbursements database.
- Documented status of Kan-ed member connections to Kan-ed 2.0.
- Updated an interactive online form to conduct Annual Member Record Update.
- Completed Annual Member Record Update and imported changes in Kan-ed Membership Database.
- Collected impact data that may be used to prepare impact stories related to connectivity.
- Completed Annual Membership Verification to verify eligibility of members in preparation for the 2012 Kansas Legislative Session.
- Coordinated and finalized the collection of Letter of Agency (LOA) and Children's Internet Protection Act (CIPA) compliance (form 479) forms from Kan-ed members for Kan-ed E-Rate application.
- Developed surveys to gather feedback about the Kan-ed 2.0 connection process and usage of and satisfaction with Kan-ed network and other member services, for Hospital members and Higher Education members separately.
- Attended and documented two Kan-ed Study Committee meetings on September 13 and October 27.
- Attended and documented two Kan-ed Advisory Committee (KAC) meetings on September 16 and December 7.
- Provided requested data directly to the Legislative Post Audit (LPA) team as well as to other entities that were preparing information for LPA.
- Developed a survey to gather input on members' circuit utilization to assist in preparations for changes to the Kan-ed network.
- Prepared E-Rate training feedback form to administer to workshop participants.
- Provided feedback and updated data for documents prepared by Kan-ed staff for the legislature and other organizations.
- Updated legislative data sheets and impact statement sheet for 2012 Legislative Session.
- Provided requested data and updates and attended required meetings.

PLANNED ACCOMPLISHMENTS NEXT PERIOD

- Finalize impact statement sheet, which will accompany the legislator-specific data sheets.
- Continue to document and refine site information per Kan-ed member.
- Develop a site survey record update and launch to connected sites.
- Continue follow-up with Kan-ed members to gather impact stories related to connectivity.
- Conduct follow-up with Enhancing Technology grant recipients to evaluate how funds were used.
- Document E-Rate hotline usage by Kan-ed members, if requested.
- Conduct survey to gather input on members' circuit utilization to assist in preparations for changes to the Kan-ed network.
- Continue to respond to LPA data requests.
- Continue to attend and document KAC meetings.
- Provide requested data during the 2012 Kansas Legislative Session and provide updates for legislative link on Kan-ed website.
- Continue to provide requested data and updates to staff and attend required meetings.

As demonstrated in the bullets on the previous page, a variety of evaluation and coordination tasks were performed by OEIE staff from July 1 – December 15, 2011. A brief summary of each activity is included below with data collection instruments and complete analyses reported and compiled in the attached appendices.

Kan-ed 2.0 Connect Program Update

OEIE tracks which members are connected to the Kan-ed network to keep this information up-to-date in the Membership Database. As of December 1, 2011, a total of 606 sites are directly connected to the Kan-ed 2.0 network, and 83 sites are in the process of being connected. Each Kan-ed member can have multiple sites connected to the network; these 606 connected sites correspond to 453 unique Kan-ed members, and the 83 in process sites correspond to 47 unique Kan-ed members. An additional eight members (including an additional 17 sites) are currently connected compared to the numbers reported in the December 2010 Biannual Evaluation Report. The breakdown of the currently connected members by constituent group and region is displayed in Appendix 1, along with a list of *connected* and *in process* members.

Membership Update

OEIE tracks Kan-ed membership on a continual basis and conducts an annual Membership Verification during which the eligibility of members is verified based on the Kan-ed legislative statute. The current Kan-ed membership, as of December 1, 2011, is comprised of 879 members. More information about the membership verification process and changes observed in the Kan-ed membership are included in Appendix 2.

2011 Member Record Update

An annual Member Record Update is conducted by OEIE to verify and update contact information for each Kan-ed member organization's Kan-ed contacts. The contacts serve as the principal contacts in a member organization for any Kan-ed related communication. These contacts are updated on an annual basis due to frequent changes in positions and/or their contact information. As in 2010, the 2011 Member Record Update process was conducted using an interactive online form. The update was completed by 850 Kan-ed members, and 443 of these members required changes to their information. A complete description of the process and results of the 2011 Member Record Update are included in Appendix 3.

Kan-ed 2.0 Connection Process and Impact Survey

OEIE developed a collection of surveys for Hospital and Higher Education members to gather feedback related to the impact of the network. For those sites that had obtained a connection to the Kan-ed 2.0 network, the survey was designed also to gather feedback about the Kan-ed 2.0 connection process. Given that some sites are connected to Kan-ed 2.0 and others are not, multiple versions of the survey were necessary for each constituent group. Similar surveys were developed and administered to the Library and K-12 School District members in 2010. At the time the Hospital and Higher Education surveys were developed, it was thought that the information provided by members in response to these surveys would put Kan-ed in a better position to make decisions based on member needs. Since that time, Kan-ed has been considering and preparing for potential changes to the network, and the Kan-ed Director decided to cancel the administration of these surveys to instead focus on developing a Kan-ed Circuit Utilization Survey (described immediately below), which will put Kan-ed in a better position to make decisions for the future of the network.

Proposed Circuit Utilization Survey

In response to a legislative Interim Committee inquiry related to the efficiency and effectiveness of Kan-ed, the Kan-ed Director requested that OEIE work with them to develop a survey to send to the Kan-ed membership. This survey would gather information about each member's current bandwidth utilization and service providers, which would put Kan-ed in a more informed position as it prepares for changes to the structure of the program and network. A description of the proposed Circuit Utilization Survey purpose and intended methods is located in Appendix 4.

Kan-ed Study Committee Summary

The OEIE evaluation team attended and documented two Kan-ed Study Committee meetings in Topeka. The first meeting, on September 13, provided an opportunity to educate the committee on the background of Kan-ed and allow testimony about Kan-ed and its services by constituent groups and the telecommunications industry. The second meeting, held on October 27, included testimony from the Kan-ed and KanREN Directors regarding their vision for a future partnership, a Kan-ed Circuit Bandwidth Utilization Report, and cost-benefit reports of Kan-ed content services. A description of the activities conducted related to the Kan-ed Study Committee is located in Appendix 5.

Legislative Post Audit Summary

In September 2011, the Legislative Post Audit (LPA) Committee approved a request for a performance audit of Kan-ed entitled “Kansas Board of Regents: Evaluating the Effects of Eliminating the Kan-ed Program” to address the question “*What critical services does Kan-ed provide its connected members, and could members afford to pay for these services?*”. The entrance interview for the Post Audit was conducted on September 28, 2011 with subsequent meetings between LPA and Kan-ed staff continuing through the fall. OEIE served as a point of contact for the LPA team and worked in conjunction with Kan-ed staff to provide data relating to the question above to post audit staff. A summary of OEIE’s work related to the LPA is located in Appendix 6.

Kan-ed Advisory Committee Summary

The Kan-ed Advisory Committee (KAC) was created by the Kansas Board of Regents (KBOR), and its role is to advise Kan-ed staff and KBOR as to the development, implementation, and administration of the network. The KAC is composed of 15 members, including three representatives of each of the Kan-ed member constituent groups (Higher Ed, Hospitals, K-12 Schools, Libraries) and the telecommunications industry. Four KAC meetings were held in Calendar Year 2011. OEIE attended each meeting and assisted by taking meeting minutes. A summary of the KAC meetings and approved meeting minutes are located in Appendix 7.

Legislative Tools Summary

The 2012 Kansas Legislative Session begins January 9, 2012. Throughout the legislative session, OEIE will provide data to Kan-ed staff to support their testimony and respond to legislator questions. In preparation for the upcoming Legislative Session, OEIE has assisted Kan-ed in developing legislator-specific data sheets and an impact statement sheet. These documents will be provided along with impact stories within legislative packets to each legislator. Descriptions of these legislative tools, along with examples of a data sheet, an impact statement sheet, and an impact story can be found in Appendix 8.

APPENDICES

APPENDIX 1

Kan-ed 2.0 Connect Program
Update

Kan-ed 2.0 Connect Program Update

Background

In 2008, Kan-ed contracted with AT&T to provide an Advanced Virtual Private Network (AVPN), called Kan-ed 2.0. The Kan-ed 2.0 network allows members to have one integrated connection to receive both commercial Internet and private network connectivity to Kan-ed 2.0 for videoconferencing. The new network was introduced to Kan-ed members in March 2008 through an email from the Kan-ed Executive Director.

In fall 2008, the Office of Educational Innovation and Evaluation (OEIE) began working with Kan-ed and Network Operations Center (NOC) staff to develop a streamlined process for connecting members to the Kan-ed 2.0 network. Members were invited to participate in the Kan-ed 2.0 Connect Program in December 2008. For a full description of the process, see Appendix 1 of the Fiscal Year 2009 Kan-ed Evaluation Annual Performance Report.

Results

OEIE developed an online administrative interface to the online site survey forms that are required to be completed by members prior to connection to the Kan-ed 2.0 network. A detailed explanation with screenshots of the online administrative interface can be found in Appendix 1 of the Fiscal Year 2010 Kan-ed Evaluation Annual Performance Report. The connection numbers reported below are the result of ongoing use of this online interface by NOC staff, the Kan-ed Network Access Manager, and OEIE to ensure accuracy of the numbers.

As of December 1, 2011, a total of 606 sites are directly connected to the Kan-ed 2.0 network, and 83 sites are in process of being connected. "In process" status indicates that the member has begun the process to connect a site to Kan-ed 2.0 but either has not made the final decisions necessary to complete their connection (e.g., what connection speed they need, which Internet Service Provider they plan to use, or whether or not they even plan on connecting) or has not yet been connected via AT&T or a Kan-ed Authorized Provider (KAP). Each Kan-ed member can have multiple sites connected to the network; these 606 connected sites correspond to 453 unique Kan-ed members, and the 83 in process sites correspond to 47 unique Kan-ed members that do not have any existing connections. It is important to note that many members have only one direct connection to the Kan-ed network, yet all of their sites may be connected to Kan-ed through the use of a local area network (LAN) or wide area network (WAN). Sites connected indirectly through a LAN or WAN are not captured in the figures reported above. The 453 members with a direct connection to the network and the 47 members in process represent a total of 1,598 active sites that are either connected already or have the potential to have access to Kan-ed 2.0 through their member's LAN or WAN.

The current breakdown of the connected and in process members is displayed by constituent group and region in the table below. Currently, there are 879 Kan-ed members. Of the total membership, connections to the Kan-ed 2.0 network have been established by 81% of the higher education members, 55% of the hospital members, 66% of the K-12 members, and 45% of the library members. Since the June 2011 Annual Evaluation Report, the total number of Kan-ed 2.0 connected members has increased by two unique members with seven new directly connected sites. The total number of connected members has increased from 292 connected members on Kan-ed 1.0, as last reported in the December 2008 Biannual Evaluation Report, to 453 connected members on Kan-ed 2.0. A current list of connected and in process members begins on page 3.

Kan-ed 2.0 Connections as of December 1, 2011								
Constituent Group	Region							
	Central	North Central	North East	North West	South Central	South East	South West	TOTAL
Higher Education								
2.0 Connected Members	4	5	10	2	11	6	3	41
2.0 In Process Members	0	0	1	0	1	0	0	2
Total Potential for 2.0	4	5	11	2	12	6	3	43
Total Kan-ed Members	6	6	13	2	16	7	3	53
Percent	67%	83%	85%	100%	75%	86%	100%	81%
Hospitals								
2.0 Connected Members	13	7	9	11	11	5	17	73
2.0 In Process Members	3	1	2	0	2	2	1	11
Total Potential for 2.0	16	8	11	11	13	7	18	84
Total Kan-ed Members	22	15	36	11	31	16	22	153
Percent	73%	53%	31%	100%	42%	44%	82%	55%
K-12								
2.0 Connected Members	26	25	38	13	48	31	27	208
2.0 In Process Members	1	1	3	1	5	3	0	14
Total Potential for 2.0	27	26	41	14	53	34	27	222
Total Kan-ed Members	42	34	70	21	78	49	42	336
Percent	64%	76%	59%	67%	68%	69%	64%	66%
Libraries								
2.0 Connected Members	2	37	40	3	4	15	30	131
2.0 In Process Members	11	0	1	5	0	3	0	20
Total Potential for 2.0	13	37	41	8	4	18	30	151
Total Kan-ed Members	56	41	49	22	76	55	38	337
Percent	23%	90%	84%	36%	5%	33%	79%	45%
Total Kan-ed Members	126	96	168	56	201	127	105	879
Total 2.0 Connected Members	45	74	97	29	74	57	77	453
Total 2.0 In Process Members	15	2	7	6	8	8	1	47
Percent of Members Connected	36%	77%	58%	52%	37%	45%	73%	52%
Percent of Members In Process	12%	2%	4%	11%	4%	6%	1%	5%
Percent Connected or In Process	48%	79%	62%	63%	41%	51%	74%	57%

Kan-ed 2.0 Status: Connected & In Process

* indicates members that are 'in process'

Abilene Public Library
Abilene USD 435
Allen County Community College
Altoona-Midway USD 387*
Americus Township Library
Andover USD 385
Anthony Medical Center
Anthony-Harper USD 361
ANW Special Ed Cooperative #603
Argonia Public Schools USD 359
Arkansas City USD 470
Arma City Library
Ashland City Library
Ashland Health Center
Ashland USD 220
Atchison County Community Schools USD 377
Atchison Public Library
Atchison Public Schools USD 409
Attica USD 511
Auburn Washburn USD 437
Axtell Public Library
Baker University
Baldwin City Public Library
Baldwin City USD 348
Barber County North USD 254
Barnard Library*
Barnes Reading Room (Public Library)
Barnes USD 223
Barton County Community College
Basehor Community Library
Basehor-Linwood School Dist USD 458
Beattie Public Library
Beck-Bookman Library
Belle Plaine USD 357
Benedictine College

Bern Community Library
Bethany College*
Bethel College
Bird City Library*
Bison Community Library*
Blue Rapids Public Library
Blue Valley USD 384
Bob Wilson Memorial-Grant County Hospital
Bonner Springs City Library
Brewster USD 314
Bronson Public Library
Bucklin Public Library
Bucklin USD 459
Buhler USD 313
Burlingame Community Library
Burlingame Public School USD 454
Burlington USD 244
Burnley Memorial Library
Burns Public Library
Burrton USD 369
Butler Community College
Caldwell USD 360
Caney City Library
Canton-Galva USD 419*
Carbondale City Library
Cedar Vale USD 285
Central Christian College of Kansas
Central Heights USD 288
Central Kansas Library System
Central Plains USD 112
Central USD 462
Centralia Community Library
Centre USD 397
Chanute Public Library
Chanute Public Schools USD 413
Chapman Public Library
Chapman USD 473
Chase County USD 284

Chase-Raymond USD 401
 Chautauqua County Community USD 286
 Cheney USD 268
 Cherokee USD 247
 Cherryvale-Thayer USD 447
 Cheyenne County Hospital
 Cheylin USD 103
 Children's Mercy South
 Cimarron City Library, Gray County
 Cimarron-Ensign USD 102
 Circle USD 375
 Citizens Medical Center
 Clara Barton Hospital
 Clay Center Carnegie Library
 Clay County Medical Center*
 Clay County USD 379
 Clifton Public Library
 Cloud County Community College
 Cloud County Health Center
 Coffey County Hospital
 Coffey County Library
 Coffeyville Community College
 Coffeyville Public Library
 Coffeyville Regional Medical Center*
 Coffeyville USD 445
 Colby Community College
 Coldwater-Wilmore Regional Library
 Comanche County USD 300
 Community HealthCare System Inc Hospital-
 Onaga
 Community Memorial Healthcare
 Concordia USD 333
 Conway Springs USD 356
 Copeland USD 476
 Corning City Library
 Council Grove Public Library
 Cowley County Community College
 Crest USD 479
 dba F.W. Huston Medical Center (Jefferson
 County Memorial Hospital)

Decatur County Hospital
 Deerfield USD 216
 Delaware Township Library
 Dexter USD 471
 Diocese of Kansas City
 Diocese of Salina
 Diocese of Wichita
 Dodge City Community College
 Dodge City USD 443
 Doniphan West USD 111
 Donnelly College
 Dorothy Bramlage Public Library
 Douglass Public Schools USD 396
 Dudley Township Public Library
 Durham-Hillsboro-Lehigh USD 410
 Dwight Public Library
 Education Services and Staff Development
 Association of Central Kansas (ESSDACK)
 #622
 Edwards County Hospital
 Effingham Community Library
 El Dorado USD 490
 Ellinwood District Hospital*
 Ellinwood Public Schools USD 355*
 Ell-Saline USD 307
 Ellsworth County Medical Center
 Ellsworth USD 327
 Elm Creek Township Library
 Elmendaro Township Library
 Emporia Public Library
 Emporia State University
 Erie City Public Library*
 Erie-Galesburg USD 101
 Eudora Public Library
 Eudora Unified School District USD 491
 F. Lee Doctor Library [Agra City Library]*
 Fairfield USD 310
 Flint Hills Technical College
 Flinthills USD 492
 Florence Public Library

Ford City Library
 Formoso Public Library*
 Fort Hays State University
 Fort Scott Community College
 Fowler Public Library
 Fowler USD 225
 Frankfort City Library
 Fredonia Regional Hospital
 Fredonia USD 484
 Frontenac Public Schools USD 249
 Galena USD 499
 Garden City Community College
 Garden City USD 457
 Garnett USD 365*
 Girard USD 248
 Goddard USD 265
 Goessel Public Library
 Goessel USD 411*
 Golden Plains USD 316
 Goodland Regional Medical Center
 Gove City Library*
 Gove County Medical Center
 Graham County Hospital
 Graham County USD 281
 Graves Memorial Public Library
 Great Bend USD 428
 Great Plains of Ottawa County, Inc.
 Greeley County Health Services
 Greeley County Library
 Greeley County Schools USD 200
 Grenola Public Library*
 Grinnell Public Schools USD 291
 Grisell Memorial Hospital District #1
 Halstead USD 440
 Hamilton County Hospital
 Hamilton County Library
 Hamilton USD 390
 Hanover Hospital
 Hanover Public Library
 Hanston City Library

Harper Hospital District #5
 Haskell Indian Nations University *
 Haven Public Schools USD 312
 Hays Medical Center, Inc.
 Healy Public Schools USD 468
 Herington Municipal Hospital
 Herington Public Library
 Herington USD 487
 Hesston College
 Hiawatha Community Hospital*
 Hiawatha USD 415
 Highland Community College
 Hillsboro Community Hospital
 Hillsboro Public Library
 Hodgeman County Health Center
 Hodgeman County Schools USD 227
 Holcomb USD 363
 Holton Community Hospital
 Holton USD 336
 Hope Community Library
 Horton Community Hospital
 Horton Public Library
 Hospital District #1 of Rice County
 Hugoton Public Schools USD 210
 Humboldt Public Library
 Hutchinson Community College
 Hutchinson Public Schools USD 308
 Independence Community College
 Independence Public Library
 Independence USD 446
 Ingalls USD 477
 Inman USD 448
 Iola Public Library
 Jamestown City Library*
 Jayhawk USD 346
 Jefferson County North USD 339
 Jefferson West USD 340
 Jetmore Public Library
 Jewell County Hospital
 Jewell Public Library*

Johnson County Community College
 Kansas City Kansas Community College
 Kansas State School for the Blind
 Kansas State School for the Deaf
 Kansas State University
 Kansas Wesleyan University
 Kaw Valley USD 321
 Kearny County Hospital
 Kearny County Library
 Kickapoo Nation Schools
 Kingman Community Hospital (Ninnescah
 Valley Health Systems, Inc.)
 Kingman-Norwich USD 331
 Kinsley Public Library
 Kinsley-Offerle USD 347
 Kiowa County Library
 Kiowa County Memorial Hospital
 Kismet Public Library
 Kismet-Plains USD 483
 Labette County USD 506*
 Labette Health*
 LaCrosse USD 395
 Lakin USD 215
 Lane County Hospital
 Lane County Library
 Lang Memorial Library*
 Lansing Community Library
 Lansing USD 469*
 Larned State Hospital
 Lawrence USD 497
 Lebo-Waverly USD 243
 Lenora Public Library*
 Leonardville City Library
 LeRoy-Gridley USD 245
 Liberal Memorial Library
 Library District #1, Doniphan County*
 Library District #1, Lyon Co.
 Library District #2 Linn County
 Lincoln Carnegie Library
 Lincoln USD 298

Lindsborg Community Hospital
 Linn County Library Dist #1
 Linwood Community Library Dist #1
 Little River USD 444
 Logan County Hospital
 Logan USD 326
 Louisburg USD 416
 Louisburg/Library District #1, Miami Co
 Lyndon Carnegie Library
 Lyndon USD 421
 Lyons USD 405
 Macksville USD 351*
 Madison-Virgil USD 386
 Maize USD 266
 Manhattan Area Technical College
 Manhattan Public Library
 Mankato City Library*
 Marais des Cygnes Valley USD 456
 Marion City Library
 Marion-Florence USD 408
 Marmaton Valley USD 256
 Mary Cotton Public Library
 Marysville Public Library
 McLouth Public Library
 McLouth USD 342*
 McPherson College
 Meade District Hospital/Artesian Valley
 Health System
 Meade Public Library
 Meade USD 226
 Meadowlark Library
 Medicine Lodge Memorial Hospital*
 Memorial Health System (Hospital District
 #1 Dickinson)
 Memorial Hospital, Inc.
 Mercy Hospital (Moundridge)*
 Meriden Community Library
 Mill Creek Valley USD 329
 Minimally Invasive Surgical Hospital
 Minneola City Library

Minneola District Hospital
 Minneola USD 219
 Mission Valley USD 330
 Mitchell County Hospital Health Systems
 Montezuma Township Library
 Montezuma USD 371
 Moore Family Library
 Morrill Public Library
 Morris County Hospital
 Morris County USD 417
 Morton County Public Library
 Mulvane USD 263
 Nemaha Central Schools USD 115
 Nemaha Valley Community Hospital
 Neodesha USD 461
 Neosho County Community College
 Neosho Memorial Regional Medical Center
 Ness City Public Library
 Ness City USD 303
 Ness County Hospital District #2*
 Newton Public Library
 Nickerson USD 309
 North Jackson USD 335
 North Lyon County USD 251
 North Ottawa County USD 239
 Northeast Kansas Education Service Center
 #608 (Keystone Learning Services)
 Northeast Kansas Library System
 Northeast USD 246
 Northwest Kansas Educational Service
 Center #602
 Northwest Kansas Library System
 Northwest Kansas Technical College
 Norton Community Schools USD 211*
 Norton County Hospital
 Nortonville Public Library
 Oakley USD 274
 Oberlin USD 294
 Onaga-Havensville-Wheaton USD 322
 Osage City Public Library

Osawatomie Public Library
 Osawatomie USD 367*
 Osborne County Memorial Hospital*
 Osborne County USD 392
 Oskaloosa Public Library
 Oskaloosa Public Schools USD 341
 Oswego Community Hospital
 Oswego USD 504
 Otis Community Library*
 Otis-Bison USD 403
 Ottawa Library
 Ottawa University
 Overbrook Public Library
 Oxford USD 358
 Palco USD 269
 Paola Free Library
 Paradise USD 399
 Pawnee Heights USD 496
 Peabody Township Library
 Peabody-Burns USD 398
 Perry Public Schools USD 343
 Phillips County Hospital
 Pioneer Memorial Library
 Piper-Kansas City USD 203
 Pittsburg Public Library
 Pittsburg State University
 Pittsburg USD 250
 Plains Community Library
 Plainville USD 270
 Pleasanton USD 344
 Pottawatomie Wabaunsee Regional Library
 Prairie Hills USD 113
 Prairie View USD 362
 Pratt Community College
 Pratt Regional Medical Center
 Pratt USD 382
 Prescott City Library*
 Pretty Prairie USD 311
 Protection Township Library
 Quinter Public Schools USD 293

Ransom Memorial Hospital*
 Ransom Public Library
 Rawlins County Health Center
 Renwick USD 267
 Republic County Hospital
 Richmond Public Library
 Riley City Library
 Riverside USD 114
 Riverton USD 404
 Rock Creek USD 323
 Rock Hills USD 107
 Rolla USD 217
 Rose Hill Public Schools USD 394
 Rossville Community Library
 Royal Valley USD 337
 Rural Vista USD 481
 Rush County Memorial Hospital*
 Russell County USD 407
 Russell Regional Hospital
 Sabetha Community Hospital
 Santa Fe Trail USD 434
 Satanta District Hospital
 Scott County Hospital
 Scott County USD 466
 Seaman USD 345
 Sedan City Hospital
 Sedgwick Public Schools USD 439*
 Selden Public Library*
 Seneca Free Library
 Seward County Community College/Area
 Technical School
 Sharon Springs Public Library*
 Sheridan County Health Complex
 Silver Lake Library
 Silver Lake USD 372
 Smith County Memorial Hospital
 Smoky Hill/ Central Kansas Education
 Service Center #629
 Smoky Valley USD 400
 Solomon Public Library

Solomon USD 393
 South Barber USD 255
 South Brown County USD 430
 South Central Kansas Education Service
 Center #628
 South Central Kansas Library System
 South Central Kansas Special Education
 Cooperative #605*
 South Haven USD 509
 Southeast Kansas Education Service Center
 #609 at Greenbush
 Southeast Kansas Library System
 Southeast of Saline USD 306
 Southern Cloud USD 334
 Southern Lyon County USD 252
 Southwest Kansas Library System
 Southwest Medical Center
 Southwest Plains Regional Service Center
 #626
 Southwestern College
 Spearville Township Library
 Spearville USD 381
 St Francis Community Schools USD 297
 St John-Hudson USD 350*
 St. Catherine Hospital
 St. Francis Health Center
 St. Rose Ambulatory and Surgical Center
 Stafford County Hospital
 Stanton County Health Care Facility
 Stanton County Library
 Stevens County Library
 Stockton USD 271
 Stormont-Vail Healthcare Inc.
 Sumner County Educational Services
 Interlocal #619
 Sunshine City Library*
 Sylvan Grove Public Library*
 Sylvan Grove USD 299
 Tabor College

Technology Excellence in Education
Network (TEEN) #632
Three Lakes Educational Cooperative #620
Thunder Ridge USD 110
Tonganoxie Public Library
Trego County Lemke Memorial Hospital
Triplains USD 275
Troy Public Schools USD 429
Twin Valley USD 240
Udall USD 463
Ulysses USD 214
Uniontown USD 235
University of Kansas
University of Saint Mary
Utica Public Library
Valley Center Public Schools USD 262
Valley Falls USD 338
Valley Heights USD 498
Vermillion Public Library
Vermillion USD 380
Via Christi Hospital
Victoria USD 432
Wamego Public Library
Washburn University
Washington County Schools USD 108
Washington Public Library
Waterville Public Library
Wellington Christian Academy
Wellington USD 353
Wellsville City Library
Wellsville USD 289
Weskan USD 242
Wesley Medical Center
Wetmore Public Library
Wheatland USD 292
White City Public Library
Wichita Area Technical College
Wichita County Health Center
Wichita Public Library
Wichita State University

Wichita USD 259
Williamsburg Community Library
Winchester Public Library
Woodson USD 366
Yates Center Public Library

APPENDIX 2

Membership Update

December 2011 Membership Update

The current Kan-ed membership, as of December 1, 2011, is 879 members. The table below displays the current membership numbers by constituent group and region. Membership updates are summarized below by constituent group and detailed in the Membership Verification beginning on page 2.

Higher Education: There were no changes to the Higher Education membership between June 2011 and December 2011.

Hospital: There were no changes to the Hospital membership between June 2011 and December 2011.

K-12: K-12 membership decreased by three organizations as a result of consolidations since June 2011.

Library: Library membership decreased by one organization since June 2011. Two libraries closed, but one new library was opened.

Kan-ed Membership as of December 1, 2011								
Constituent Group	Region							
	Central	North Central	North East	North West	South Central	South East	South West	TOTAL
Higher Education	6	6	13	2	16	7	3	53
Hospitals	22	15	36	11	31	16	22	153
K-12	42	34	70	21	78	49	42	336
Libraries	56	41	49	22	76	55	38	337
Total	126	96	168	56	201	127	105	879

2011 Membership Verification

An annual Kan-ed Membership Verification is conducted each spring to confirm the eligibility status, based on Kansas Statute, of each member in the Kan-ed database. A midyear membership verification was conducted in October 2011 for the purpose of updating membership numbers in preparation for the 2012 Kansas Legislative Session. Please note that all current membership numbers included in this report are as of December 1, 2011.

For each constituent group, the following information is provided:

- 1) Legislative **definition** of constituent group.
- 2) **Interpretation** of the statute by representatives within the constituent group.
- 3) Official listing of institutions for each constituent group obtained from the agencies that govern or license each and utilized as the **resource** for the verification process.
- 4) Description of the verification **process** utilized including detailed results obtained at each step during verification.

Higher Education

Definition of Higher Education

“School”, as defined in Senate Substitute for House Bill 2035, means: any community college, technical college, area vocational school, area vocational-technical school, or Kansas educational institution, as defined in K.S.A. 2000 Supp. 74-32,120 and amendments thereto.

Interpretation of Statute by Representatives from the Board of Regents

An entity must fall into one of the following classifications and be accredited by the North Central Association to be eligible for Kan-ed membership:

1. Kansas Board of Regents Universities
2. Private Postsecondary Colleges and Universities
3. Municipal University
4. Community Colleges, Technical Colleges, and Area Technical Schools

Resource

Kansas Educational Directory 2011-12, published by the Kansas State Department of Education, and available at the following link: <http://www.ksde.org/Default.aspx?tabid=4833>

Process

Higher education members listed in the Kan-ed database were verified against lists of Kansas Board of Regents Universities; Private Postsecondary Colleges and Universities; Municipal Universities; and Community Colleges, Technical Colleges, and Area Technical Schools reported in the *Kansas Educational Directory 2011-12*.

Result:

- There were no updates to the higher education membership.

Hospitals

Definition of Hospital

Senate Substitute for House Bill 2035 defines “Hospital” as a “licensed hospital, as defined in K.S.A. 65-425 and amendments thereto”.

Interpretation of Statute by Representatives from the Kansas Hospital Association

Representatives from the Kansas Hospital Association interpreted the Kan-ed Statute and KSA 65-425 as: hospital is defined as "general hospital", "critical access hospital", or "special hospital". These categories of hospitals are directly linked to how they are licensed with the Kansas Department of Health and Environment (KDHE) Bureau of Health Facilities. In summer 2006, this definition was expanded by Kan-ed staff to include additional categories of hospitals licensed by KDHE, including Psychiatric Hospitals and Mental Retardation Hospitals. In addition, private psychiatric hospitals licensed by Social and Rehabilitation Services (SRS) also are included in the expanded definition.

Resource

The *Kansas Health Care Provider Directory*, November 1, 2011 version, published by the Kansas Department of Health and Environment Bureau of Health Facilities, was used for verification. This directory can be obtained in hard copy from the KDHE Bureau of Health Facilities and also is available online at the following link: http://www.kdhe.state.ks.us/bhfr/fac_list/index.html. The KDHE updates the website as there are changes in license status.

Process

Hospital members listed in the Kan-ed database were verified against the list of “General”, “Critical Access”, and “Special” hospitals reported in the *Kansas Health Care Provider Directory*.

Result:

- There were no updates to the hospital membership.

K-12

Definition of K-12

“School”, as defined in Senate Substitute for House Bill 2035, means: any unified school district, school district interlocal cooperative, school district cooperative, and/or nonpublic school accredited by the State Board of Education.

Interpretation of Statute

An entity must fall into one of the following classifications and/or be accredited to be eligible for Kan-ed membership:

1. Unified school districts
2. Accredited non-public elementary and secondary schools
3. Interlocals
4. Service centers
5. Interactive Distance Learning (IDL) centers (those that were associated with USDs, Cooperatives, and service centers were not counted as individual members)
6. Special Purpose Schools (accredited only)

Resource

Kansas Educational Directory 2011-12, published by the Kansas State Department of Education, and available online at the following link: <http://www.ksde.org/Default.aspx?tabid=4833>

Process

K-12 members listed in the Kan-ed database were verified against the list of K-12 organizations reported in the *Kansas Educational Directory 2011-12*.

Result:

- The following member institutions were removed from the Kan-ed membership database:
 - Hanston USD 228 (disorganized and schools absorbed by Hodgeman County USD 227)
 - Mullinville USD 424 (disorganized and schools absorbed by Kiowa County USD 422)
 - Nemaha Valley Schools USD 442 (consolidated with USD 451 to form Nemaha Central Schools USD 115)
 - B&B USD 451 (consolidated with USD 442 to form Nemaha Central Schools USD 115)

- The following member institution was added to the Kan-ed membership database:
 - Nemaha Central Schools USD 115

Libraries

Definition of Library

“Library”, as defined in Senate Substitute for House Bill 2035, means:

1. the State Library,
2. any public library established and operating under the laws of this state; or
3. any regional system of cooperating libraries, as defined in K.S.A. 75-2548, and amendments thereto. K.S.A. 75-2548 further defines “regional system of cooperating libraries” as two or more libraries cooperating in a system approved by the state commission and officially designated as a regional system of cooperating libraries under this act.”

Interpretation of Statute

The following definition of a legally established public library was obtained from the State Library of Kansas. Any library listed in the *Directory of Public Libraries in Kansas* (available in a printable PDF version at the link provided below) with the last bit of data in a library's listing as C/1, C/2, C/3, Co, D, R, or T is legally established as a City (of the # Class), County, District, Regional, or Township library. The only exception is the Kansas City Public Library that is legally established under the Kansas City Public School District USD 500. This clarified definition does not recognize libraries classified as “Club” or “Endowed” Public Libraries.

Resource

The *Directory of Public Libraries in Kansas*, June 16, 2011 version published by the Kansas State Library was used for verification. This directory can be obtained online as a printable PDF at the following link: <http://skyways2.lib.ks.us/kld>. The Kansas State Library updates the PDF version as changes occur.

Process

The library members listed in the Kan-ed database were verified against the list of libraries reported in the *Directory of Public Libraries in Kansas*.

Result:

- The following member institutions were removed from the Kan-ed membership database:
 - Havana City Library
 - Summerfield Public Library
- The following member institution was added to the Kan-ed membership database:
 - Talmage Public Library

APPENDIX 3

2011 Member Record Update

2011 Member Record Update

Purpose

A Kan-ed Member Record Update (Record Update) is conducted each year by the Office of Educational Innovation and Evaluation (OEIE). The Record Update ensures that the Kan-ed Membership Database, which houses information relating to Kan-ed members, remains accurate. This accuracy is critical as Kan-ed strives to communicate effectively with its membership.

The purpose of the Record Update is to verify and update contact information for each member organization's four Kan-ed contacts along with site information for each member, as well as contact information for the member's sites. The Administrative Contact serves as the individual who has decision-making authority, typically the Superintendent, Director, Chief Information Officer, President, Chief Executive Officer, or other high ranking official. The Technical Contact serves as an individual who is considered the highest level authority on technical issues at the site, typically the Director of Information Technology, Chief Security Officer, or other technical staff member. The Content & Services Contact serves as an individual who should be knowledgeable about the types of content and services that the organization uses on a regular basis, typically the Director of Curriculum and Instruction, Associate Superintendent, Director of Information and Media Services, or Librarian. The Communications Contact serves as an individual whom Kan-ed could contact regularly with general Kan-ed announcements, events, and updates, including Record Updates. Kan-ed contacts are updated on an annual basis due to frequent changes in contacts and/or their contact information. The results of the 2011 Record Update are summarized in this section.

Methodology

The 2011 Record Update was conducted in November 2011. OEIE staff used the process developed in 2009, through which each Kan-ed member could update their contact information by accessing a pre-populated online form through a specific web link. Each member could access the link to verify and make changes to their contact information. In addition, all member sites were listed on the form along with site-level contact information and an open-ended entry blank where members could indicate any site openings or closings that may have occurred since the previous update. An example of the online form can be found following page 6 of this section.

As of November 1, 2011, immediately preceding the update, there were 880 Kan-ed members. Of the 880 members included in the update, there were 53 higher education institutions, 153 hospitals, 336 K-12 organizations, and 338 libraries. The Communications Contact for each Kan-ed member was contacted via email and asked to confirm their organization's contact information. The expectation was that the Communications Contact would be able to verify information and submit the updates. They also could then forward the specific web link to other individuals to verify information as necessary. Contacts were asked to verify and/or update their organization's contact information as well as their website address. Replacement or updated e-mail addresses were located, if possible, for all undeliverable emails. Reminder emails were sent periodically to those who did not reply. Samples of the initial and reminder emails are included

beginning on page 4. If repeated efforts to reach a contact by email were unsuccessful, then contact by telephone was attempted.

As Kan-ed members submitted their record updates, OEIE staff verified the updates. All verified updated information was imported into the Kan-ed Membership Database in December 2011.

Results of the Record Update

Of the 880 Kan-ed members included in the record update, contact information for 850 members was verified and/or updated, for a response rate of 97%. Contacts at 19 hospitals, 10 K-12 organizations, and one higher education institution could not be reached to verify contact information after several attempts via email and telephone. At the time of this report, these contacts still have not been verified.

Member Record Update Response Rate (Disaggregated by Constituent Group)					
	Higher Education	Hospitals	K-12	Libraries	Total
Update Not Completed¹	1 (2%)	19 (12%)	10 (3%)	0 (0%)	30 (3%)
Completed Database Update	52 (98%)	134 (88%)	326 (97%)	338 (100%)	850 (97%)
¹ Indicates that one or more contacts (administrative, technical, communications or content and services) at an organization could not be reached to verify contact information. Percentages are based on the total number of each constituent group or total membership that was contacted for the update.					

Of the 850 members that completed the record update, one or more changes were made for 443 members (52%), while no changes were required for 407 members (48%). A total of 2,468 changes were imported into the Kan-ed database in December 2011. The majority (1,814, 74%) of the changes were regarding member level changes. Only 654 (26%) changes were related to updating site information. The table on the following page displays the Record Update results by constituent group.

2011 Database Update of Membership Records Results (Disaggregated by Constituent Group)					
	Higher Education	Hospitals	K-12	Libraries	Total
No changes required	17 (33%)	53 (40%)	148 (45%)	189 (56%)	407 (48%)
One or more changes	35 (67%)	81 (60%)	178 (55%)	149 (44%)	443 (52%)
Percentages are based on the total number of each constituent group or total membership that completed the update.					

The trends below were observed during the update process. Percentages have been rounded for ease in reporting, so percentages may not sum exactly to the total percent.

- This year's update indicates that one or more changes were necessary for 443 Kan-ed members (52%) that responded to the update.
- Higher education (67%), hospital (60%), and K-12 (55%) members required higher percentages of updates compared to libraries (44%).
- Of the 1,814 member level changes, which excludes 654 site level changes, 27% were updated email addresses, 27% were updated contact names, 19% were updated titles, 13% were updated phone numbers, and 11% were updated fax numbers. There also were five organization name updates (less than 1%), and 47 organization website address updates (3%).

2011 Kan-ed Database Update of Membership Records Email Correspondence

Initial email sent to Kan-ed Communications contacts (November 2, 2011)

Subject: 2011 Kan-ed Member Record Update

Dear <Communications Contact name>,

Kan-ed has begun the annual process of verifying and updating contact information for its membership and has asked our office, the Office of Educational Innovation and Evaluation (OEIE), to gather this information. It is important that Kan-ed has accurate contact information for its members in order to communicate effectively regarding upcoming initiatives, legislative updates, funding opportunities, and provided services. We are trying to collect all updates by **November 16, 2011**.

At the link provided below, you will find an online form containing the contact information Kan-ed currently has on file for <insert organization name> along with specific instructions for completing the form. Using this link and instructions, please update and/or verify your organization's contact and connection information. As will be mentioned in the form, you may submit updates related to information you are knowledgeable about and forward this link on to another individual to verify any remaining information if necessary.

<Record Update Web Link>

If you have any questions about this process or would prefer to update this information by phone, feel free to contact Sarah Bradford at OEIE (785-532-5677, kaned@k-state.edu).

Thank you for updating your organization's contact information. We appreciate your time!

Kan-ed Research Team

Reminder email sent to Kan-ed Communications contacts (November 9, 2011)

Subject: Reminder: Incomplete 2011 Kan-ed Member Record Update

Dear <Communications Contact name>,

This is a friendly reminder to please complete the 2011 Kan-ed Member Record Update. If you are receiving this message it is because you have either not begun your record update or it is incomplete. Once you've completed a section, **please be sure to address the confirmation drop-down by selecting whether the section has been verified, updated, or is still awaiting verification**. If any section is still awaiting verification you will continue to receive reminder emails.

As the original message stated, Kan-ed has begun the annual process of verifying and updating contact information for its membership and has asked our office, the Office of Educational Innovation and Evaluation (OEIE), to gather this information. It is important that Kan-ed has accurate contact information for its members in order to communicate effectively regarding upcoming initiatives, legislative updates, funding opportunities, and provided services. We are trying to collect all updates by **November 16, 2011**.

At the link provided below, you will find an online form containing the contact information Kan-ed currently has on file for <insert organization name> along with specific instructions for completing the form. Using this link and instructions, please update and/or verify your organization's contact and connection information. As will be mentioned in the form, you may submit updates related to information you are knowledgeable about and forward this link on to another individual to verify any remaining information if necessary.

<Record Update Web Link>

If you have any questions about this process or would prefer to update this information by phone, feel free to contact Sarah Bradford at OEIE (785-532-5677, kaned@k-state.edu).

Thank you for updating your organization's contact information. We appreciate your time!

Kan-ed Research Team

Final reminder email sent to Kan-ed Communications contacts (November 14, 2011)

Subject: Final Reminder: Incomplete 2011 Kan-ed Member Record Update

Dear <Communications Contact name>,

This is a friendly reminder to please complete the 2011 Kan-ed Member Record Update. If you are receiving this message it is because you have either not begun your record update or it is incomplete. Once you've completed a section, **please be sure to address the confirmation drop-down by selecting whether the section has been verified, updated, or is still awaiting verification.** If any section is still awaiting verification you will continue to receive reminder emails.

As the original message stated, Kan-ed has begun the annual process of verifying and updating contact information for its membership and has asked our office, the Office of Educational Innovation and Evaluation (OEIE), to gather this information. It is important that Kan-ed has accurate contact information for its members in order to communicate effectively regarding upcoming initiatives, legislative updates, funding opportunities, and provided services. We are trying to collect all updates by **November 16, 2011. If we do not receive your completed update by the deadline we will contact you via telephone to conduct the update.**

At the link provided below, you will find an online form containing the contact information Kan-

ed currently has on file for **<insert organization name>** along with specific instructions for completing the form. Using this link and instructions, please update and/or verify your organization's contact and connection information. As will be mentioned in the form, you may submit updates related to information you are knowledgeable about and forward this link on to another individual to verify any remaining information if necessary.

<Record Update Web Link>

If you have any questions about this process or would prefer to update this information by phone, feel free to contact Sarah Bradford at OEIE (785-532-5677, kaned@k-state.edu).

Thank you for updating your organization's contact information. We appreciate your time!

Kan-ed Research Team

2011 Kan-ed Member Record Update



Kan-ed has begun the annual process of verifying and updating contact information for its membership and has asked our office, the Office of Educational Innovation and Evaluation (OEIE), to gather this information. It is important that Kan-ed has accurate contact information for its members in order to communicate effectively regarding upcoming initiatives, legislative updates, funding opportunities, and provided services.

Please provide your name, title/position and email address. This will be used if we have any specific questions related to any updates provided via this form.

Your Name (first & last):	
Your Title/Position:	
Your Email Address:	

The following information is what Kan-ed currently has on file for your organization. **Please make updates to address missing or inaccurate information.** For any changes you wish to make to the information, please delete the incorrect information and insert the correct information in its place. Once you've completed a section, **please be sure to address the confirmation drop-down by selecting whether the section has been verified, updated, or is still awaiting verification.** You may submit updates and forward this link on to another individual to verify other information if necessary.

Member Name & Address - This is your primary address and general contact information. For school districts, this is generally the district office. For hospitals, libraries, higher education institutions and other educational organizations, it is generally the primary location or campus.

Member Name:	Ottawa University
Physical Address:	1001 S Cedar St
Mailing Address:	1001 S Cedar St
City, State:	Ottawa, KS
Zip Code:	66067
Phone #:	785-242-5200 (format: 000-000-0000)
Fax #:	785-242-1012 (format: 000-000-0000)
Web Site:	www.ottawa.edu
Please confirm this section has been verified or updated	Awaiting Verification

Administrative Contact - This individual has decision-making authority within your organization. This person is typically a Superintendent, Director, Chief Information Officer, President, Chief Executive Officer or some other high ranking official.

Position Title:	Director of Library Services
First Name:	Jim
Last Name:	Smith
Phone #:	785-242-5200 (format: 000-000-0000)
Fax #:	785-229-1012 (format: 000-000-0000)
Email Address:	director@ottawa.edu
Please confirm this section has been verified or updated	Awaiting Verification

Technical Contact - This individual is considered the highest level authority on technical issues at your organization. This person is typically the Director of Information Technology, Chief Security Officer or other technical staff member.

Position Title:	Chief Information Officer	
First Name:	Jill	
Last Name:	Davis	
Phone #:	785-242-5200	(format: 000-000-0000)
Fax #:	785-242-0182	(format: 000-000-0000)
Email Address:	cio@ottawa.edu	
Please confirm this section has been verified or updated	Awaiting Verification	

Content & Service Contact - This person should be knowledgeable about the types of content and services that your organization uses on a regular basis. This individual is typically the Director of Curriculum and Instruction, Associate Superintendent, Director of Information and Media Services or Librarian.

Position Title:	Dean of Instruction	
First Name:	Phillip	
Last Name:	Carp	
Phone #:	785-242-5200	(format: 000-000-0000)
Fax #:	785-242-0182	(format: 000-000-0000)
Email Address:	dean@ottawa.edu	
Please confirm this section has been verified or updated	Awaiting Verification	

Communications Contact - This individual is someone whom Kan-ed could contact regularly with general Kan-ed announcements, events and updates.

Position Title:	Director of Marketing/Communications	
First Name:	Shelly	
Last Name:	Hill	
Phone #:	785-242-5200	(format: 000-000-0000)
Fax #:	785-242-0182	(format: 000-000-0000)
Email Address:	marketing@ottawa.edu	
Please confirm this section has been verified or updated	Awaiting Verification	

Below is a list of all sites that are associated with your member record. Please make updates to individual site names or contacts. Also, if any sites are missing or no longer exist, please make a note in the comment box provided at the bottom of this list.

Site/Building Name	Administrative Contact Title	Administrative Contact Name	Email Address
Kansas City Campus	Campus Executive	George Brown	kccampus@ottawa.edu
Ottawa University	President	Darrell Vies	president@ottawa.edu

If there are new sites to add or existing sites that have closed, please list them in the box below, including the date the change took place.

Please confirm these sites have been verified or updated

Awaiting Verification

If you have any other general comments about this update, please share them here:

In preparation for the upcoming **2012 Legislative Session**, we would greatly appreciate it if you would share any statements or stories about how Kan-ed funding or services have impacted your organization in the box below. If there are additional contacts at your organization that may have a story to share, please leave their contact information as well.

Submit Record Update

If you have any questions about this form, please contact Sarah Bradford at kaned@k-state.edu or by calling 785-532-5677.

APPENDIX 4

Proposed Circuit Utilization Survey

Proposed Circuit Utilization Survey

Purpose

During the first Kan-ed Study Committee meeting held on September 13, 2011, the committee requested that KanREN, as Kan-ed's Network Operations Center, provide a report containing data related to Kan-ed members' circuit utilization. KanREN responded by producing the *Kan-ed Circuit Bandwidth Utilization Report*, located in Appendix 5, at the October 27 meeting. This report contained utilization information for each Kan-ed site connected through AT&T, thus monitored by KanREN, and did not contain information about Kan-ed sites connected through other Kan-ed Authorized Providers (KAPs). The report also made a preliminary recommendation about whether each site should be connected to a proposed Advanced Regional Network (ARN), which would be operated through a partnership of Kan-ed and KanREN; the commercial Internet; or disconnected due to lack of use. The report was suggested as a preliminary needs assessment for moving forward with a single network, and it was stated that a more detailed site-level investigation would be necessary to make final decisions about many sites' network needs.

On October 13, 2011, Kan-ed contacted OEIE with a request for assistance in developing an online survey for the Kan-ed membership that would assess their current bandwidth utilization. The online survey would serve to begin a site-level investigation of circuit needs and hone the preliminary recommendations for ARN versus commercial Internet connections presented in the *Kan-ed Circuit Bandwidth Utilization Report*.

Proposed Procedure

In spring 2012, OEIE plans to conduct a survey of Kan-ed members to assess their current bandwidth utilization. The survey will be conducted with all Kan-ed members, including both those that are connected to the Kan-ed 2.0 network and those that are not. An email invitation to complete the online survey will be sent to the Kan-ed site survey primary technical contact of those members connected to Kan-ed 2.0 and the technical contact of those members who are not connected to the Kan-ed 2.0 network.

The survey will contain an introduction that explains the purpose of the survey is to assist Kan-ed in preparing for potential changes to the structure of the program and network. Further, it will describe that responses received will help Kan-ed in forming their vision for the future and ensure that anticipated changes to the program will allow Kan-ed to continue fulfilling the needs of its membership.

The survey will include questions about the site's Internet Service Provider(s) (ISPs) and number of network connections. Further, utilization data will be collected about the maximum number of people typically served simultaneously by the connections and the upstream and downstream speeds (i.e., bandwidths) of each connection. When multiple connections are held, the site will be asked to indicate the reason(s) for the multiple connections. Also, the site will be asked if their institution desires to receive state assistance with connectivity. OEIE will work with Kan-ed to further refine the survey instrument prior to its launch in the spring.

Summary

To assist in making plans for the future of the Kan-ed network, OEIE is assisting in the development of a survey instrument to assess the circuit bandwidth utilization needs of the Kan-ed membership. OEIE will launch the survey in spring. Responses received from Kan-ed members will establish site-level information from which to base a recommendation about the site's connection needs (ARN or commercial Internet).

APPENDIX 5

Kan-ed Study Committee Summary

2011 Kan-ed Study Committee Summary

During the 2011 Legislative Session, a legislative interim committee was proposed to investigate the Kan-ed program. Language contained in the 2011 Senate Sub. HB 2014 required that the Legislative Coordinating Council (LCC) appoint a Kan-ed Study Committee. The committee's charge was to "study efficiency and effectiveness of the Kan-ed program in providing broadband internet access to schools, libraries and hospitals." The four specific components included in the review were:

1. Determine the economic value of the Kan-ed program to the state
2. Describe how the Kan-ed funds currently are being utilized
3. Determine if there is a more cost efficient or alternative way to provide schools, libraries and hospitals broadband internet access
4. Compare costs of any alternative program with the existing Kan-ed program for providing schools, libraries, and hospitals broadband internet access

The 2011 Senate Sub. HB 2014 also required that the Kan-ed Study Committee be composed of equal members from the Senate and the House of Representatives, including representation from the minority party. Members of the Interim Committee include:

- | | |
|--------------------------------------|------------------------------|
| • Rep. Marc Rhoades, Chairperson (R) | • Sen. Pat Apple (R) |
| • Rep. Richard Billinger (R) | • Sen. Terrie Huntington (R) |
| • Rep. Tom Burroughs (D) | • Sen. Kelly Kultala (D) |
| • Rep. Terry Calloway (R) | • Sen. Mike Petersen (R) |
| • Rep. Peggy Mast (R) | • Sen. John Vratil (R) |

The Kan-ed Study Committee was allotted two days of meeting time. They met on September 13 and October 27, 2011. Prior to the September 13 meeting, the Office of Educational Innovation and Evaluation (OEIE) prepared legislative packets to be distributed to the ten legislators, including updated data sheets with information related to members in their district, impact statement sheets containing quotes from members in their geographical region, and impact stories. At the request of the Kan-ed Director, OEIE also attended and documented the two meetings to prepare for possible data requests.

The agenda of the first meeting, on September 13, began with reviews of the Kan-ed enacting legislation and the 2007 Performance Audit of Kan-ed. Next, the Kan-ed Director presented on the status of the Kan-ed program from 2007 to the present, the President and CEO of the Kansas Board of Regents presented on Kan-ed's future, and the Kansas Corporation Commission provided a briefing on the Kansas Universal Service Fund. Next, testimony was received from the Kansas Hospital Association, Prairie Hills School District, Barton County Community College, State Library of Kansas, Kansas Cable Telecommunications Association (KCTA), State Independent Telephone Association (SITA), and AT&T. Only two entities (KCTA and SITA) spoke against the Kan-ed program. The agenda, review of Kan-ed enacting legislation, 2007 Performance Audit Report, briefing on the Kansas Universal Service Fund, and the testimony presented that day are located in this section following page 2. The KanREN Executive Director also provided testimony spontaneously at the request of the committee, who requested that

KanREN, as Kan-ed's Network Operations Center, provide a report that contains Kan-ed circuit utilization data by the next meeting date. The meeting concluded with a discussion to plan for that final meeting on October 27.

The second meeting, held on October 27, included presentations by the Kan-ed and KanREN Directors regarding their vision for a future partnership and the *Kan-ed Circuit Bandwidth Utilization Report*. Additionally, the Kan-ed Director presented cost-benefit reports of Kan-ed content services. The meeting concluded with a discussion to plan for the final report, including conclusions and recommendations regarding the future of the Kan-ed program. The agenda, *Kan-ed Circuit Bandwidth Utilization Report*, KanREN/Kan-ed Vision Statement, and cost-benefit summaries of content services presented at this meeting appear at the end of this section, following the testimony from the September 13 meeting.

The *Report of the Kan-ed Study Committee to the 2012 Legislature*, dated November 18, 2011, was finalized and distributed on December 6, 2011. The report contains sections detailing background, committee activities, and committee recommendations. The committee found that the Kan-ed program has been operating efficiently and effectively to bring connectivity to Kansas. Further, it was determined that content services were provided by Kan-ed at a reduced cost compared to other avenues through which they could be funded. The committee encouraged Kan-ed and KanREN to move forward with next steps for creating a partnership and one Advanced Regional Network (ARN), as well as identification of which Kan-ed members require connection to this ARN compared to commercial Internet. The Kan-ed Study Committee Report appears at the end of this section.

**REVISED
TENTATIVE
AGENDA***

KAN-ED STUDY COMMITTEE

September 13, 2011
Room 144-South—Statehouse

10:00 a.m. Welcome by Chairperson Marc Rhoades

Background on KAN-ED

10:15 a.m. KAN-ED Enacting Legislation

- Matt Sterling, Assistant Revisor of Statutes

10:30 a.m. Review of 2007 Performance Audit of the KAN-ED Program

- Scott Frank, Legislative Post Auditor

11:00 a.m. KAN-ED: 2007 to the present

- Jerry Huff, Director of KAN-ED

11:30 a.m. KAN-ED's Future

- Dr. Andy Tompkins, President and CEO, Kansas Board of Regents

12:00 noon Lunch

1:00 p.m. Kansas Universal Service Fund

- Patti Petersen-Klein, Executive Director, Kansas Corporation Commission

1:30 p.m. Kansas Hospitals

- Jennifer Findley, Senior Director of Education for the Kansas Hospital Association and Chairperson of the KAN-ED Advisory Committee

* Any individual with a disability may request accommodation in order to participate in committee meetings. Requests for accommodation should be made at least two working days in advance of the meeting by contacting Legislative Administrative Services at (785) 296-2391 TTY: 711

- 1:45 p.m. Kansas School Districts
- Dennis Stones, Superintendent, Prairie Hills School District
- 2:00 p.m. Community Colleges
- Charles Perkins, Barton County Community College
- 2:15 p.m. Kansas Public Libraries
- Jo Budler, State Librarian
- 2:30 p.m. Telecommunications
- John Federico, President, Kansas Cable Telecommunications Association
- 2:45 p.m. Telecommunications
- Catherine Moyer, State Independent Telephone Association
- 3:00 p.m. Telecommunications
- Tim Haug, AT&T Sales Account Manager
- 3:15 p.m. Committee Discussion - Planning for Final meeting on October 27
- 4:30 p.m. Adjourn

MARY ANN TORRENCE, ATTORNEY
REVISOR OF STATUTES

JAMES A. WILSON III, ATTORNEY
FIRST ASSISTANT REVISOR

GORDON L. SELF, ATTORNEY
FIRST ASSISTANT REVISOR



OFFICE OF REVISOR OF STATUTES
KANSAS LEGISLATURE

Legal Consultation—
Legislative Committees and Legislators
Legislative Bill Drafting
Legislative Committee Staff
Secretary—
Legislative Coordinating Council
Kansas Commission on
Interstate Cooperation
Kansas Statutes Annotated
Editing and Publication
Legislative Information System

MEMORANDUM

To: Chairman Rhoades and members of the KAN-ED Study Committee
From: Matt Sterling, Assistant Revisor of Statutes
Date: September 13, 2011
Subject: KAN-ED Enacting Legislation

The framework for KAN-ED has been enacted and modified through several pieces of legislation. In 2001, Senate Substitute for HB 2035 was passed. The bill's stated purpose was to provide for a broadband technology-based network for schools, libraries and hospitals to connect to for broadband internet access and intranet access for distance learning. The board of regents was directed to contract with communications providers for the creation, operation and maintenance of this KAN-ED network. The network was not to impair existing contracts for telecommunications or internet service. Furthermore, no new construction of state owned assets was to be undertaken in the creation of the network. The board was authorized to appoint advisory committees with participants knowledgeable about topics such as network facilities and services, network content and user training, and any other topics as may be necessary or useful.

In carrying out the act, the board was required to:

- Develop a plan to ensure that all member institutions in the network had access to broadband internet and distance learning
- Determine the standards for quality and affordability
- Request and receive assistance from appropriate network partners to implement the plan
- Establish technical standards for network operation and maintenance
- Determine the method for monitoring the network

- Identify any regulatory impediments to implementation of the network and make proposals to address them
- Assess the need for full-motion video connectivity
- Receive state appropriations and moneys from any source
- Adopt rules and regulations

In 2002, Substitute for SB 614 established a funding mechanism for KAN-ED. The bill provided that, beginning January 1, 2003, funding for KAN-ED would come from the Kansas Universal Service Fund¹. The bill required the board to request funding approval through the appropriations process each year. Funding for KAN-ED was capped at \$10,000,000 per year. These provisions were originally set to expire on June 30, 2005. However, in 2005, HB 2026 extended this expiration date to June 30, 2009 and phased out funding for KAN-ED from the KUSF over four years². After this sunset, the statute requires that "state general fund moneys shall be used to fund the KAN-ED network and such funding shall be of the highest priority along with education funding³." For the past three fiscal years, the budget bill has included a proviso that authorized the transfer of funds from the KUSF to KAN-ED⁴.

¹The statutory purpose of the KUSF is to assure quality services be made available to all Kansans. All telecommunications companies are required to contribute a percentage of all intrastate retail revenues to the KUSF and the companies are authorized to pass on the assessment to consumers. KUSF support is distributed back to the telephone companies to offset the costs of providing service. The KUSF also supports:

- Kansas Lifeline Service Program- Provides assistance for telecommunications services for people with low incomes (matched by federal universal funds)
- Kansas Relay Services, Inc.- Provides hearing impaired relay center service
- Telecommunications Access Program- Provides terminal equipment for disabled individuals
- Network enhancements and upgrades in rural areas

²Under HB 2026, the maximum amounts of funding available to KAN-ED from the KUSF were as follows: FY 2006 - \$10,000,000; FY 2007 - \$8,000,000; FY 2008 - \$6,000,000; and FY 2009 - \$5,500,000.

³K.S.A. 66-2010(f)

⁴The transfers authorized by appropriations acts have been: FY 2010 - \$10,000,000; FY 2011 - \$10,000,000; and FY 2012 - \$6,000,000.



PERFORMANCE AUDIT REPORT

**Kan-ed: A K-GOAL Audit Determining Whether
It's Achieving the Intended Results**

Executive Summary ***with Conclusions and Recommendations***

**A Report to the Legislative Post Audit Committee
By the Legislative Division of Post Audit
State of Kansas
October 2007**

Legislative Post Audit Committee

Legislative Division of Post Audit

THE LEGISLATIVE POST Audit Committee and its audit agency, the Legislative Division of Post Audit, are the audit arm of Kansas government. The programs and activities of State government now cost about \$10 billion a year. As legislators and administrators try increasingly to allocate tax dollars effectively and make government work more efficiently, they need information to evaluate the work of governmental agencies. The audit work performed by Legislative Post Audit helps provide that information.

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LEGISLATURE OF KANSAS

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October 30, 2007

To: Members of the Kansas Legislature

This executive summary contains the findings and conclusions, together with a summary of our recommendations and the agency responses, from our completed performance audit, *Kan-ed: A K-GOAL Audit Determining Whether It's Achieving the Intended Results*.

This report includes several recommendations for the Board of Regents to ensure they have an accurate count of Kan-ed members, to strengthen its grant programs, and to improve its marketing efforts. We would be happy to discuss these recommendations or any other items in the report with you at your convenience.

If you would like a copy of the full audit report, please call our office and we will send you one right away.

Barbara J. Hinton
Legislative Post Auditor

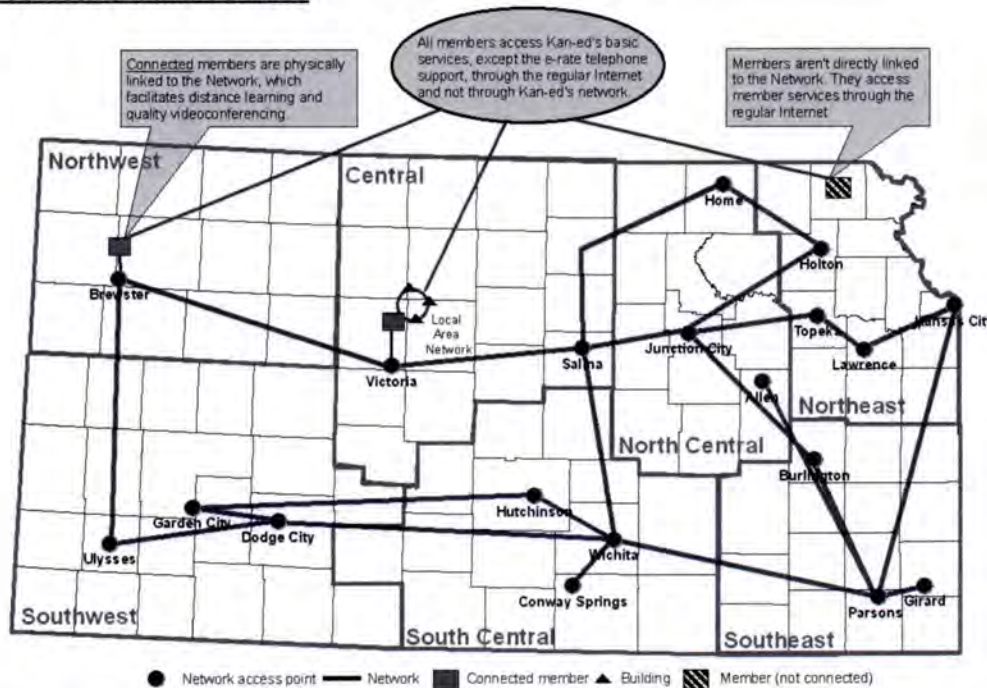
EXECUTIVE SUMMARY

LEGISLATIVE DIVISION OF POST AUDIT

Overview

Kan-ed was created to provide broadband Internet access and distance learning capabilities for schools (both K-12 and higher education institutions,) hospitals, and libraries. Kan-ed was created in 2001, and responsibility for administering the program was given to the State Board of Regents. The figure below shows the Kan-ed Network and the services it provides.

Kan-ed Network and Services



Services Available to <u>All</u> Members		Services Available Only to <u>Connected</u> Members	
Empowered Desktop	A computer application that provides access to a variety of instructional programs and educational databases. Empowered Desktop is available to all members but is geared towards a K-12 audience.	Interactive Distance Learning	Generally used by K-12 schools and higher education institutions, this service allows students and teachers to interact with others across the State. The need for this capability is one of the primary reasons members become connected.
Educational and Research Databases	Five major databases allow searches of: <ul style="list-style-type: none"> • more than 26 million articles from 120 newspapers • U.S. federal census records from 1790 to 1930 • a variety of nursing and health journals 	Videoconferencing	A service that allows <u>connected</u> members to participate in videoconferencing sessions with others. Because videoconferencing requires constant flow of large amounts of electronic data, the quality of videoconferencing is improved greatly when conducted over the KAN-ED network.
EMS System (Hospitals Only)	A computer application that allows hospitals to communicate with each other during emergency situations about such things as the availability of hospital beds and transportation.	Renovo Scheduler	An optional tool used to automatically schedule videoconferencing and interactive distance learning sessions with others.
KanGuard Filtered Internet (Libraries Only)	A computer application libraries use to filter out potentially offensive Internet content.	Internet2	A private, high-speed, research-based Internet geared towards higher education and K-12 institutions.
E-Rate 1-800 Telephone Support (Schools, Hospitals and Libraries)	Provides telephone support for members applying for federal E-Rate funding.	Network Operations Center	This center monitors and troubleshoots the KAN-ED network and provides technical assistance to <u>connected</u> members.

Source: LPA analysis of Kan-ed network, services, and usage data.

Kan-ed has two types of membership—member and connected member. Services available to all members can be accessed through any Internet connection, whereas services for connected members require a physical connection to the Kan-ed network. Only connected members have access to videoconferencing and interactive distance learning services.

Since its inception, the Kan-ed program has provided more than \$12 million of broadband Internet connection subsidies and equipment grants for some of its members. Funding for the Kan-ed program has come primarily from the Kansas Universal Service Fund, but will be fully funded through the State General Fund beginning in 2009.

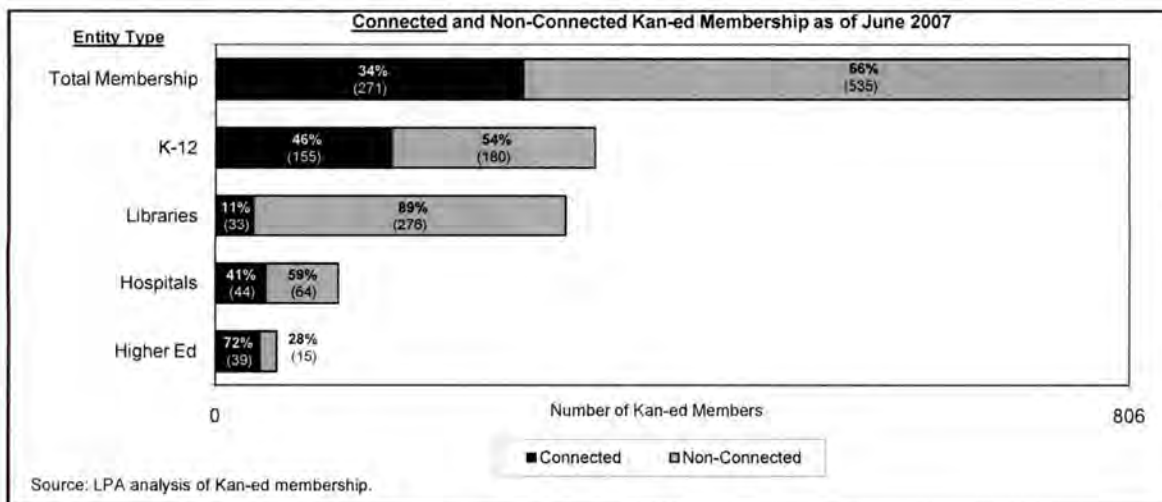
Question 1: To What Extent Are Schools, Libraries, and Hospitals Taking Full Advantage of the Capabilities of Kan-ed?

About 90% of eligible entities have become members of the Kan-ed network. As of June 2007, Kan-ed records showed that 806 of the 899 eligible hospitals, libraries, higher education institutions, and school districts had signed up as members.

Since the inception of the Kan-ed network, about one in three members has become connected. Kan-ed began connecting members to the network in 2004. By June 2007, the total number of connected members had grown to 271 out of 806, or 34%. The figure below shows the number and percentage for each of the four membership groups.

The number of new connected members has been declining in recent years. In 2005, 119 members became connected members; by 2007, that number was down to 29. Like regular members, connected members were fairly evenly distributed across the State.

Members who aren't connected said they don't need connected services, or lacked the information, equipment, or expertise needed to get connected. We surveyed Kan-ed members and received 127 responses



from entities who weren't connected members. About one-third of those respondents told us they hadn't needed distance learning, Internet2, or videoconferencing services—the primary benefits of the being a connected member—in the past. Other reasons they cited: the lack of the equipment needed for videoconferencing and distance learning, lack of knowledge about the benefits of being connected, and lack of technical expertise to understand how to get connected. Further, some members may not become connected because they can access connected-member services through other means, such as through a wide area network hosted by an entity that is a connected member.

A high percentage of school buildings have access to Kan-ed either directly or through a local network. Kan-ed connected members can get access to the network in two different ways—either direct access or indirect access.

- In the case of **direct access**, the member's building is directly connected to the Kan-ed network by a line provided by a local Internet Service Provider. As of June 2007, the Kan-ed program provided 313 direct access points to 271 connected members.
- In the case of **indirect access**, the member's building is linked to another building that has direct access to the Kan-ed network.

Kan-ed officials told us a school district or any other entity might choose either option, depending on its set of circumstances. For a sample of 51 school districts, we determined that 94% of 329 buildings were connected to the Kan-ed network and could conduct videoconferencing or distance learning. Of those, 17% had direct access, and 77% had indirect access.

More than half the members we surveyed use the Kan-ed network's services or databases several times a week. Because the Kan-ed program maintains limited usage information we included questions in our survey of members about which services they use most and least often. We divided the responses into two groups—members and connected members. Overall we learned the following:

- More than half of all members and connected members use a service or database several times a week, and close to 80% use one of those items several times a month.
- About three out of four connected members said they are using the videoconferencing and distance learning features of Kan-ed.
- The Empowered Desktop service was used extensively by those members who are most likely to use it, such as K-12 school districts.

Question 1 Conclusion. In all, 90% of eligible entities are members of Kan-ed, and 34% of those members are fully connected members who can take advantage of videoconferencing and distance learning. A number of members told us they don't need videoconferencing and distance learning, but others cited a lack of information, equipment, or expertise as reasons for not being connected. While it may be **unrealistic**

to expect that all members will become fully connected to the network, Kan-ed staff will need to do more to ensure that members understand the true benefits of becoming connected to the network. Those members who are connected appear to be making good use of the services Kan-ed offers. For example, three out of four connected members said they use distance learning, and 45% said that they use it several times a week.

Question 1 Recommendations. We recommended the program develop procedures to identify all members who have indirect access to the network through another connected member, and to direct its marketing efforts toward groups or members who aren't connected.

Question 2: Has Kan-ed Money Been Spent To Maximize the Number of Members Connected to the Network?

Kan-ed officials have had about \$24 million available since 2002 to purchase content for the network and help meet the needs of members who want to connect. That's the amount left after covering administrative costs and the cost of leasing the lines the network uses. That money has been spent on acquiring content for the network and awarding grants and subsidies to assist members with the costs of getting connected to the network. The figure below summarizes the program's costs for the past six fiscal years.

Kan-ed Program Expenditures FY 2002-2007								
Expenditure	2002	2003	2004	2005	2006	2007	Total	% of total
Non-Discretionary Spending								
Administration	\$365,000	\$436,196	\$942,237	\$1,531,920	\$1,309,168	\$981,380	\$5,565,902	12%
Network Operations	\$0	\$671,804	\$2,861,718	\$3,542,079	\$4,498,319	\$4,928,233	\$16,502,153	36%
subtotal	\$365,000	\$1,108,000	\$3,803,955	\$5,073,999	\$5,807,487	\$5,909,613	\$22,068,055	48%
Discretionary Spending								
Grants & Subsidies ^(a)	\$0	\$2,154,335	\$3,651,705	\$2,072,395	\$4,929,959	\$1,328,474	\$14,136,868	31%
Content & Services	\$0	\$157,596	\$1,340,192	\$2,390,183	\$2,843,862	\$2,979,544	\$9,711,377	21%
subtotal	\$0	\$2,311,931	\$4,991,897	\$4,462,578	\$7,773,821	\$4,308,018	\$23,848,245	52%
TOTAL	\$365,000	\$3,419,931	\$8,795,852	\$9,536,577	\$13,581,308	\$10,217,631	\$45,916,300	100%
(a) Annual and overall totals differ from those in Figure 2-2 because Kan-ed officials included \$665,444 that wasn't able to be assigned to one of the defined grant or subsidy programs by K-State's Office of Educational Innovation and Evaluation (OEIE). OEIE's data is used in Figure 2-2.								
Source: LPA analysis of Kan-ed expenditure data.								

In all, Kan-ed has given out about \$13.5 million to various members. The cumulative amounts given to each entity group are shown below:

- Higher education: \$2.8 million
- Hospitals: \$2.2 million
- K-12 schools: \$6.3 million
- Libraries: \$2.1 million

Kan-ed's grant process could be improved to help ensure that moneys are used effectively to maximize the number of connected members. *Kan-ed officials haven't enforced a provision in its equipment and technology grant contracts that requires members to connect or enhance their connection to the network. For a sample of grants, more than \$432,000 was given to members that haven't become fully connected to the network. Also, Kan-ed officials haven't closely monitored how entities are using their grant moneys. Although most moneys were spent appropriately, we identified about \$15,000 that grant recipients spent on items that weren't specified in their grant application or weren't allowed by the program guidelines. In addition, Kan-ed officials haven't required recipients who have been able to buy equipment for significantly less than the amount shown in their grant application to return the unused grant moneys. Instead, recipients used those moneys for other purposes that Kan-ed officials subsequently approved.*

Kan-ed officials may need to step-up efforts to promote the benefits of being a fully connected member. *Kan-ed's primary efforts to market the benefits of being a connected member have been through a series of e-mails and letters to members, and officials' attendance at conferences that members attend. However, one-third of the survey respondents who aren't connected members indicated they lacked knowledge about connected services or how to become a connected member. Some survey respondents also indicated the language in the program's letters and e-mails was too technical and members couldn't understand it.*

Kan-ed is paying about \$140,000 annually for excess bandwidth capacity that potentially could be used to help more members connect to the network. *When building the backbone for the network, Kan-ed officials had to choose between two levels of bandwidth. Kan-ed officials chose a larger bandwidth capacity option. They told us that leasing the smaller bandwidth would have involved substantial costs to replace existing devices used to route the Kan-ed traffic across the network, and the overall capacity needs of the system weren't known at that time. We estimate the additional net cost for the extra bandwidth is about \$140,000 per year. While that \$140,000 represents only about 3% of the annual network operations budget, it's money that could be used elsewhere if the extra bandwidth isn't needed. Recent estimates suggest that all of Kan-ed's bandwidth capacity may not be needed. Kan-ed staff have contracted with consultants to complete a more in-depth study of bandwidth usage, which is expected to be completed in December 2007.*

Kan-ed officials may need to shift future spending patterns to help members who want to become fully connected. *Based on our survey results, we project that anywhere from 163 to 191 additional members may connect to the network over the next five years. In the past, Kan-ed officials have funded equipment costs for members who want to become fully connected to the network. It also currently pays for 532 members' Internet hook-up subsidies, which total \$1.2 million a year.*

Those moneys may need to be used to fund new members' equipment costs in the future.

A recent study indicated it isn't feasible to fully consolidate Kan-ed with two other networks. A report issued in March 2007 identified barriers that would hinder comprehensive consolidation of Kansas' Kan-ed, KanRen, and KanWin networks. However, the report did recommend some changes, such as eliminating some circuits and moving the Kan-ed network operations center from KanRen to KanWin. If all recommendations were followed, the study estimated net cost savings of \$145,000 in the first year, and possibly more than \$700,000 in subsequent years. Kan-ed officials currently are contracting with a company to review the recommendations.

The Kan-ed network could be administered by another agency, but we didn't see a compelling reason to move it. We considered the possibility of placing the Kan-ed program with four other agencies besides the Board of Regents—the Kansas Corporation Commission (KCC,) the Information Network of Kansas (INK,) the Division of Information Systems and Communications (DISC,) and the Department of Education. We eliminated INK because it lacks the staff to be able to administer the program, and the KCC because it regulates telecommunications companies and would be placed in a conflict-of-interest situation if it administered the program.

Kan-ed could be administered by the Department of Education, but some officials expressed concern about placing the oversight of the program under the direction of an independently elected Board of Education. Arguments can be made for placing the administration of the Kan-ed program with either the Board of Regents or DISC. DISC has the advantage of operating the KanWin network, and possibly could achieve some efficiencies between the two networks. Most states place the administration of their technology network under a DISC-equivalent agency. On the other hand, leaving the program with the Board of Regents would ensure program continuity and less disruption to members. In addition, the Board of Regents is statutorily charged with the development of distance learning—a key feature of the Kan-ed network. In the end, we concluded there wasn't a compelling reason for moving the program.

Question 2 Conclusion. A lack of equipment was a major reason Kan-ed members cited for not being fully connected to the network. Kan-ed officials have allocated significant amounts of money for equipment and connection grants since the network was established, and those grants have been effective at helping a lot of members get connected. However, they haven't been as effective as they could have been because provisions requiring members to connect as a condition for receiving a grant haven't been enforced. Also members who have been able to acquire equipment for substantially less money than their grant applications estimated haven't been required to return the money so that it could be used for additional grants. Kan-ed's marketing efforts haven't been particularly effective

because members say the information they receive is too technical, or doesn't fully explain the benefits of being connected or how to connect to the network. It's unrealistic to expect that all members will connect to the network because everybody doesn't have a high need for distance learning or videoconferencing. A number of members said they haven't connected in the past for this reason. However, it appears that a significant number of new members may become connected over the next five years. If that happens, Kan-ed officials may need to take some of the money they currently use for broadband subsidies and apply that money to equipment grants. Although there are pros and cons to having Kan-ed administered by the Board of Regents or some other agency, we saw no significant benefit to be gained from moving Kan-ed at this time.

Question 2 Recommendations. *We recommended that the Kan-ed program strengthen the oversight of its grant program by enforcing provisions that recipients connect or enhance their connection to the network, and that it begin spot-checking how grant recipients use their grant award moneys. We also recommended that the program review certain aspects of its marketing activities, and that it develop a plan for the percentage of moneys to be allocated to Internet subsidies and grants to help members connect to the network.*

These Appendices can be found in the full report.

APPENDIX A: *Scope Statement*

APPENDIX B: *Agency Responses*

The Kansas Corporation Commission found the recommendations of the report to be reasonable, and will cooperate with Kan-ed officials to address any of the recommendations.

The Kansas Board of Regents generally agreed with the recommendations and has plans to begin implementing some recommendations.

This audit was conducted by Lisa Hoopes, Joe Lawhon, Felany Opiso-Williams, and Justin Stowe. Leo Hafner was the audit manager. If you need any additional information about the audit's findings, please contact Lisa at the Division's offices. Our address is: Legislative Division of Post Audit, 800 SW Jackson Street, Suite 1200, Topeka, Kansas 66612. You also may call us at (785) 296-3792, or contact us via the Internet at LPA@lpa.state.ks.us.



KANSAS BOARD OF REGENTS

KAN-ED Study Committee
September 13, 2011
Jerry Huff, Director of Kan-ed

Chairman Rhoades and members of the Kan-ed Interim Study Committee, I am Jerry Huff, the new director of Kan-ed. I have been asked to update you today on the progress that Kan-ed has made subsequent to the 2007 Legislative Post Audit report.

Kan-ed members are defined in statute as K-12 schools, public libraries, hospitals, and higher education institutions. By definition, the total potential Kan-ed membership is 883. At the time of the 2007 Legislative Post Audit of Kan-ed, had 290 connected members. At that time, Kan-ed had initiated discussion on major network changes. The findings of the audit provided guidance regarding this new network, Kan-ed 2.0, and in December 2008, all members were invited to participate in the Kan-ed 2.0 Connect Program. As a result of the launch of the Kan-ed 2.0 network, the number of connected members increased from 290 (43 higher education institutions; 43 hospitals; 167 K-12 schools; 37 libraries) in December of 2008 to 451 (41 higher education institutions, 73 hospitals, 207 K-12 schools, and 130 libraries) in June of 2011.

The successful bidder for the Kan-ed 2.0 network was AT&T. However, Kan-ed also partners with over 20 private telecom companies to provide broadband connections to Kan-ed members. Kan-ed provides a technical resource to its members through its Network Operations Center (NOC). Kan-ed contracts for NOC services with KanREN.

Kan-ed provides video services through a multi-conference unit. The multi-conference unit is located at the Kan-ed NOC/KANREN, and enables members to connect by video to multiple sites simultaneously. This multi-conference unit provides greater versatility during video conferencing and allows connected parties to use less bandwidth while maintaining high definition video quality. The multi-conference unit also enables the Kan-ed NOC/KANREN to view statistics of calls in progress and remotely trouble shoot problems which enables members to more easily connect to other sites utilizing different brands of video equipment.

In order to help state agencies understand the benefits of this technology and highlight potential cost savings (like eliminating or reducing travel costs, etc.), Kan-ed has promoted the use of video conferencing. State agencies that have tested this video conferencing system include the Kansas Department of Health and Environment, Kansas Board of Nursing, Kansas State Fire Marshall, Kansas Board of Education, Kansas Department of Labor, and the Governor's Office.

To facilitate the use of the multi-conference unit and available bandwidth, Kan-ed also provides access to a video conference scheduling system. There are 1,470 rooms with video capabilities

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connected through the scheduling system. There has been a steady increase in video sessions scheduled through the scheduler. In FY 2007, 26,346 events were scheduled representing 32,849 hours of use. In FY 2011, 38,314 events were scheduled representing 41,364 hours of use. That's a 45% and 26% increase respectively.

Kan-ed also provides Internet filtering for K-12 schools and libraries. This filtering meets the requirements of the Children's Internet Protection Act; a requirement for receiving funds through the federal E-rate program.

Kan-ed's funding has primarily been through the Kansas Universal Service Fund (KUSF). In Fiscal Years 2007 through 2009, Kan-ed received total funding of \$10 million; \$2 million from state general funds and \$8 million from KUSF. In FY 10 and 11, Kan-ed received a total of \$10 million from the KUSF. For FY 12, the Legislature and Governor cut Kan-ed funding by 40 percent from \$10 million to \$6 million from the KUSF.

Kan-ed distributes funds to members in the form of grants for equipment and circuit costs. Since Fiscal Year 2008, Kan-ed has distributed over \$9 million to members. As of August 11, 2011, the break down for each membership group is:

Higher Ed Institutions	\$1,546,326
Hospitals	\$1,899,278
K-12 Schools	\$3,757,597
Libraries	\$2,366,170
Total	\$9,569,371

Since Kan-ed was established, \$500,000 has been provided to Kansas phone companies for the direct purpose of enhancing networks to support Kan-ed access across Kansas.

Kan-ed applies for federal E-rate funding for circuit costs associated with connections relating to K-12 schools and libraries. E-Rate consulting services and training are also provided, enabling members to maximize the acquisition of federal E-Rate funds in Kansas. An E-Rate hotline is another service available that is dedicated to supporting Kansas K-12 schools and libraries applying for E-Rate, as well as Kansas hospitals interested in applying for Rural Health Funds. E-Rate hotline usage has almost doubled in the past three years. In Fiscal Year 2011, over 200 calls have been answered, representing 86 entities. Annual E-Rate trainings sessions have also enjoyed continued interest and attendance, 112 individuals attended the most recent sessions E-rate training session offered by Kan-ed.

Kan-ed has provided funding for value-added content services for its members; research and educational databases for schools and libraries, the LearningStation product for K-12 members, and EMResource for hospitals. As a result of the reduction in funding, and with guidance from the Kan-ed Advisory Council, funding for these services was reduced by 50% in the current fiscal year. Should Kan-ed funding remain at the \$6 million level in the next fiscal year, the funding for these items will be reduced to \$0. LiveTutor, a service providing live online tutor support for K-12 students, was discontinued on July 1, 2011. These value-added services have played a vital role in the lives of many Kansans.

Reduced Kan-ed funding has also resulted in a reduction of service hours available from the Kan-ed NOC/KANREN. Once available 24-hours a day to all members, service hours are now only available from 7:00 AM to 7:00 PM Monday through Friday. 24-hour support is only available to healthcare sites that have 24/7 operations and staff and is further limited to technical events that are a result of disrupted, inoperable, or damaged connections.

In summary, since the 2007 LPA report, a lot has occurred with the Kan-ed network. The number of members utilizing the network has increased due to the implementation of its new network, members have received financial support for equipment and connections, and a variety of content services have been available. The 2011 Legislature provided new guidance to the Kan-ed program regarding program priorities. As a result, difficult financial decisions were made. There is a need for the services provided by Kan-ed. Most states have a similar program. If there was one "right" way for a state to implement a program like this, all state programs would look the same. As technology changes and the needs of state also change, we need to be receptive in making changes. The goal in all states should be the same. To serve the needs of its citizens in a cost efficient way.



KANSAS BOARD OF REGENTS

KAN-ED Study Committee

September 13, 2011

Dr. Andy Tompkins, President and CEO

Chairman Rhoades and members of the interim committee, I am here to update you on our response to the legislative actions from the 2011 Legislative Session and share some thoughts about changes we are discussing for the future.

First, let me recap what we heard as concerns during the last session and what we have done to address those concerns. A major concern we heard was that the Kan-ed program was not originally designed to provide content support to schools, libraries, and hospitals. In response, we cut content support by 50 percent in FY 12 and will provide no content support in FY 13 and beyond. Second, a concern was expressed that our staffing of Kan-ed needed to be reviewed. In response, we have reduced three positions. Our executive director resigned, and we assigned his duties to one of our existing employees, Jerry Huff, who now serves as the director of Kan-ed. Third, concerns were expressed about why the qualifying institutions were not assessed fees. Some of these questions were related to content and some were not. Our legal counsel could find no specific authority for assessing fees. There is some implied authority to charge for the use of video services but Kan-ed has never had a business operation established to charge fees. Additionally, there was criticism that we had not utilized the Kan-ed Advisory Council in guiding decisions for the network. In response to this concern, we have restructured the Council, had a meeting in June, have another meeting scheduled later this week, and will be meeting with the Council on a quarterly basis. We believe that we are now on track to use this group as a sounding board and guide to establish future directions of Kan-ed.

Next, I want to bring you up-to-date on how we responded to the 40 percent budget reduction. The following cuts were made: \$350,000 in consulting services; \$1,500,000 in content services; \$1,550,000 in grants to members; \$110,000 in network connectivity and services; \$237,000 in salaries and benefits; \$200,000 in network emergency contingency; and \$110,000 in general operations for a total reduction of \$4,057,000.

Finally, I want you to know we are beginning a process to totally review the Kan-ed network with an eye toward greater efficiency through partnerships with existing networks. With your permission, we would like to share the results of this process with you at your next meeting. We believe that this is a good time to re-assess our needs and our response to those needs as a state. I have talked with many Kan-ed members over the past months and heard many stories about how Kan-ed is helping them provide access in delivering health care, serving needs through our public libraries, and providing essential services in the delivery of education. This has certainly reinforced for me the need for Kan-ed and highlights its value to our state and especially underserved and rural communities. We also realize that we work on your behalf and as stewards of your vision for serving the needs of Kansas. To that end I would challenge you to once again confront the question that guided us on this issue a decade ago – what is best for Kansas.

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Sam Brownback, Governor

Briefing on the Kansas Universal Service Fund
Before the KAN-ED Study Committee
September 13, 2011

Patti Petersen-Klein, Executive Director
For the Kansas Corporation Commission

Chairperson Rhodes and members of the KAN-ED Study Committee:

Introduction

Thank you for the opportunity to present a high-level overview of the Kansas Universal Service Fund (KUSF). By way of introduction, my name is Patti Petersen-Klein, and I am the new Executive Director of the KCC. I have been in that role for about 90 days, and just prior to that, I served the Commission as its Advisory Counsel for almost six-years. In that role, I handled matters pertaining to the KUSF, and represented the Commission in one KUSF appeal at the Kansas Court of Appeals, and in one proceeding at the FCC last August. For all of this work, including my presentation today, input from Commission Staff is critical. And in that regard, I have with me Christine Aarnes, who is our Chief of Telecom. And I want to make sure I thank her and her staff, and give them due credit for the information in the document I presented to you today.

Background:

My plan today in the short time we have, is to provide you with some general information that will help you study the "Efficiency and Effectiveness of KAN-ED". By way of background, both the Kansas Telecommunications Act of 1996 (KTA) and Federal Telecommunications Act of 1996 (FTA) contain provisions to develop universal service funds to maintain and enhance universal service. The FTA allows states to develop their own universal service funds as long as the funding policies are consistent with those of the federal fund. The funds are known as the Kansas Universal Service Fund (KUSF) and the federal Universal Service Fund (USF).

Universal service is defined in K.S.A. 66-1,187(p), Enhanced Universal service is defined in subpart(q). As a non-techie, I understand the former to mean the practice of providing a baseline level of telecommunication services to every resident of the state; and the latter to mean something more, including full-fiber-interconnectivity, or its technological equivalent; and broadband capable facilities to schools, hospitals, public libraries; and requesting state and local governments.

Policy Objectives of the KTA:

The Commission has been guided by the public policy goals declared in K.S.A. 66-2001. Pursuant to K.S.A. 66-2001, it is the public policy of the state to:

- (a) Ensure that every Kansan will have access to a first class telecommunications infrastructure that provides excellent services at an affordable price;
- (b) ensure that consumers throughout the state realize the benefits of competition through increased services and improved telecommunications facilities and infrastructure at reduced rates;
- (c) promote consumer access to a full range of telecommunications services, including advanced telecommunications services that are comparable in urban and rural areas throughout the state;
- (d) advance the development of a statewide telecommunications infrastructure that is capable of supporting applications, such as public safety, telemedicine, services for persons with special needs, distance learning, public library services, access to internet providers and others; and
- (e) protect consumers of telecommunications services from fraudulent business practices and practices that are inconsistent with the public interest, convenience and necessity.

Within the KTA, the Kansas Legislature charged the Commission with establishing the Kansas Universal Service Fund (KUSF) on or before January 1, 1997. The KUSF is currently in its fifteenth year of providing support to local telephone service providers to assist in making universal service available in high-cost areas of the state, to provide dual-party relay service and telecommunications equipment for persons with disabilities and to provide assistance to those with lower incomes through the Lifeline program. For the last several years, the KUSF has also provided funding for KAN-ED. Currently, the fund is meeting requirements totaling approximately \$65.7 million.

Support History & Cost Modeling:

Kansas statute, K.S.A. 66-2008(a)¹, dictated that KUSF support would initially be available to incumbent local exchange carriers in an amount equal to revenue that would be lost when access charge reductions were implemented as required by K.S.A. 66-2005(c). Access charges are the prices long distance carriers pay local carriers for the origination and termination of long distance calls. These charges were historically higher than the actual cost of providing the service and the revenue from these charges contributed to keeping rates for local service lower than they otherwise would have been. When local carriers were not allowed to provide interLATA long distance services, there was less pressure to move rates to a level that reflected

¹ K.S.A 66-2008 has been amended and subsection (a) no longer reflects this requirement.

the cost of providing access service. However, with the passage of the FTA, local service providers would have an opportunity to enter the long distance market and long distance providers feared these carriers would have a cost advantage if access charges were not modified.

The Federal Communications Commission (FCC) and the Kansas Legislature believed that access charges should be reduced but neither believed it should be done if universal service would be compromised by significant increases to basic local rates. Therefore, as access charges were reduced, local carriers were allowed to recover at least some portion of lost access revenue from the federal USF and the KUSF in order to prevent local rate shock. In Kansas, the intrastate access rates of our price cap carriers, such as AT&T and CenturyLink, are now at parity with interstate access charges. Rural local exchange carriers are required by statute to mirror interstate access rates every two years.

While the initial amount of KUSF support was set to replace lost revenues, K.S.A 66-2008(c) requires that the Commission periodically review the KUSF to determine if the cost to provide local service by carriers eligible to receive such funds justifies modification of support. The Commission has answered this requirement by mirroring efforts by the FCC to meet a similar charge. For carriers like AT&T, the FCC determined that support should be based on the cost to provide service if the network were being built given current technology rather than based on historical costs.

A model was developed to determine the forward looking cost of providing service and support for large carriers. For smaller, independent carriers, the FCC maintained support based on a company's historical cost of service. The Commission followed suit. Support for AT&T and CenturyLink was modified based on a forward looking cost model. Support available to rural local exchange carriers is being determined through rate-of-return audits of each company. The Commission has completed audits for all but three of the rural local exchange carriers.

KUSF Assessment:

The Commission must set an assessment rate to be implemented March 1st of each year. The Commission gathers information regarding the anticipated expenditures from the fund and the estimated revenues of carriers contributing to the fund. The assessment is calculated by dividing the anticipated expenditures by the estimated revenues. Carriers are permitted, but not obligated, to pass the assessment to consumers on each bill. The incumbent local exchange carriers place an assessment on their bills that is calculated by dividing the projected assessment by the number of lines served by each carrier and is a fixed amount. All other carriers calculate an assessment rate based on the revenue generated by each customer.

Over the years, the size of the KUSF has varied. The fund was established in 1997 with funding requirements of \$70,468,892. At its highest, the KUSF funding requirement was approximately \$100 million. The highest assessment rate was 9%. The lowest funding requirement was approximately \$60 million and the lowest assessment rate was 3.7%. For the period ending February of 2011, the funding requirement was approximately \$73.6 million and the assessment rate was 6.64%. On January 12, 2011, the Commission issued an order adopting an assessment

rate for year fifteen of the fund which began March 1, 2011. The new funding requirement is approximately \$65.7 million and the new assessment rate will be 6.18 %.

The KUSF assessment amount is lower in year fifteen partly due to a Declaratory Ruling that was issued by FCC on November 5, 2010. The FCC's November 5th Declaratory Ruling was issued in response to a Petition filed by the Nebraska Public Service Commission and the Commission, and it affirmed that states are not prohibited from assessing interconnected nomadic Voice over Internet Protocol (VoIP) providers for state universal service funds.

KUSF Support Amounts:

As indicated above, the KUSF provides support for several uses all of which are intended to promote universal service. The largest portion of the support is provided to carriers who serve in high-cost areas of the state. In Kansas, areas are usually viewed as high cost because of the low population density. In other states, geography can also contribute to the high cost nature of the service. In addressing the high cost to provide service in some areas, the KTA and FTA make universal service fund support available to competitive carriers that meet certain qualifications. State commissions were given the responsibility for determining whether competitive carriers were eligible for such support and for monitoring whether such carriers have used support appropriately. The Commission has reviewed applications from competitive carriers wishing to receive high-cost federal USF support and determined that fourteen were eligible. The Commission has reviewed applications from competitive carriers wishing to receive KUSF support and determined that eleven were eligible. An additional seven carriers have been granted eligibility for federal USF low-income (Lifeline) support only.

In total, approximately \$819 million in support has been provided to companies to assist in making service in high-cost areas available to consumers at reasonable rates. The fund also provides support for telecommunications relay services, telecommunications equipment, Lifeline and KAN-ED.

Relationship to the federal USF:

The federal USF also provides support for universal service in Kansas. Carriers receive support for serving in high-cost areas and support for low-income consumers is also provided through the USF. By far, the most significant relationship between the KUSF and USF is in support for high-cost service. For the incumbent carriers, the Commission takes into account the amount of federal USF a carrier receives in determining the amount of KUSF support necessary for the carrier. Thus, changes in federal USF support amounts have a direct effect on KUSF support.

Kansas currently ranks third in receipt of high-cost support from the federal USF. Only Mississippi and Texas receive more high-cost support. In 2010, carriers received approximately \$256 million in high-cost support for Kansas service areas. From 1998 to 2010, carriers have received approximately \$1.9 billion in high-cost support for Kansas service areas. The total benefit to Kansans would be reflected by subtracting out the contributions made by Kansas

consumers. Once contributions are subtracted, Kansas is still a net receiver of support from the USF.

The majority of the high-cost USF support for Kansas is paid to incumbent local exchange carriers. However, thirteen competitive carriers were eligible for and received high-cost support from the USF. Competitive carriers were estimated to have received approximately \$116 million in 2010. The majority of the competitive carriers are wireless carriers. Until recently, competitive carriers received the same amount of support per line as provided to the incumbent carrier. However, the FCC is considering whether this method of providing support is appropriate along with other considerations to reform the USF. The FCC has placed a cap on the amount of support available to competitive carriers until it makes a final determination on how to reform the USF.

Certification of Use of KUSF and USF:

The FCC requires state commissions to certify that carriers in their state are using USF support appropriately. In determining that a carrier eligible to receive support, known as an ETC, has used support appropriately, the Commission requires ETCs to file data and narratives each year explaining how support was used and indicating where support was spent. In addition, the Commission has determined that this data should also be used to determine whether KUSF support is being used appropriately. As a result of this review, the Commission has required an audit of one ETC to conduct a more in-depth review of whether support has been used appropriately and whether such support is necessary. As a result of that in-depth review, the company no longer receives KUSF support.

Information specific to KUSF funding KAN-ED

Five (5) exhibits are attached herewith that provide specific information about the KAN-ED funding process as it relates to the KUSF:

Exhibit 1: Depicts the annual events for the KUSF in chronological Order.

Exhibit 2: Provides a narrative description of the KAN-ED funding process.

Exhibit 3: Sets out the total KAN-ED funding by year and source.

Exhibit 4: Describes the statutory progression of KUSF Monies for the KAN-ED program from inception until present.

Exhibit 5: Shows in picture form, a high-level summary of the KAN-ED funding mechanism from appropriation, spending and reporting by the Board of Regents.

Exhibit 1
CHRONOLOGY OF ANNUAL KUSF EVENTS

March 1	New KUSF Year implemented
April	Staff report on per line KUSF support portable to competitive ETCs due (April 1) Annual True-ups due from Companies (15 th)
May	GVNW ² compiles unaudited financial statements Staff contacts outside auditor to schedule annual KUSF audits
June	GVNW carrier audit reports due for past year. KUSF carrier audit selections, recommended modifications/updates to audit procedures and selection process filed.
July	KUSF Auditors on-site Commission issues order accepting audit selections, modifications/updates to audit procedures, etc. Commission issues order Opening 16 KUSF carrier audits GVNW submits Summary Report on past year's KUSF carrier audits
August	Review draft KUSF audit reports Commission issues order on KUSF Carrier Audit Summary Report, requests comments on audit recommendations, etc.
September	Staff Report & Recommendation to open next year's KUSF assessment rate docket Commission Order opening next year's KUSF annual docket Review Draft KUSF Auditors Report, file Reports with Commission
November	Companies file September 30 th data in annual KUSF docket (Nov. 2, 2011)
December	Staff files direct testimony and calculations (Dec. 23, 2011) Respond to questions from companies.
January	Intervenor Testimony Due (January 4, 2012) Staff Rebuttal/Correction Testimony due (January 11, 2012) Technical Hearings (January 17-18, 2012) Commission Order setting new assessment rate (January 25, 2012)
February 28	Staff and GVNW prepare for new KUSF year (update support, remittance Instructions/Forms, send data to companies, etc.)

² GVNW is The third party administrator currently under contract per K.S.A. 66-2010

Exhibit 2
KAN-ED FUNDING PROCESS

KAN-ED is funded via appropriations from the Kansas Universal Service Fund (KUSF). The annual KAN-ED, initially provided for in K.S.A. 66-2010(f)(3), has been set forth in annual appropriation bills, effective July 1, 2009. The current state fiscal year funding of \$6.0 million was provided for in House Bill 2014, signed by Governor Brownback on May 28, 2011.

The annual KAN-ED appropriation is included in the determination of the KUSF. K.S.A. 66-2010(f)(1). The Commission must rely on the KAN-ED funding known at the time the annual KUSF assessment rate is determined in January since the legislative appropriations occurs later in the spring. If the KAN-ED appropriations are more than the funding included in the assessment rate calculations, the KUSF reserve is used to offset the additional appropriations. If the amount appropriated for KAN-ED is less than the amount recognized in the KUSF assessment rate calculation, the difference is accumulated as part of the KUSF reserve; used to offset the next year's KUSF needs. K.S.A. 66-2008(a).

Payments from the KUSF are disbursed to carriers and programs, including KAN-ED on a monthly basis. Thus, one-twelfth of the annual KAN-ED funding is disbursed each month. Disbursements are made from the KUSF to the State Treasurer, who is required to deposit the amount in the state treasury and credit it to the KAN-ED funds. K.S.A. 66-2010(f)(2), K.S.A. 66-2010(b).

The Board of Regents is responsible for how KAN-ED monies are spent. K.S.A. 75-7221 through K.S.A. 75-7228 contain provisions over the KAN-ED program, including that the Board of Regents is to provide an annual report to the Legislature by January 15th. The report is to account for how the "purpose of this act have been carried out, and the recommendations shall specifically note what changes are necessary to better address the purposes described in this act," and the report is to include "*a statement of the costs of and savings realized by implementation of the network and a plan for funding the network.*" K.S.A. 2004 Supp. K.S.A. 75-7226.

Exhibit 3
TOTAL KAN-ED FUNDING BY YEAR

State FY	KUSF Appropriations	General Fund Appropriations	Total KAN-ED
2002/2003	\$ 5,000,000	\$ -	\$ 5,000,000
2003/2004	10,000,000	-	10,000,000
2004-2005	10,000,000	-	10,000,000
2005-2006	10,000,000	-	10,000,000
2006-2007	8,000,000	2,000,000	10,000,000
2007-2008	8,000,000	2,000,000	10,000,000
2008-2009	10,000,000	-	10,000,000
2009-2010	10,000,000	-	10,000,000
2010-2011	10,000,000	-	10,000,000
2011-2012	6,000,000	-	6,000,000
TOTAL	\$ 87,000,000	\$ 4,000,000	\$ 91,000,000

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Mark Sievers, Chairman
Ward Loyd, Commissioner
Thomas E. Wright, Commissioner



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Sam Brownback, Governor

EXHIBIT 4

TO: Patti Petersen-Klein

FROM: Sandy Reams
Christine Aarnes

DATE: August 8, 2011

SUBJECT: Kansas Universal Service Fund Monies for KAN-ED Program

The KAN-ED Program became effective July 1, 2002 and is governed, in general, through K.S.A. 66-2010. Statutory amendments provided for KAN-ED funding from the KUSF through State Fiscal Year 2009 ((see House Bill (HB) 2026)). K.S.A. 66-2010 requires the Board of Regents to certify the KAN-ED receipts. It also requires that 1/12th of the annual appropriations be paid from the Kansas Universal Service Fund no later than the 10th day of each month:

(f)(1) Before July 1 of each year, the chief executive officer of the state board of regents shall certify to the administrator of the KUSF the amount provided by appropriation acts to be expended from the KAN-ED fund for the fiscal year commencing the preceding July 1. Upon receipt of the certification of the chief executive officer of the state board of regents, the KUSF administrator shall add the amount certified to the amount annually required to fund the KUSF as determined pursuant to subsection (b).

(f)(2) On or before the 10th day of each month, the administrator of the KUSF shall pay from the KUSF to the state treasurer 1/12 of the amount certified by the chief executive officer of the state board of regents pursuant to subsection (a) for the fiscal year preceding the fiscal year in which the payment is made. Upon the receipt of the payment, the state treasurer shall deposit the entire amount in the state treasury and credit it to the KAN-ED fund. Any such payments shall be made after all payments required by K.S.A. 66-2008, and amendments thereto, for the month are made from the KUSF.

(f)(3) Not more than the following shall be paid from the KUSF to the state treasurer pursuant to this subsection (f): In fiscal year 2006, \$10,000,000; in fiscal year 2007; \$8,000,000; in fiscal year 2008; \$6,000,000; and in fiscal year 2009; \$5,500,000.

The statutory KAN-ED appropriation for Fiscal Year 2008 was increased to \$8.0 million by the Kansas Legislature through HB 2368. Fiscal Year 2009 KAN-ED appropriations were maintained at \$8.0 million through HB 2946. No statutory KAN-ED appropriations from the KUSF existed for Fiscal Year 2010. However, KAN-ED appropriations were continued through HB 2354, which provided, on page 113, section 81(m):

During the fiscal year ending June 30, 2010, notwithstanding any provisions of subsection(f) of K.S.A. 2008 Supp. 66-2010, and amendments thereto, as such subsection existed prior to June 30, 2009, to the contrary, the amount of \$10,000,000 shall be certified before July 1, 2010, by the chief executive officer of the state board of regents to the administrator of the KUSF and the administrator of the KUSF shall pay such amount from the Kansas universal service fund of the state corporation commission to the KAN-ED fund of the state board of regents during fiscal year 2010 in accordance with the provisions of subsections (f)(1) and (f)(2) of K.S.A. 2008 Supp. 66-2010, and amendments thereto, as such subsections existed prior to June 30, 2009.

For the 2011 Fiscal Year, House Substitute for Senate Bill No. 572, page 112, provided for \$10 million of KAN-ED funding from the KUSF.

The 2012 Legislature, in HB 2014, decreased the KAN-ED appropriations from the KUSF and also required additional certification of the appropriated amount, as stated on page 132:

(h) During the fiscal year ending June 30, 2012, notwithstanding any provisions of subsection (f) of K.S.A. 2010 Supp. 66-2010, and amendments thereto, as such subsection existed prior to June 30, 2009, to the contrary, the amount of \$6,000,000 shall be certified before July 1, 2012, by the chief executive officer of the state board of regents to the administrator of the KUSF and the administrator of the KUSF shall pay such amount from the Kansas universal service fund of the state corporation commission to the KAN-ED fund of the state board of regents during the fiscal year 2012 in accordance with the provisions of subsections (f)(1) and (f)(2) of K.S.A. 2010 Supp. 66-2010, and amendments thereto, as such subsections existed prior to June 30, 2009.

HB 2014 was signed into law by Governor Brownback on May 28, 2011.

The Kansas Legislature has also required the Board of Regents to account for the monies it has received for the KAN-ED Program. In general, K.S.A. 2004 Supp. 75-7226 was amended to require the Board of Regents to provide an annual report and provide such a report the legislature by January 15th of each year. The report was to account for how the "purpose of this act have been carried out, and the recommendations shall specifically note what changes are necessary to better address the purposes described in this act," and it was to include "*a statement of the costs of and savings realized by implementation of the network and a plan for funding the network.*"

Exhibit 5
KAN-ED

Annual appropriations for Kan-Ed program to be funded from KUSF determined via appropriations (formerly contained in K.S.A. 66-2010(f)(3))
Most recent funding appropriation of \$6 million for the year - HB 2014
(Signed by Governor Brownback May 28, 2011.)

Amount provided for in appropriations bill included in calculation of KUSF requirements to be collected and disbursed during next KUSF assessment rate docket. (K.S.A. 66-2010(f)(1)).

One-twelfth of annual KanEd funding disbursed each month to the State Treasurer. State Treasurer deposits amount in state treasury and credits the Kan-Ed funds. (66-2010(f)(2) and K.S.A. 66-2010(b)).

The Board of Regents is responsible for how KAN-Ed monies are spent. The Board of Regents is to provide an annual report to the Legislature by January 15th of each year. The report is to account for how the "purpose of this act have been carried out, and the recommendations shall specifically note what changes are necessary to better address the purposes described in this act," and the report is to include "*a statement of the costs of and savings realized by implementation of the network and a plan for funding the network.*" (K.S.A. 2010 Supp. 75-7226, amended)



Tom Bell
President and CEO

To: Kan-ed Study Committee

From: Jennifer Findley, Senior Director of Education

Date: September 13, 2011

Re: Kan-ed and Hospitals

The Kansas Hospital Association appreciates the opportunity to provide comments on behalf of the 126 community hospitals that we represent regarding the Kan-ed program and its future. The benefits provided to Kansas hospitals by Kan-ed, such as the state-wide license to EMResource, access to a reliable, secure network for telemedicine, and access to educational resources for staff/patient education, have been tremendous. We want to ensure the future sustainability of these services.

Telemedicine

The rural nature of our state coupled with the anticipated health care workforce shortages in future years makes expanding telemedicine programs in Kansas imperative. Telemedicine allows patients in rural communities to access specialized physicians without time consuming and costly travel. Kan-ed has jump started expansion of telemedicine by enabling many hospitals to take advantage of the benefits provided by using video conferencing equipment.

Kan-ed is providing more than just broadband internet access to our member hospitals. Kan-ed provides a highly reliable, secure, user friendly platform for telemedicine and potentially for health information exchange. With just the click of a few buttons, you can have a consult scheduled and ready to go. The network management services provided by Kan-ed assures that outages do not happen, everyone can interface with each other, security breaches do not occur and video traffic gets prioritized. In addition, technical assistance is provided to end users.

Health Information Exchange

Over the past several years, many forces have come together to promote the adoption of Health Information Technology and Electronic Health Records in particular. The vision, which KHA supports, continues to be a national system of exchangeable health information to improve patient care, develop health policy, improve public health and to base hospital and physician payment for services based on value and quality. Access to affordable and reliable bandwidth

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will be an imperative for hospitals. Kan-ed has the potential to play a pivotal role in making health information exchange a reality in Kansas.

Hospitals need Kan-ed

It would take significant time and resources to create a network like Kan-ed. Our members currently do not have the resources to invest in that kind of project. If there is no “network”, Kansas hospitals could expect to see increased line charges, decreased network security, decreased reliability/quality of service and decreased collaboration among stakeholders. As we have seen in the past, if telemedicine becomes difficult and/or complicated, hospitals and physicians will not participate.

Rural Sustainability

There has been much talk recently about encouraging people to relocate to rural communities. When families and businesses are considering relocation, the quality of the local health care system is typically a key decision factor.

KHA believes every Kansan deserves access to quality health care. The services provided by Kan-ed help ensure that our rural communities have the same access to health and education services as urban areas. It is a small investment to assure that our rural areas continue to be able to compete and the urban/rural divide does not continue to grow.

Thank you for consideration of our comments. Feel free to contact us if you have any questions or need additional information.



Prairie Hills USD 113

"Expecting and assisting all students to develop the skills necessary to make positive contributions to society."

Sabetha Elementary Sabetha Middle Sabetha High Wetmore Elementary Wetmore High Axtell High Summerfield Elementary Bern Elementary Bern High

TESTIMONY IN SUPPORT OF KAN-ED

Dennis R. Stones, Superintendent

PRAIRIE HILLS USD 113

SEPTEMBER 13, 2011

Prairie Hills is made up of seven communities in Northeast Kansas. We are primarily farming communities that have several manufacturing companies located within our district. Our student's parents are in all parts of the world selling the products of these businesses. Our students truly do receive a global education. We cover 543 square miles and have a student head count of 1298. We have three buildings in Sabetha and one K-12 building in Wetmore, a K-12 building in Bern, a 6-12 building in Axtell, and a P/K-5 building in Summerfield. All of our buildings have met AYP for the last several years.

Two districts made the decision to consolidate in order to become more efficient and spend our dollars wisely. We are working to provide the best education for our students for the least amount of dollars, and the telecommunications services, network access and bandwidth provided through Kan-ed contribute in a significant way to our ability to accomplish this goal. When we combined the districts USD 441 and 488 we created a greater need for distance learning as we reduced teaching positions while expanding the services area to 543 sq. miles. Through Kan-ed we are able to provide courses to all buildings via distance learning technology. While utilizing distance learning we were able to reduce some staff. As a district in our 2nd year of consolidation, we are very concerned about the cuts in Kan-ed funding. We have an Interactive Distance Learning studio in each of our four high schools which allows us to teach the class from one building, while delivering it to the other three high schools. The courses that we are currently teaching over distance learning are as follows: American History, Home Economics, Government, Spanish I & II, World History, and Physics (an example of this would be the Spanish teacher is in Sabetha High school and teaches Spanish to the other three high schools in the district). This allows us to maintain quality instruction and save on the number of teachers required. Without the Kan-ed system it will greatly hamper our ability to offer the course work students need and deserve in our K-12 facilities. Our IDL classrooms are used for teaching every period of the day. By utilizing

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this method of teaching we have been able to cut back on the need for a teacher in each building teaching the same subject, hence, saving money, while maintaining our course offerings to ensure Prairie Hills students all have access to quality instruction.

With our district being so large (543sq. miles) I normally have my administrator meetings early in the morning and utilize the distance learning rooms. This allows our principals to not have to leave their buildings. This is helpful because the buildings are from 15 to 40 miles one way from the district office.

The Kan-ed network is much more than a website – it provides the infrastructure and connectivity for us to connect, and through the statewide contract negotiate circuit costs that would very likely be significantly higher – not just for our district, but for all of the K-12 members who currently secure telecommunications circuits through Kan-ed. The majority of the time, school districts have already compared connection prices, and have chosen to connect through Kan-ed because of the financial benefit.

I have been asked to testify on behalf of the K-12 membership to provide you with some insight on the implications, and needs that K-12 has for the services, support, and resources provided to K-12 school districts through Kan-ed. Undeniably, the services provided to K-12 by Kan-ed cannot be replicated at the local level at the same price. The implication for us is simple – it is mission critical to leverage the statewide network to offer Interactive Distance Learning courses for students, and *to secure affordable telecommunications costs on behalf of all the Kan-ed members*. Our students and their parents are relying on us to do that.

Thank you for your time.

Dennis Stones, Superintendent of USD 113

Kan-ed provides the following valuable applications and resources for preK-12 Kansas Schools: a. network connectivity for Interactive Distance Learning Classes, b. access to the internet, c. educational databases and subscription resources such as encyclopedias, 'student friendly' search tools, formative assessment tools for teachers/students, d. Homework help through Tutor.com, and e. a 'desktop' portal called the "Empowered Desktop".

Kan-ed provides 149 physical, network connections to schools/districts across the state to support internet access, distance learning courses, etc. These 149 telecommunications circuits include:

<u>Circuit size</u>	<u>Number of sites</u>	<u>Cost per circuit per mo</u>	<u>Total Cost per Month</u>	
T1	80	\$690	\$55,200	
3 meg	39	\$1,030	\$40,170	
4.5 meg	6	\$1,500	\$9,000	
6 meg	10	\$1,900	\$19,000	
7.5 meg	1	\$2,300	\$2,300	
9 meg	8	\$2,600	\$20,800	
12 meg	3	\$3,400	\$10,200	
20 meg	1	\$3,100	\$3,100	
45 meg	1	\$4,700	\$4,700	
	149		\$164,470	TOTAL COST PER MONTH

You should be aware that Kan-ed submits an E-rate application to receive a 70% discount on the total cost of the circuits outlined above—and the E-rate application process is lengthy, cumbersome, and is subject to annual approval through the SLD. The discounted amount is received thru a reimbursement process. Funding denials/appeals can (and have) impacted Kan-ed's capacity to receive funding discounts/reimbursements in a timely manner.

One of the primary/compelling reasons for connection to Kan-ed is the cost effectiveness of the connection--the connections that Kan-ed provide are most often the most cost effective way for the schools to connect (whether it be for distance learning, internet access, etc.). In my experience those schools/districts that find more cost effective connection options thru other means do so. It is likely; schools/districts that have a physical telecommunications circuit through Kan-ed would end up paying more to secure network connections individually through local means, than through the state contract secured through Kan-ed. The majority of the time, school districts have already compared connection prices, and have chosen to connect through Kan-ed for the financial benefit.

1) Schools that have asked Kan-ed to apply for E-rate (federal discount program for internet access) on their behalf have now missed the window for individual school district applications. There are 80 K-12 sites that have T-1 E-rate applications with Kan-ed and 39 K-12 sites that have 3.0mb E-rate applications

with Kan-ed...all are filed with the E-rate program and the window has closed. Another 155 K-12 sites file their own E-rate and reference Kan-ed or another entity as their provider...their applications could also potentially be in jeopardy if they referenced E-rating their "connection to the Kan-ed network". There are another 39 K-12 sites that connect through a Kan-ed Authorized Provider. Circuits to the Kan-ed Authorized provider would go away, thereby stranding these school districts with no access to video conferencing resources on the Kan-ed network.

2) The Kan-ed Empowered Desktop hosts multiple applications that K-12 uses heavily. Access to these would go away with termination of the Kan-ed Act, since Kan-ed is the majority "funder" of these statewide aggregated licenses.

- 71,000 active Electronic Backpack users (allows students to store documents online).

- 1.1 million K-12 Gale Database sessions in FY10 and FY11 to date.

- 1.5 million World Book Online sessions in FY10 and FY11 to date.

- Access to the LS Test builder (Customize-able Formative Assessment Tool)

- 420,000 users would not have access to the Kan-ed Empowered Desktop, which also contains safe-search engines, e-mail addresses (epals), other research and education databases, and other services.

3) In FY10 and FY11 (to date), K-12 entities have received over \$1.2 million in grants for video conferencing technologies.

4) Access to 1-800 E-Rate Help Desk Support and four state-wide annual E-Rate training workshops would stop.

5) Access to the Kan-ed Live Tutor would be gone (over 67,000 one-on-one tutoring sessions for K-12 subjects in FY10 and FY11 to date).

6) Access to video conference/distance learning technology/software scheduler – Over 72,000 sessions in FY10 and projected through FY11. A high percentage of these are K-12 based sessions where one teacher is teaching at her home site and two or three "away" sites using video.

The following are some more "generic" points about the Kan-ed program:

1) Kan-ed connects over 440 members (K-12 schools, Libraries, Hospitals and Higher Education) with daily internet access and access to a private network (leased from AT&T) for distance learning and telemedicine. This is essentially a "commercially" run network. A public-private partnership. Kan-ed partners with over 20 private telecom companies to provide high-speed internet to our members. The private industry also provides our network operations center (KanREN in Lawrence). A conservative estimate is that at least 20 high-tech jobs would be impacted by elimination of Kan-ed. Kan-ed administrative overhead is about 7.5%. ALL of Kan-ed services are purchased or leased from private companies.

2) Kan-ed has provided over \$21 million directly to Kan-ed member institutions in the form of technology grants. This has been critical to keep our members up with changing technology...including

distance learning and telemedicine. Close to another \$500,000 has been provided to KANSAS phone companies for the direct purpose of enhancing their networks to support access to Kan-ed. Kan-ed has provided the Regents universities with over \$1,000,000 in grants to support the new high-speed KanREN network that university researchers at KU and K-State use most heavily. The rural telephone companies have just announced a partnership with AT&T to implement the same technology Kan-ed uses. This will INCREASE the amount of private companies that can connect with Kan-ed.

3) Kan-ed has RETURNED federal dollars that were not right for the State of Kansas and had too many strings attached. Kan-ed has not requested any budget increase from the State since inception in CY2003. Kan-ed has been prudent with budgeted funds and has made decisions based on our mission and our ability to live off our base funding...not on grant parameters from the federal government. We also work closely with the FCC and KCC, who both recognize Kan-ed as an official eligible telecom entity.

4) Kansas Universal Service Fund (KUSF) which currently funds Kan-ed at \$10,000,000 per year is assessed through an "average" \$.25 per phone line per month assessment on a monthly phone bill. If Kan-ed were eliminated, then the rate collected would be reduced by the Kansas Corporation Commission (KCC). There would be no transfer of KUSF funds to the SGF. Therefore, the bill killing Kan-ed would result in ZERO savings to the State of Kansas General Fund (SGF) and TREMENDOUS pain to the Kan-ed membership.

5) Kan-ed also collects and surveys our members for aggregated demand and then provides critical access to those services with statewide licenses for educational and research databases...for example, we provide the "ProQuest Nursing Journal" which meets a required resource criteria for public and private higher education institutions that have accredited nursing programs. Our members also have access to Worldbook Online and several critical Gale database titles.

6) Kan-ed provides a website portal where Kan-ed members can go for information and enhanced services. Over 420,000 members have user accounts on the Kan-ed Empowered Desktop portal. Schools and district administrators have access to formative tests, quizzes, and district-wide results (optional fee service), and have access to a safe search engine as required by the Children's Internet Protection Act. Kan-ed also provides CIPA filtering at the network level to further reduce K-12 and Library filtering costs. Kan-ed also provides students, staff and faculty with an online "backpack" to store documents and files so they can access them anywhere they are! Not all students (especially those in rural areas) have access to a PC at home.

BARTON

COMMUNITY COLLEGE

To Kansas Legislature Kan-ed Study Committee

Representative Marc Rhoades, Chairman

From: Charles Perkins, Dean of Information Services, Barton Community College.

Date: 09/13/2011

Thank you for inviting me to speak on behalf of Barton Community College. Please indulge me as I explain my background. I have worked in the information services department of Barton Community College for over 19 years. At the college I deployed the first desktop PC's, connected the college to the internet and setup the first emails systems. I spent many hours convincing staff/faculty to use this new creation called the internet. I also participated in the early years of Kan-ed and spent numerous hours traveling Barton's seven county service area working with telecommunications companies and K-12 school districts to connect them to the Kan-ed backbone and to utilize the backbone for distance learning classes using video connections. Kan-ed and Barton partnered on numerous projects over the years to try to move forward the Kan-ed connected vision as I understood it.

That's enough history now for now. Despite all the work and effort, from Barton Community College's standpoint, the current implementation of Kan-ed has not been able to build a bridge to community colleges and form the collaboration needed. All community colleges have participated in the Kan-ed network at some level most of the colleges have received benefit. One issue is that when we brought forth issues through the proper channels, the old Kan-ed did not change their view of what needed to be provided. However, we believe with the new Kan-ed leadership a new partnership can be formed to provide the collaboration and the forum for the community colleges to move in a positive direction.

Let me explain why the current model is not working well for Barton Community College. Barton has fully embraced the use of a high bandwidth video network and has thirteen video instruction rooms. These rooms connect to our service area schools (Service area schools are those public schools within the seven county area Barton serves) on a regular basis and are also used for staff/faculty meetings to bridge the distance between our two campuses. The ongoing costs of maintenance and service contracts for ITV equipment in these rooms has grown to the point that all the rooms are set to have the equipment removed by 2020. Currently the yearly cost is \$10,000 with an estimated cost of \$20,000 by

next summer. The timing (of replacement) is dependent on establishing the appropriate lower cost instructional and meeting models in place of the current model. We are moving forward as quickly as possible while still meeting the needs of our stakeholders and realistically believe we will have to shut down most rooms in the next few years because the cost exceeds our resources. Also with the changing environment, we believe our stakeholders will be better served by taking a fresh look and finding a new vision.

Kan-ed had tested alternatives to video delivery a number of years ago, but those proved unsuccessful. New models must be found that substantially lower the cost to both taxpayers and students. To this end Barton is working with Johnson County Community College, Butler Community College, Washburn Institute of Technology, North Central Distance Learning Network and Kansas Research and Educational Network, to test new low cost/bandwidth educational delivery models. I do not need to convince this committee of the importance of lowering the cost of education across the state.

Where does Kan-ed fit into these new models? Given that Kan-ed has changed leadership I believe they can join with us. Barton Community College has grown dismayed with the old implementation of Kan-ed. As new leadership is put in place I am sure they will want to join with the efforts already in place, but time is short and budgets are tight. It is imperative that these low cost distance delivery learning models be tested and put in place quickly. For community colleges, Kan-ed can become a valued partner and we, the External Distance Learning Team, are quickly implementing new ways to establish a delivery model for video enhanced student distance learning that is pedagogically sound, flexible, sustainable, and adaptable for special populations.

What can Kan-ed do to help community colleges? Community colleges need higher bandwidth internet connections. That is the simplicity of what is needed. There are a number of ways that this could be achieved: Kan-ed could help community colleges across the state negotiate lower prices with vendors; subsidize a one-time grant to solve last mile issues for those colleges who do not have access to the necessary network resources to move them into the future; provide supplemental funds in decreasing amounts each year to get all colleges to high bandwidth connections; and provide a framework to bring together all information services departments from all Higher Ed Institutions to give us a platform to share resources, vision and knowledge.

Kan-ed needs to be a catalyst for new ways of sharing information, lowering connection costs and facilitating new innovative ideas to keep Kansas growing. Kan-ed should help all educational institutions across the state to establish a delivery model for world-class video enhanced student distance learning that is pedagogically sound, flexible, sustainable, and adaptable for special populations.

MEMORANDUM

To: KAN-ED Study Committee members
From: Jo Budler, State Librarian
Date: Sept. 13, 2011
Re: KAN-ED Services

In July, I sent you a memo to share with you some of the ways your constituents are being affected by Kan-ed's reduced funding in the current fiscal year and would be affected if Kan-ed's services were eliminated. I would like to update you on that today.

Connectivity

Approximately 4 out of 10 Kansas public libraries provide Internet access, at no charge, to their community members through Kan-ed connectivity (T-1 line).

- According to the U.S. Department of Commerce National Telecommunications and Information Administration, in 2007 approximately 30% of Kansans did not have access to the Internet either at home or at work. For these 800,000 Kansans, the public library is the only location where they might access the Internet at no charge. This number probably has increased since 2007.
- As more face-to-face services are migrating to the web, broadband Internet connectivity is more important. Kansans utilize library broadband for a number of services, including filing income tax, searching for jobs, downloading e-content, and taking online courses. If libraries lose their connectivity, many Kansans will be without any means to connect to these services.
- As the economy has worsened, library use has increased dramatically. Some libraries are seeing double digit increases in circulation, program attendance, use of the Internet, and requests for assistance. Libraries are offering more and more tools to assist their users including job help and courses online so the need for reliable, fast connectivity is increasing.

Content

The State Library (SLK) negotiates and coordinates statewide subscriptions to electronic content so that all Kansans may utilize vetted, authenticated information resources. These resources include varied content of interest or need to many.

- Libraries contributed more than \$140,000 to the statewide subscriptions but the reduced Kan-ed funding resulted in elimination of an encyclopedia, "Student in Context" (a tool heavily used by K-12 students), and reading aides (used by all ages). Funding next year will be reduced to zero according to the Kan-ed projected budget and will lead to further cancelled subscriptions.
- Through 6 focus groups conducted across the state in August 2011, 52 subject areas were identified by librarians as of "interest and importance" to members of their communities. We culled out 14 of "highest interest." The current subscription includes only 7 of these. Kansans are losing critical content at a time when they need it most.

Electronic content subscriptions currently available to all Kansans (through July 31, 2011):

- Educational databases aimed at K-16 and post graduate (elementary, middle school, secondary & higher education)
- Nursing databases required for nursing accreditation at our institutions of higher education
- Health database suitable to academics and consumers
- Learning Express Library which includes:
 - Practice tests
 - Computer software courses
 - Writing and math skill courses
 - Job and Career Accelerator tools
- Chilton's Auto Repair
- Heritage Quest (a genealogy database)
- Business and Company resources used by both academic and public
- WorldCat **

Funding sources for these resources include:

- In FY 2011 Kan-ed provided \$876,028 in funding for subscriptions to content, accessible to all Kansans; the State Library of Kansas provided \$436,759 of federal funding.
- In FY2012, Kan-ed will provide \$434,500 in funding for subscriptions. SLK will contribute \$354,945 to subscriptions in FY2012. (Please note: Federal funding to the State Library has been reduced by more than \$100,000.)

Total cost of databases above = \$1,017,510

** Funded by a group of academic and public libraries. This database gives users access to the catalogs of libraries around the world. The subscription makes this resource available to all Kansans.

Testimonials re: Kan-ed connectivity services

Northeast Kansas libraries:

This is provided by **Kathy Johnston, the Director of the Baldwin City Public Library** (a mid-size town in Douglas County). Basically they have two choices for Broadband, other than Kan-ed, at a cost of \$139.95-\$317.24/month but:

1. Currently the library has a 3.0 mbps (two T1's) Kan-ed connection.
2. Century Link, the most common DSL provider in their region cannot provide even the 1.5 mbps upload speed that is the minimum standard regarding broadband. This is the level provided by the no cost Kan-ed T1 line.
3. Neither Century Link nor Media Com cable can match the 3.0 mbps upload speed that the library currently has with its 3.0 mbps Kan-ed service.

Even this well-connected community cannot match the connectivity available through Kan-ed.

Southwest Kansas libraries:

This is provided by **Charlene McGuire, the Technology Consultant for the Southwest Kansas Library System.**

"I am finding that the landscape for high speed Internet has changed significantly in the years since we starting the Kan-ed T-1 lines. There are so many more choices that our libraries have that they did not have a few years ago. That being said, we cannot always compare apples to apples when it comes to Internet.

"The example I use is to compare the T-1 dedicated line to DSL, cable or other forms of Internet by using the phone analogy. When I was a kid we were on a party line. Many people will remember that you had to share the line and could not always use the phone when you wanted to or when you needed to use it. If you were lucky enough to have a private line then the phone was always available. A **T-1 connection is a private line or more accurately, a dedicated line. Other forms of Internet such as DSL and cable are subject to sharing the line like the old party line.**

“Another example would be if a person has ever had the experience with trying to download something on the Internet after school lets out on a week day. The Internet slows down because you are sharing your connection with nearby children just home from school and using the Internet. This is why the T-1 type connections are so important.

“I have contacted providers for **41 of our library locations** about the availability of a T-1 line. I am still waiting on a response from some of the vendors. So far I have confirmed that **16 libraries can purchase a T-1 connection. Nine of the 16 are in the price range of \$300 - \$500 per month.** This provider did not give me exact numbers and the amount would vary by location (this provider offers fiber to the door in these locations). **The remaining seven locations range in price from \$1,000 - \$1,625 per month.**

“I have confirmed in **19 locations that no T-1 connection is offered.** However, in eight of the 19 a higher speed synchronous (same speed up and down) that was either wireless or fiber could be purchased. The price for these connections ranged from free (in the case of our six Wheatland Broadband libraries) to \$113 per month.

“The wireless connection is synchronous but not a dedicated line so time will tell how reliable it will be. I do not have confirmation yet, but **up to 25% of our libraries may not be able to purchase either a T-1 type connection or a synchronous connection. Two of our libraries will not have Internet if they lose their Kan-ed line.**

“Some of our libraries are happy with their T-1 connections from Kan-ed even though the speed is rated slower on the download than their previous connection because the T-1 connection is more reliable and not so subject to slowdowns, interruptions, and weather related issues.”



STATEWIDE DATABASE SUBSCRIPTIONS

FOCUS GROUPS WERE HELD ACROSS THE STATE FROM AUG. 9 - 24, 2011

Locations: Aug. 9, Lawrence; Aug. 16, Manhattan; Aug. 19, Dodge City; Aug. 24, Wichita
On-line, Aug. 17, p.m. and Aug. 18, a.m.

Attendance: 76 librarians attended the live focus groups.
30 librarians attended the on-line focus groups.

Attendance by type of library: 41 public libraries;
24 academic libraries,
21 school libraries;
15 Regional Library System staff; and
4 Special libraries.

Subject topics: 52 subject topics were recommended by the focus groups as subjects which are important to their community members and library users.

Each person in attendance at the focus groups and online were allowed to select their top 8 subject topics for databases.

Top 14 subject areas (*in order of most votes*):

Genealogy (48)	Auto maintenance (38)
Test prep (47)	Health & Wellness - General (38)
Academic (44)	Newspaper Archives (38)
Nursing (41)	Ebooks, reference (31)
Encyclopedia (40)	K-12 (31)
Language learning suite (39)	Readers' Advisory (30)
Literature, authors (38)	Consumer Info (29)

These subject areas will be included in a Request for Proposal (RFP) which will be issued by the SLK on behalf of Kansas libraries and the residents they serve. The amount of content in the subscription will be contingent upon the amount of funding available.

Evaluation team: Evaluation teams will be created in each subject area if possible. Teams will evaluate the databases during a trial period. 31 librarians submitted their names to serve on the evaluation teams.

For more information, contact the State Library of Kansas, 1-800-432-3919.

Kan-Ed is a vital link for users of Kansas libraries.

Kan-Ed network services and content are both important.



Kan-Ed provides a T-1 connection for members who need it. In some communities, this is the only source for broadband Internet of this caliber. In other communities, libraries use the Kan-Ed connection to run a portion of their network. Either way, this increases the speed of Internet service for users.



Full-motion videoconferencing is increasingly used for meetings and training. Through the Enhanced Library MEeting Room project (ELMER), Kan-Ed makes videoconferencing possible, saving time and money for libraries. Kan-Ed has also provided grants for the videoconferencing equipment in many locations.



Licensed databases are a key part of good information access for Kansans. Databases include ProQuest Nursing Journals, highly used by nursing students and health professionals; Base K-12 Pack, heavily used by K-12 students; Heritage Quest, essential for genealogists; LearningExpress, valuable for those training for a new career; and a dozen others. The licenses allow use by every Kansan.

Some facts about such content:

- Kan-Ed provides 63% of the cost of databases licensed statewide
- The databases were used over 5.5 million times last year
- Providing content has always been part of Kan-Ed's mission, and was intended to be so from the earliest planning stages

Kan-Ed services are vital throughout the state. They are particularly crucial in rural areas.



Kansas Cable Telecommunications Association

Testimony offered by:
John J. Federico: President-KCTA
September 13, 2011

My name is John Federico and I serve as the President of the Kansas Cable Telecommunications Association. The KCTA represents telecommunication companies, big and small, serving both urban and rural areas in all four corners of the state. The cable industry is the largest provider of broadband in the state of Kansas.

I appreciate the opportunity to discuss with you today, our lingering concerns with the Kan-Ed Program and about what we respectfully believe is a well-intentioned government program that has "over-reached" and lost sight of its original mission and purpose.

The KCTA has a long history of support of the Kan-Ed Program and offered testimony on the original bill establishing the Program in the 2001 Legislative Session. I personally offered testimony on behalf of the KCTA *"supporting a statewide technology backbone to connect schools, libraries and hospitals across the state."* I went on to say in my testimony however, that *"the KCTA maintains their belief that the delivery of a broadband technology-based network is best served by competing private entities."*

The cable industry is not alone in their thinking, nor were they in 2001. Among the recommendations to the 2001 Legislature by the State Education Technology-Based Network Task Force was the declaration that *"Kan-Ed must be managed in a manner that will not compete with the private sector."* Testimony offered to the Senate Commerce Committee by the Chairman of the Rural Telephone Company: State Affairs Committee stated in their endorsement of *Kan-Ed* legislation that *"services provided over the Kan-Ed network should be clearly and narrowly defined, and periodically revisited to avoid unforeseen or unintended competition with the private sector."*

In short, the overarching concern of the telecommunications industry during the formation of the Kan-Ed Program was its potential to negatively impact competing private entities. As such, great care was taken to negotiate and gain consent to language limiting the scope and purpose of the state-managed broadband network.

The original intent of the law establishing Kan-Ed was to *"provide for a broadband technology-based network which schools, libraries and hospitals may connect for broadband internet access and intranet access for distant learning."* The network shall allow for the following features (1) Universal provider interconnection or peering rights; and (2) competitively bid end-user Kan-Ed connections. Further restrictions in the law prohibited the network from, among other things, providing as part of their offerings - phone services (either switched voice access or via VoIP)

The KCTA believes there has been a slow, deliberate departure from the original intent and limited scope of the Kan-Ed Program. Earlier this Session there was, in our opinion, a full-blown breach to that "contract." The bill I speak of is HB2021 that was approved for introduction to the legislature by the Board of Regents and was then introduced in January at the start of the 2011 Legislative Session.

In spite of the fact that the Board of Regents has decided to not pursue HB2021 this past legislative session, the cable industry still has concerns about future efforts to steer Kan-Ed down the path of state-subsidized competition to private providers.

There are generally three areas of concern with the KanEd Program.

The first is the purpose and mission of Kan-Ed. As mentioned above, we believe they have strayed from the original intent of the law. There seems to be a focus on content versus connectivity. Kan-Ed was born at a time of an emerging broadband market. Today, based on an extensive mapping effort, data confirms that over 99% of households have access to broadband internet. With the proliferation of broadband competition across the state, can't the needs of most end-users be met with private market offerings.

Secondly, the funding of Kan-Ed is a growing concern. It was never intended that the program be permanently funded using KUSF money. Through exhaustive debate in the Capitol over the years related to Kan-Ed funding, it was thought that Kan-Ed if considered a worthy and valuable program should be funded using state general funds. Currently, it is funded by a \$10M transfer from the KUSF. The KUSF is funded by charging a tax on all telecommunication providers who pass the tax onto their customers, your constituents. The KUSF is bloated with over \$65M in the fund. Is it necessary that Kansas maintain the 3rd largest state universal service fund in the country? It should be the goal of the legislature and other policymakers to reduce the size of that fund and provide at least *some* relief to the taxpayers who pay that telecommunication tax because of the use their use landline and cell phones.

Lastly, our members have some concern about the oversight of the Kan-Ed program. These concerns have nothing to do with personnel but more to do with "process." The fact that HB2021 was never put before the Kan-ED Advisory Board is a bit mystifying and does lead to some paranoia. The purpose of the Kan-Ed Advisory Board, which includes some members of the telecommunication industry, is to provide input on various matters of interest to the Kan-Ed program. If the subject matter contained in the Board of Regents' bill (HB2021) is not worthy of consideration by this Board, then I am hard pressed to know what would be appropriate!

On behalf of the entire cable telecommunications industry, we applaud you for taking a close look at the KanEd Program in an attempt to determine if ultimately the needs of the end-users are being met, and whether the product is being delivered in the most efficient and cost-effective manner.

Blue Valley Telephone Company
Hoover

Bluestem Telephone Company
Dodge City

Columbus Telephone Company

Craw-Kan Telephone Coop., Inc.
Girard

Cunningham Telephone Company, Inc.
Glen Elder

Elkhart Telephone

Golden Bell Telephone Assn., Inc.
Rush Center

Guthrie Telephone Company

H&B Communications, Inc.
Holyrood

Haviland Telephone Company, Inc.

Home Telephone Company, Inc.
Galsa

JBN Telephone Company, Inc.
Wenmore

KanOkla Telephone Assn., Inc.
Galawell

LaHarpe Telephone Company, Inc.

Madison Telephone Company, Inc.

MoKan Dial, Inc.
Louisburg

Mutual Telephone Company
Little River

Peoples Mutual Telephone Company
LaCygne

Pioneer Telephone Assn., Inc.
Ulysses

Rainbow Telephone Coop. Assn., Inc.
Everett

Rural Telephone Service Company, Inc.
Levonia

S & A Telephone Company, Inc.
Allen

S & T Telephone Coop. Assn.
Brewster

South Central Telephone Assn., Inc.
Medicine Lodge

Southern Kansas Telephone Co., Inc.
Cleaver

Sunflower Telephone Company, Inc.
Dodge City

Total Telephone Company, Inc.
Ochelata, OK

Tri-County Telephone Assn., Inc.
Council Grove

Twin Valley Telephone, Inc.
Miltonvale

United Telephone Association, Inc.
Dodge City

Wamego Telephone Company, Inc.

The Wheat State Telephone Co., Inc.
Udall

Wilson Telephone Company, Inc.



KANSAS
RURAL INDEPENDENT
Telephone Companies

Investment that works for all Kansans

Kan-ed Study Committee

Kan-ed Background Comments/Telecommunications

Catherine Moyer, Director, Legal & Regulatory Affairs

Pioneer Communications/State Independent Telephone Association

September 13, 2011

Mr. Chairman and Members of the Committee:

I am Catherine Moyer, the Director of Legal and Regulatory Affairs for Pioneer Communications, a rural telecommunications company headquartered in Ulysses. Pioneer Communications provides wireline telephone service, cable television, Internet, and wireless telephone throughout Southwest Kansas.

I am submitting comments regarding Kan-ed and its relationship with the Kansas rural telecommunications companies.

The Kansas rural telecommunications companies have testified many times in connection with Kan-ed. In the beginning stages of Kan-ed, the rural companies testified in support of the creation of Kan-ed and its temporary funding out of the Kansas Universal Service Fund. The rural companies were in the forefront of providing distance learning to schools in their areas, as well as providing fast Internet connections to the hospitals and libraries in their service areas. The rural companies recognized the benefits these networks and connections provided to their customers, and were cognizant of benefits Kan-ed could bring to schools, hospitals and libraries throughout the State of Kansas. It was this recognition of connectivity benefits that led the rural companies to support the creation of Kan-ed.

Kan-ed was created using funding from the Kansas Universal Service Fund. Eventually, KSA 66-2010 codified the KUSF funding for Kan-ed, beginning in 2006 and continuing through 2010. Over this five year period, the level of Kan-ed funding from the KUSF was transitioned from \$10 million per year to \$0. When Kan-ed was created, the rural companies supported the initial funding out of the KUSF, with the understanding Kan-ed funding would transition out of the KUSF and towards the State General Fund, or another funding source. As the State of Kansas faced tight budget years, this statutory transition never occurred.

The Kansas Universal Service Fund was established in tandem with the State of Kansas acting to lower intrastate access rates, to satisfy IXC's (interexchange carriers, i.e. long distance carriers) and a desire for lower intrastate toll rates. The State of Kansas lowered intrastate rates, over which it had jurisdiction, to match interstate rates. Because intrastate rates had been set by the KCC to allow for recovery of the higher actual costs incurred in building rural networks, the carriers experienced a loss of revenue. The KUSF was established expressly to offset this lost revenue. Under continuing KCC supervision KUSF payments make up for what the carriers lost, and continue to lose, through lower intrastate access rates.

The rural companies are mindful of the desirability of not allowing this fund to grow too large, which is why the companies have supported the phase-out funding approach taken in the Kansas statute.

While the rural companies have supported Kan-ed's mission in creating a network to which schools, hospitals and libraries could access for distance learning, they did question the direction in which Kan-ed was headed following an RFP Kan-ed issued in 2007. The result of that RFP was to allow Kan-ed to use one single provider to deliver Kan-ed access and commercial Internet to all Kan-ed members.

Historically speaking, the rural companies' support for the Kan-ed program was based entirely on several fundamental policy understandings. One of these understandings was that the State of Kansas would not, through Kan-ed, compete with private enterprise and that Kan-ed would not impair contracts that current providers had with schools, libraries and hospitals.

Following the RFP, Kan-ed appeared to be headed toward allowing the State of Kansas, through Kan-ed, to compete with private enterprise by reselling telecommunications and commercial Internet services. It would have also impaired current providers' contracts with schools, libraries and hospitals, by forcing Kan-ed members to use one particular provider to connect to Kan-ed and by offering free commercial Internet access. This trend would actually increase the KUSF, to compensate for the institutional revenues lost by the rural companies.

The rural companies worked closely with Kan-ed and its members, as well as other segments of the telecommunications industry to allow a Kan-ed member to work with their local providers to connect to Kan-ed. We believe a successful Kan-ed will require that the program interact with rural companies as partners rather than as adversaries.

Personally, as a representative that sits on the Kan-ed Advisory Board, I also have concerns about the boundaries of the Kan-ed program. As originally envisioned, and outlined in statute, the purpose of Kan-ed is to provide a network to which schools, hospitals and libraries can connect. Kan-ed is providing many other services in addition to this network, mainly applications over the network. Kan-ed, its advisory committee and the Board of Regents took a hard look at these applications following the budget cut to the program following the last legislative session and made some tough cuts. However, the legislature should explore what it envisions as the purpose of Kan-ed. Is it just a network, as outlined in the original legislation? Or is it something more? And if it is something more, where do the funding dollars come from—the State General Fund? User fees? Grants?

I thank you for the opportunity to appear before you today and would answer any questions you might have. Thank you.



Mr. Chairman and Members of the Kan-ed Study Committee -

My name is Tim Haug. I am an AT&T sales associate responsible for Kan-ed and Kansas State Government. Thank you for the opportunity to speak to you today about the benefits and collaboration surrounding the Kan-ed 2.0 statewide network from a telecommunications perspective.

Kan-ed 1.0 vs. Kan-ed 2.0

First, let me begin with a little history of the Kan-ed network. The first iteration of the network (Kan-ed 1.0) was initially awarded in 2003 and 2004 to AT&T along with other telecommunications providers that included Sprint, Pioneer, NexTech, Cox and others. Over the next 5 years, the 1.0 network focused on providing a statewide aggregation backbone that included 19 network access points that were funded by Kan-ed. The Kan-ed members were then responsible for the network connections and the cost to reach the access/aggregation points. The connection costs to reach the access points were often significant.

Then, in 2008, the Kan-ed 2.0 network was proposed which significantly changed the network design. This new design was competitively bid and awarded to AT&T. The 2.0 network abandoned the 1.0 dedicated statewide backbone concept and was replaced with a virtual AT&T backbone that allowed Kan-ed to fund basic connections (1.5MB and greater) to all members. The basic connections are 100% Kan-ed funded, while higher bandwidth connections are jointly funded by the members and Kan-ed. The Kan-ed 2.0 network also provides level pricing for all members including all rural members regardless of their location or who their local telecommunications provider is.

Collaborative Network that Includes All Telecommunications Providers

The Kan-ed 2.0 network provides two options for all telecommunications companies to participate in this collaborative network:

- Kan-ed currently provides 22 KAP (Kan-ed Authorized Provider) circuits that are provisioned to Independent Rural Telephone and Cable Telecommunications Companies (e.g. NexTech, Pioneer, Craw-Kan, Eagle, Cox, Twin Valley, Sunflower and others) to allow them to aggregate their customers on the 2.0 network. This provides a collaborative network concept that includes many providers.

- Providers that do not participate in the KAP option are still included in the 2.0 network via joint provisioning/billing. This allows Kan-ed to provide network services to any location in Kansas via a single order/bill and more importantly a single contact point for all maintenance issues.

Managed, High Availability Network

The Kan-ed 2.0 network is monitored and managed by the Kan-ed Operations Center. This management function is vital to the success of 2.0 network and includes the following important centralized functions:

- Provides the management and support of a centralized video scheduling system.
- Provides a video bridging system that connects point-to-point and multipoint video sessions.
- Provides centralized network monitoring, management and maintenance functions.
- Provides Help Desk (How To) support for video and internet users.
- Provides a structured process for provisioning new locations and managing the change requests for existing locations.

It is important to note that the design and functionality of the 2.0 network, in conjunction with the management services provided through the Kan-ed Operations Center, go far beyond just a “pipe to the Internet.” In summary, the benefits of the Kan-ed 2.0 network are numerous:

1. Kan-ed can fund more of its members’ connectivity because they are no longer paying for a dedicated aggregation backbone (19 Access Points).
2. The 2.0 network provides level pricing for all Kan-ed members including all rural entities, regardless of who their local telecom provider is.
3. Kan-ed 2.0 is a collaborative network with multiple ways for all telecom companies to participate and benefit.
4. Kan-ed 2.0 provides valuable network management and support tools for all members.

AT&T is committed to providing Kansas with the right products, resources and people to meet your needs – the same commitment Kan-ed makes to its clients. Thank you for the opportunity to speak to you today. I will stand for questions at the appropriate time.

**TENTATIVE
AGENDA***

SPECIAL COMMITTEE ON KAN-ED STUDY

October 27, 2011
Room 346-S—Statehouse

- 10:00 a.m. Welcome by Chairperson Rhoades
- 10:05 a.m. KAN-ED Circuit Bandwidth Utilization Report for Connected KAN-ED Members
- Jerry Huff, Director, KAN-ED
 - Cort Buffington, Director, KanREN
- 10:45 a.m. Vision Statement and Plan for Future Action
- Jerry Huff, KAN-ED
 - Cort Buffington, KanREN
- 11:15 a.m. KAN-ED Content Programming Cost Evaluation
- Jerry Huff, KAN-ED
- 11:45 a.m. Status of KAN-ED Performance Audit
- Joe Lawhon, Principal Auditor, Legislative Division of Post Audit
- 12:00 noon Lunch
- 1:30 p.m. Discussion by Committee Regarding Final Report

2011 Legislature's Charge to the KAN-ED Study Committee

- Evaluate the KAN-ED program for efficiency and effectiveness in providing schools, libraries and hospitals broadband internet access;

* Any individual with a disability may request accommodation in order to participate in committee meetings. Requests for accommodation should be made at least two working days in advance of the meeting by contacting Legislative Administrative Services at (785) 296-2391 TTY: 711

- Determine the economic value of the KAN-ED program to the state;
- Describe how KAN-ED funds are used;
- Determine if there is a more cost-efficient way to provide broadband internet access to schools, libraries, and hospitals;
- Describe any alternate ways to provide broadband internet access to schools, libraries, and hospitals;
- Compare the costs of alternatives to to the KAN-ED program; and
- Complete Study no later than December 31, 2011, and make findings and recommendations to the Legislature's committees on Appropriations and Ways and Means no later than the first day of the 2012 Session.



KANSAS BOARD OF REGENTS

KAN-ED Study Committee
October 17, 2011
Jerry Huff, Director of Kan-ed

Attached, please find the Circuit Utilization Report as requested by the Kan-ed Interim Committee. The report was created by the Kan-ed Network Operations Center (NOC), a contracted service from KanREN.

Kan-ed staff regularly reviews similar reports regarding circuit utilization. As the name implies, this report is concerned with circuit utilization only, and is not a complete picture of the usage of Kan-ed services.

As always, the data used to address a specific question dictates the way the data appears. In this report it is worth noting that changing in the time period (day, week, month), the scale, or displaying the data upstream versus downstream would have an impact.

Concerning circuit utilization, Kan-ed staff routinely reviews a report similar to what is presented and initiate specific actions based on the data. When a report would indicate circuit utilization falls outside the norm range, staff contacts the entity using that circuit to discuss the utilization. Likewise, circuits that show little or no activity are a concern. Kan-ed staff has discovered there may be many explanations for abnormal activity. For example: changes in the client LAN, the circuit is being utilized for a specific application, changes within the client environment of the use of different application, changes in budget that affect the use of a particular application, etc.

If you have any questions about this report, the data presented, or specific activities that Kan-ed staff undertakes to review the network. Please don't hesitate to contact me.



Kan-ed Circuit Bandwidth Utilization

Initiated by:
Cortney T. Buffington

Kansas Legislature
Kan-ed Study Committee (Interim)
State of Kansas
3 October 2011

Abstract: During the September 13th meeting of the Kan-ed Study Committee, Rep. Calloway asked for raw Kan-ed circuit utilization information. Chairman Rhoades asked KanREN to produce such a report. This report serves to fulfill that request, along with a numerical analysis of need, which may form a first cut of an individual needs assessment.

Date	Version	Changes	Author
10/3/2011	1.0	Initial Document	CTB
10/10/2011	1.1	Error Correction, Maize USD 266	CTB
10/11/2011	1.2	Error Correction, deleted Cytek, clarified wording in conclusions	CTB/JH
10/13/2011	1.3	Error Correction - typographic	CTB/JH

Introduction

Purpose:

The purpose of this report is to satisfy the KS Legislature, Kan-ed Study Committee request for Kan-ed circuit utilization information before the next meeting date, currently scheduled for October 27, 2011.

Scope:

The scope of this document takes some liberties with the legislative request in an attempt to answer the logical questions that follow. It is not intended to be a final needs assessment for each site, but a starting point to determine which sites likely need more directed assessment regarding their circuits. This report is generated with numerical analysis only.

Overview:

This report was generated with information contained in KanREN's network monitoring/measurement system. In KanREN's capacity as Network Operations Center for Kan-ed, certain useful data is collected regarding the Kan-ed network. The data that is collected regarding network utilization was analyzed and a set of formulae were developed to create a numerically based answer to the questions:

How many Kan-ed circuits are underutilized?

How many Kan-ed circuits are entirely un-used?

How many Kan-ed sites really just need commercial, business-class Internet connections?

Actual raw usage data for each circuit managed by KanREN, as Kan-ed's Network Operations Center (NOC) is also included. Once the equations were set and data analyzed, KanREN's aggregation layer (the portion of KanREN's network that works similarly to Kan-ed) was also analyzed using the same equations, and has been included here both for context and comparison, even though it was not requested.

Findings

Findings from this report are useful in two ways. The first is to gain an overall feel for the nature of traffic using Kan-ed connections, the level of utilization, and how the served institutions may best be served. The second is as a catalog of usage levels for Kan-ed member institutions in the appendix. It is again cautioned that while the equations used should be generally valid when grouping data into classes, or Kan-ed-wide, individual institutions, especially those near the break point, could fall either way. Given the things that a numeric report cannot address, as many as 15% of the site circuits categorized as "Internet" may move to the "ARN" category. At the same time, as much as 10% of the ARN-identified site circuits may prefer or only need Internet connectivity. This numeric analysis will allow a "starting point" for further needs assessment and provide discussion points for future decisions.

Definitions:

Internet - A circuit connection that presents as a good candidate for a commercial, business-class Internet connection rather than a direct ARN connection.

ARN - A circuit connection that presents as a good candidate for direct connection to the ARN (Advanced Regional Network, serving Research, Education, Healthcare and other similar organizations).

Disconnect - A circuit connection that presents as unused and should be disconnected.

Underutilized - A circuit connection that presents as either very infrequently used (e.g. a few hours/month), or usage simply never comes close to the provisioned bandwidth of the circuit. In this context, underutilized should be considered very underutilized, as the calculation of utilization was somewhat generous.

Scheduling Video - The site is using Kan-ed centralized video services. This indicated the site is taking advantage of Kan-ed's scheduling system, multi-point conference unit, support for them, etc. Sites may be using video on their own, without these services, but these activities are unknown to the NOC, and thus cannot be reported.

The following represent the findings for Kan-ed as a whole Kan-ed by constituent class. In order to add additional context and comparison to a similar undertaking operating without direct state funding, KanREN's aggregation layer information (some KanREN members host core backbone infrastructure and cannot be evaluated in the same way) has also been analyzed with the same methods and formulae as used for Kan-ed.

The methods used to generate the findings were mathematical in order to provide the greatest amount of objectivity for a "First Cut" approach. Given the available data, there are clear caveats involved. For more information on how the findings were developed, please see the section of this report titled "Analysis Method"

Kan-ed:

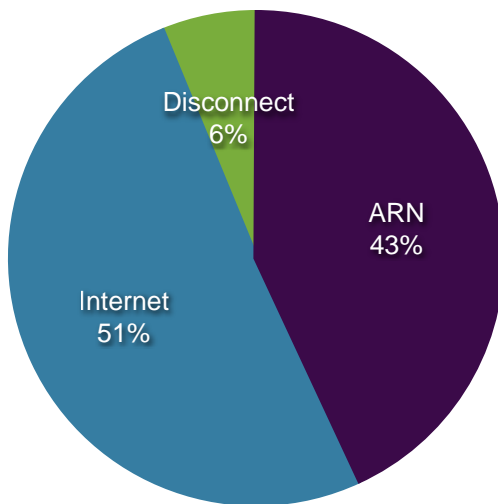
The following tables and charts provide utilization findings for the Kan-ed 2.0 network direct connections (those connections managed by the NOC). They are organized by all of Kan-ed 2.0 combined, then by each major constituent group.

All Groups:

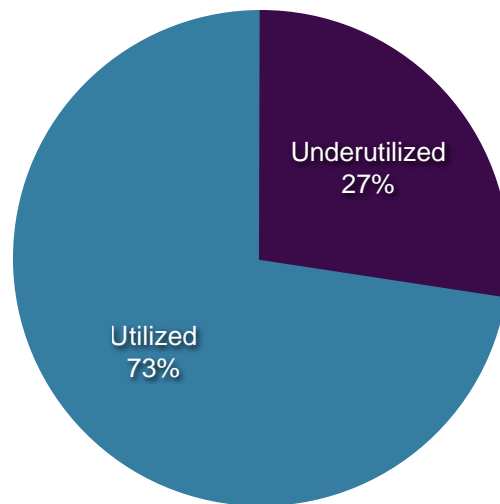
All Kan-ed Constituent Groups Combined*

All Constituent Groups	Number	Percentage
Number of circuits	407	100% (of 407)
Average Connection Speed	2.9Mbps	
Average 95th Percentile Utilization - TO the sites	1.9Mbps	
Average 95th Percentile Utilization - FROM sites	.8Mbps	
Sites Scheduling Video*	123	30%
ARN Connection Recommendations	175	43%
Internet Connection Recommendations	207	51%
Disconnect Recommendations	25	6%
Circuits Underutilized	112	27%

All Connections - Recommendations



All Connections - Utilization

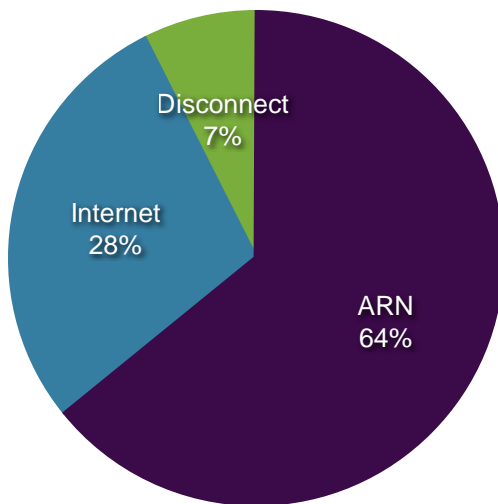


* Includes Kan-ed 2.0 network direct connections (those connections managed by the NOC).

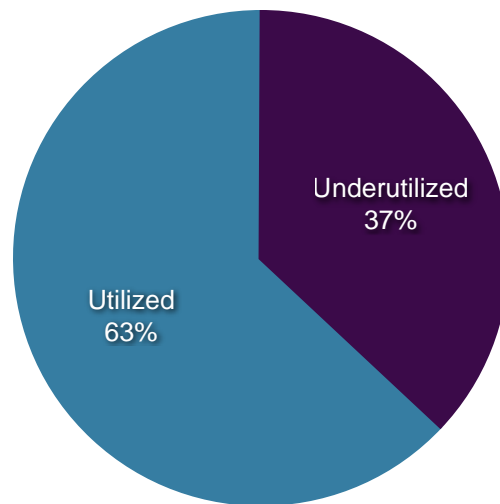
Hospitals/Medical*

Hospitals/Medical	Number	Percentage
Number of circuits	81	20% (of All Sites)
Average Connection Speed	2.2Mbps	
Average 95th Percentile Utilization - TO the sites	1.2Mbps	
Average 95th Percentile Utilization - FROM sites	.8Mbps	
Sites Scheduling Video*	29	36%
ARN Connection Recommendations	52	64%
Internet Connection Recommendations	23	28%
Disconnect Recommendations	6	7%
Circuits Underutilized	30	37%

Hospitals/Medical - Recommendations



Hospitals/Medical - Utilization

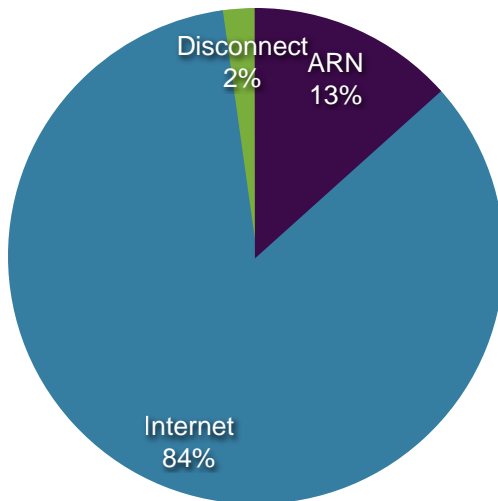


* Includes Kan-ed 2.0 network direct connections (those connections managed by the NOC).

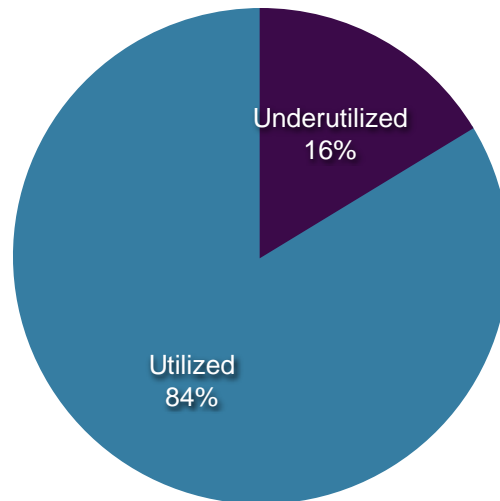
Libraries*

Libraries	Number	Percentage
Number of circuits	135	33% (of All Sites)
Average Connection Speed	1.6Mbps	
Average 95th Percentile Utilization - TO the sites	1.2Mbps	
Average 95th Percentile Utilization - FROM sites	.2Mbps	
Sites Scheduling Video*	5	4%
ARN Connection Recommendations	18	13%
Internet Connection Recommendations	114	84%
Disconnect Recommendations	3	2%
Circuits Underutilized	22	16%

Libraries - Recommendations



Libraries - Utilization

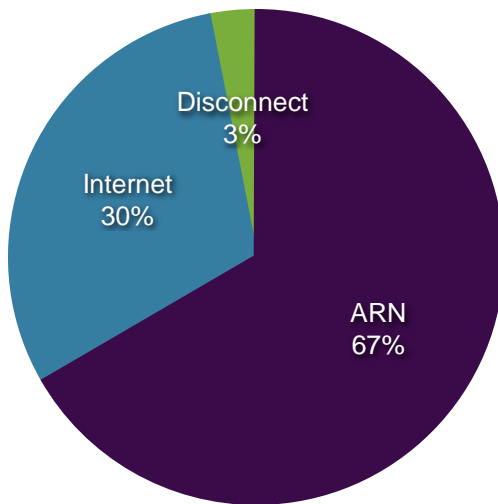


* Includes Kan-ed 2.0 network direct connections (those connections managed by the NOC).

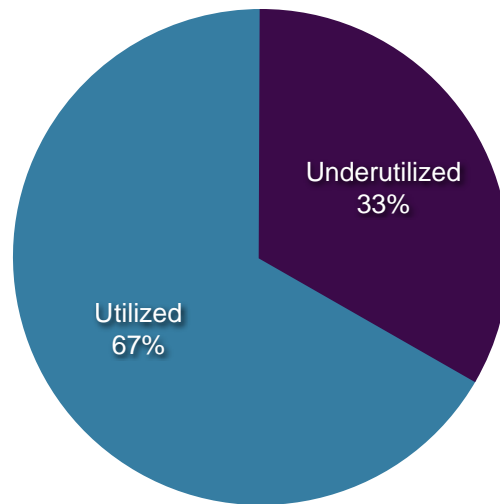
Higher Education*

Higher Education	Number	Percentage
Number of circuits	32	8% (of All Sites)
Average Connection Speed	5.3Mbps	
Average 95th Percentile Utilization - TO the sites	4.2Mbps	
Average 95th Percentile Utilization - FROM sites	1.9Mbps	
Sites Scheduling Video*	17	52%
ARN Connection Recommendations	21	67%
Internet Connection Recommendations	10	30%
Disconnect Recommendations	1	3%
Circuits Underutilized	11	33%

Higher Ed - Recommendations



Higher Ed - Utilization

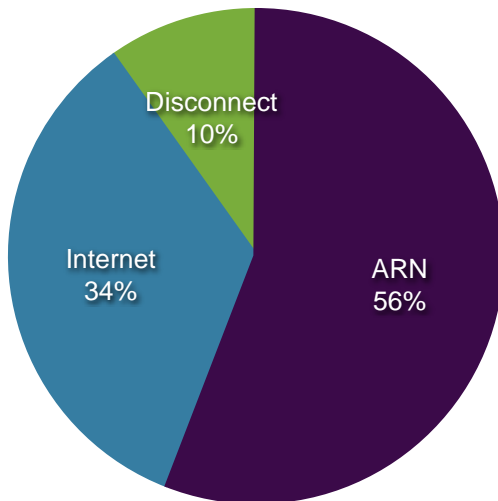


* Includes Kan-ed 2.0 network direct connections (those connections managed by the NOC).

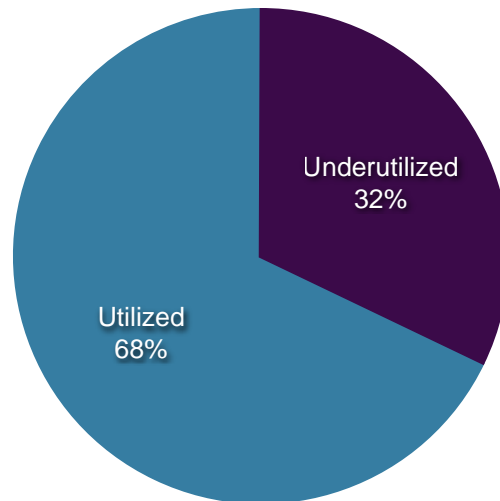
Public K12*

Public K12	Number	Percentage
Number of circuits	143	35% (of All Sites)
Average Connection Speed	4.0Mbps	
Average 95th Percentile Utilization - TO the sites	2.5Mbps	
Average 95th Percentile Utilization - FROM sites	1.1Mbps	
Sites Scheduling Video*	72	50%
ARN Connection Recommendations	80	56%
Internet Connection Recommendations	49	34%
Disconnect Recommendations	14	10%
Circuits Underutilized	46	32%

Public K12 - Recommendations



Public K12 - Utilization

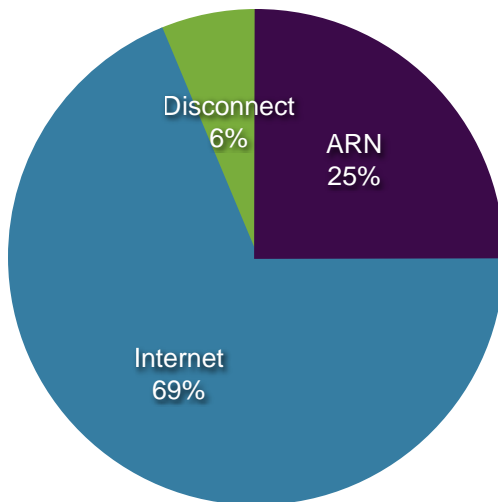


* Includes Kan-ed 2.0 network direct connections (those connections managed by the NOC).

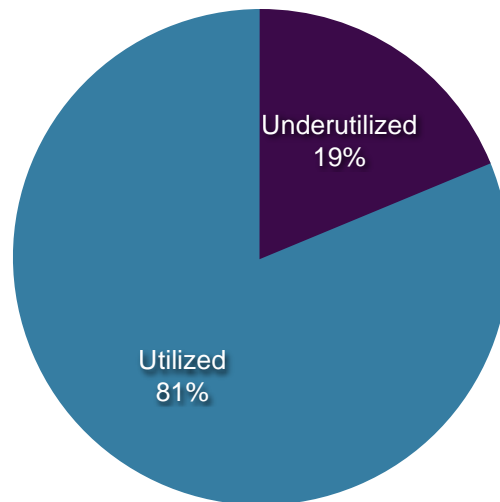
Private K12*

Private K12	Number	Percentage
Number of circuits	16	4% (of All Sites)
Average Connection Speed	1.6Mbps	
Average 95th Percentile Utilization - TO the sites	1.2Mbps	
Average 95th Percentile Utilization - FROM sites	.3Mbps	
Sites Scheduling Video*	0	0%
ARN Connection Recommendations	4	25%
Internet Connection Recommendations	11	69%
Disconnect Recommendations	1	6%
Circuits Underutilized	3	19%

Private K12 - Recommendations



Private K12 - Utilization

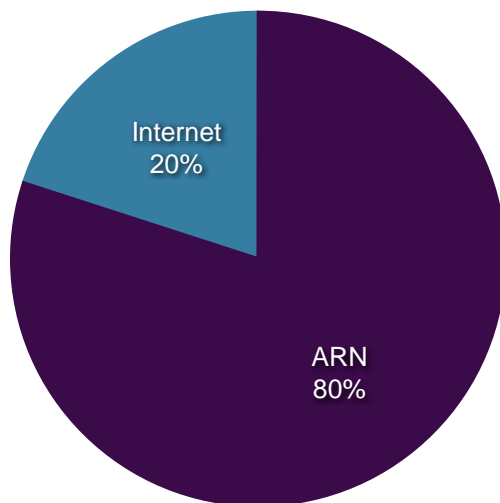


* Includes Kan-ed 2.0 network direct connections (those connections managed by the NOC).

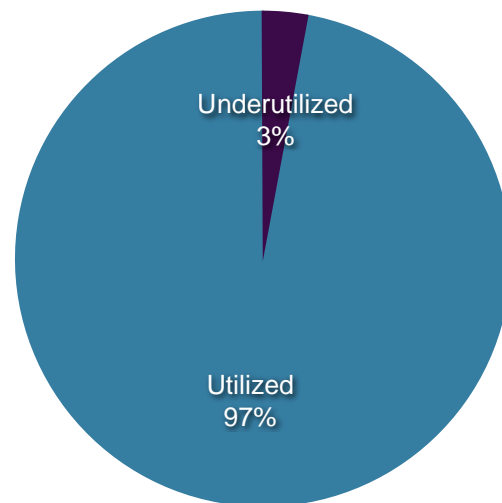
KanREN

KanREN **(does NOT include State Universities, JCCC or WU)	Number	Percentage
Number of circuits	35	80% (of all KanREN sites)
Average Connection Speed	17.5Mbps	
Average 95th Percentile Utilization - TO the sites	12.4Mbps	
Average 95th Percentile Utilization - FROM sites	6Mbps	
Sites Scheduling Video*	13	37%
ARN Connection Recommendations	28	80%
Internet Connection Recommendations	7	20%
Disconnect Recommendations	0	0%
Circuits Underutilized	1	3%

KanREN - Recommendations



KanREN - Utilization

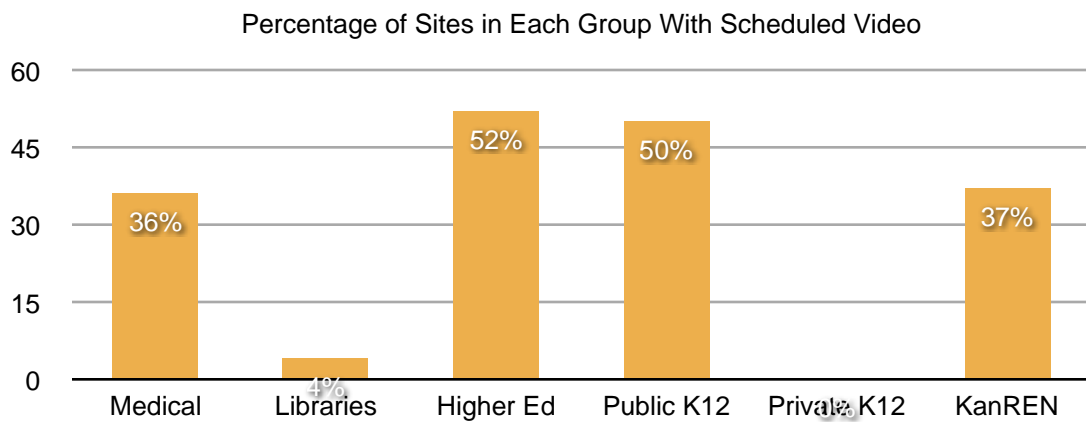
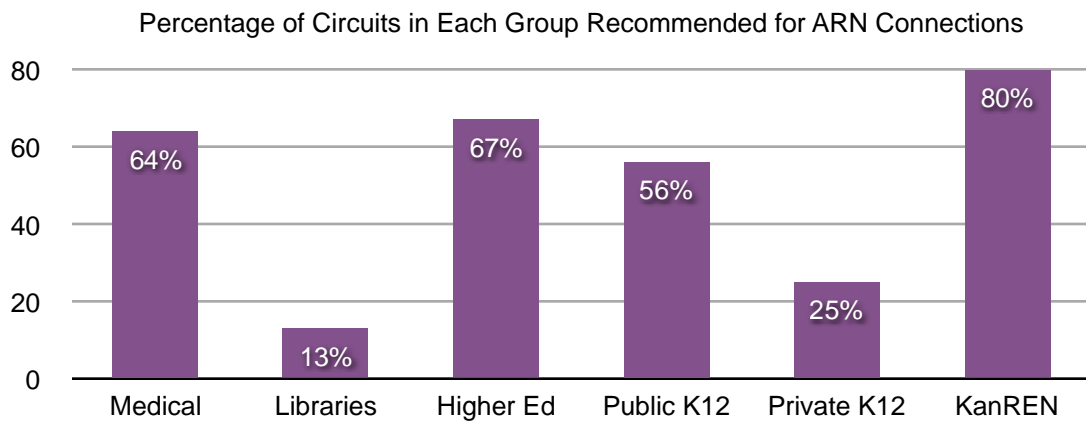
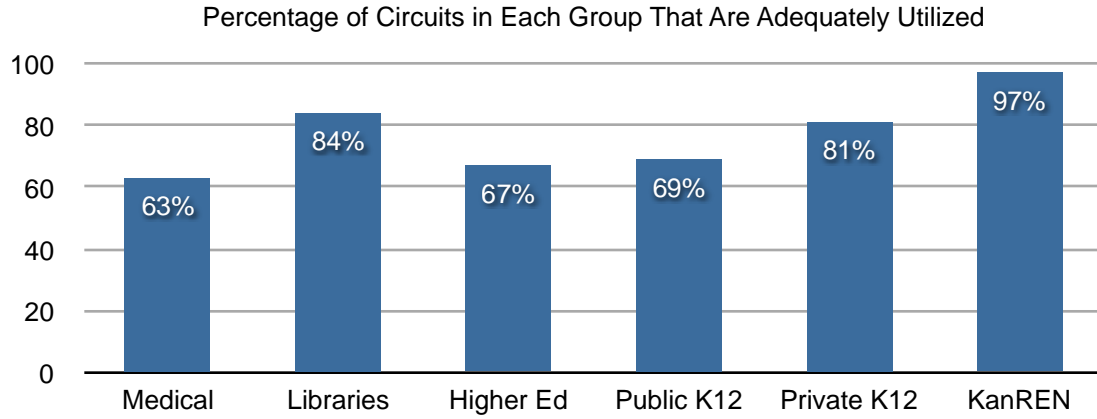


* "Sites Scheduling Video" indicates that the site has used centralized Kan-ed resources for scheduling of video events during the analysis period. Sites may have used videoconferencing on their own, without the benefit of Kan-ed's infrastructure or support during this time.

* * KanREN numbers only include the aggregation layer of the KanREN network. The connection and cost model for KanREN anchor sites, KUMC, JCCC, KU, WU, KSU, FHSU, WSU, ESU and PSU is very different and cannot be accurately compared to Kan-ed connections.

Comparison Charts

The following charts offer “at-a-glance” comparisons for several items spanning all Kan-ed constituent classes and the portion KanREN’s network that operates similarly to Kan-ed’s (excluding KUMC, JCCC, KU, WU, KSU, FHSU, WSU, ESU and PSU)



Conclusions:

There are a number of clear conclusions to be drawn, in general, from the data presented, as some clear patterns are apparent.

Conclusion #1: About half of the Kan-ed 2.0 sites present as good candidates for commercial Internet connections rather than regional network connections, which would provide savings. An excellent example of this is the library community where only 13% passed the initial test for ARN connectivity, and a mere 4% are using scheduled video services. However with a utilization rate of 84%, it is clear that the library community does have a strong need for connectivity.

Conclusion #2: Not derived from this report alone, but supported by it, a great number of sites appear to have Internet connections separate from the Kan-ed connection. Traffic patterns for Kan-ed 2.0 connections, comparison to KanREN connections, and statements from many in the Kan-ed community support this. One of the major rationale for Kan-ed 2.0 was that sites would only need a single connection for everything, citing the inefficiency of multiple connections. It would seem clear that above the free T1 level, a large number of Kan-ed sites are finding other connectivity options.

Conclusion #3: Traffic patterns for a non-trivial number of connections reveal video is in use. It appears that many sites are using fully interactive two-way video systems and connections for applications that are essentially one-way. While this does work extremely well, one-way video does not require dedicated resources like bi-directional video does, and costs considerably less. An update and/or refresh in technologies used to most efficiently meet needs is warranted.

Conclusion #4: This report should form the basis of a more thorough, site-by-site query of needs, backed by data. While this numerical analysis should make the network connectivity needs for most of the Kan-ed 2.0 sites clear, recommendations for a large number that are "in the middle" will require consultation with the sites directly. Any conclusions should be backed with data. For example, if a site were to claim to be heavily dependent upon two-way interactive video, yet data shows the application is used only sparsely it raises questions about how critical the activities are, or is the site actually using a 2nd commercial internet connection for part of their video needs.

Conclusion #5: There is a large disparity between KanREN and Kan-ed circuit bandwidths and utilization. On average, KanREN circuit size is much larger, KanREN circuits are more utilized, and patterns suggest more applicable ARN connections. The segment of KanREN's network operation that was compared is the segment that is applicable. This clearly indicates that there are differences in the KanREN and Kan-ed networking programs. Higher utilization suggests that without subsidized funding, KanREN members are more judicious in choosing a bandwidth level. At the same time, the higher connectivity bandwidth suggests more network service needs, and that the KanREN model is more scalable at higher speeds. Likewise, the Kan-ed model appears extremely popular for T1 level (100% subsidized) connectivity.

Clearly, the Kan-ed 2.0 network program is providing services that are being used. It is also clear that a non-trivial number of Kan-ed 2.0 sites have non-Kan-ed Internet connections with considerably faster speeds than the Kan-ed free T1. Many of these sites are the smallest Kan-ed sites: public libraries. This raises serious questions as to whether or not T1 technology is the answer for future broadband connectivity, or even much of it today.

Analysis Method

Data Source:

The data contained in this report was generated with information contained in KanREN's implementation of Zenoss (<http://www.zenoss.com/>), a network monitoring and measurement software package. Zenoss is the primary tool used by KanREN to monitor and record certain data relating to network events and equipment alarms, as well as collection of interface utilization statistics.

The data evaluated is from January 2011 through September 2011. The data for evaluation is from the traffic-graphing sub-system of Zenoss, which includes the Internet's de-facto standard graphing and presentation software RRDtool (<http://oss.oetiker.ch/rrdtool/>). RRDtool is often incorporated into a great number of both open source and commercial network monitoring/measurement software packages, and has been used to graph everything from network usage to ocean tides.

Information Used:

RRDtool is designed to store data in a highly efficient format. The typical arrangement for RRDtool is to store increasingly lower "resolution" data as the data gets older. For example, samples are taken every 5 minutes, and displayed on a daily graph. Once the data is several days old, the 5 minute samples are reduced to a 30 minute samples for use in displaying data over a longer period of time, and so on.

The raw data was taken as a single snapshot of the time from January 2011 through September 2011, though higher resolutions graphs were checked to look for and correct any anomalous readings. For each circuit, four datum were used:

- Maximum Bandwidth Rate *TO* the site
- Maximum Bandwidth Rate *FROM* the site
- 95th Percentile Bandwidth Rate *TO* the site
- 95th Percentile Bandwidth Rate *FROM* the site

Maximum Bandwidth Rate - The maximum measured bandwidth for any 5 minute period in the entire snapshot timeline, which constitutes nearly 80,000 5 minute samples. This datum represents the absolute maximum amount of bandwidth usage observed, for example, if a circuit were used at it's absolute maximum for 5 minutes, and completely unused for the remainder of the 9 month timeline, the Max Rate would show the maximum utilization that the circuit is capable of. This measurement is useful to determine whether or not the site ever used all of the bandwidth available. Sites will typically come close to the maximum rate at some point due to the "bursty" nature of network traffic.

95th Percentile Bandwidth - The maximum measured 5 minute bandwidth sample after the highest 5% of 5 minute samples are discarded, of the entire snapshot timeline. This means, roughly, that the highest 4,000 samples were discarded, regardless of position in the timeline, and the 4,001st highest was recorded. This is the industry standard method of measurement over time. Due to the bursty nature of network traffic, there are typically short bursts that use much or all of the network bandwidth available. When all available bandwidth is used, users typically perceive this as "slow down", or "lowered quality" when using video. Nearly all networks will experience brief peaks without great detrimental effects, 95th percentile measurement was adopted as a better way of characterizing actual bandwidth needs in an ongoing basis than simply looking at maximum over time.

TO the site - This is data that is going towards the end site from somewhere else. An example would be receiving an e-mail message. The message that a user at a site receives would be represented as data *TO* the site.

FROM the site - Data that is coming from the end site (i.e. generated at the site). An example would be when sending an e-mail message, the message a user sends would be represented as data FROM the site.

The image contained in figure 1 represents a typical long-term traffic graph for a site. Note that the numerical values contained at the bottom are the numbers recorded for use in this report.

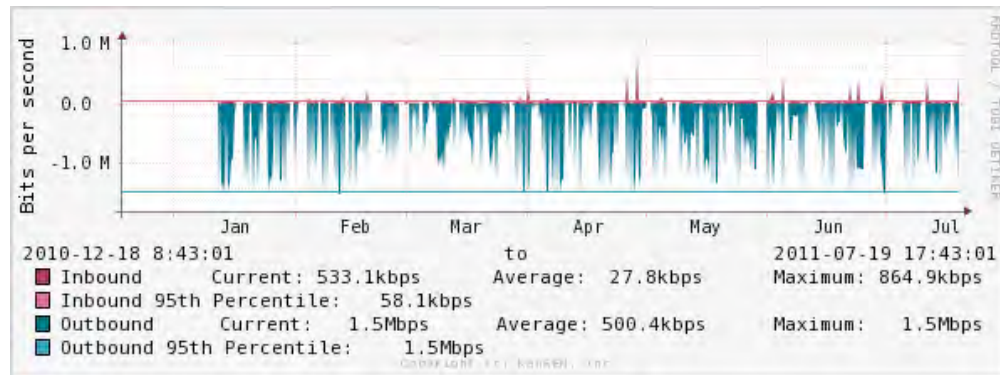


Figure 1 - Typical T1 circuit, presenting a candidate for local Internet service

Analysis Method:

While Zenoss/RRDtool provide the raw data, they do not interpret the meaning of it. Additionally, the author admits that much more accurate data could be used, but that the cost of implementing a "flow-based" system, one that keeps track of both how much data and where it's going or coming from, would be expensive, even with a budget like Kan-ed's.

A numeric analysis method was created by identifying a number of traffic graphs from sites that we know much more about actual usage from, then analyzing them to find out what equations working against the known, numeric data have the most likelihood of producing an accurate result. To be clear, the formulas were developed from experience and empirical techniques. While some subjectivity was used in developing the formulas themselves, they were applied to the hundreds of circuits "blindly", without the benefit of knowing what the results would be, thus creating an objective set of results.

The formulae were vetted by consulting with senior engineering staff at KanREN, as well as program management and network operations colleagues at both Internet2, and our southern neighbor, ONENET in Oklahoma. The reader is cautioned to not make the assumption that the results for each individual named site are necessarily accurate, as there are variables and site needs that cannot be determined by this method alone. What we believe is accurate is the summary data regarding the percentage of the existing, connected sites that may be best served in different ways, or who are simply under-utilizing the connectivity available. The analysis answers the following questions on a macro scale:

- How many Kan-ed circuits are underutilized?*
- How many Kan-ed circuits are entirely un-used?*
- How many Kan-ed sites really just need commercial, business-class Internet connections?*
- How many sites are good candidates for ARN connections?*

How many are entirely unused?

Formula:

If maximum to and maximum from are less than or equal to 100kbps, the circuit is considered entirely unused.

Caveat:

This cannot account for circuits that may have been used only briefly, such as during turn-up, then sitting idle.

How many circuits are underutilized?

Formula:

if 95th percentile to and 95th percentile from are both less than 1/3 of the circuit bandwidth, the circuit is considered underutilized.

Caveat:

This does not reflect the value of the use that is present, only that it is either idle a great deal of the time, or that the circuit's capacity is greater than necessary.

How many sites just need commercial, business-class Internet connectivity?

Formula:

The 95th percentile from is less than or equal to 1/4 of the 95th percentile to - OR - the 95th percentile to is less than or equal to 1/4 of the maximum to and the 95th percentile from is less than or equal to 1/4 of the maximum from; the site likely only needs a business-class commercial internet connection.

Caveat:

It is possible for sites to have applications that would require an ARN connection to be successful, but still test positive. It may also mean that some applications used infrequently or by a disproportionately small number of users at the site may have some reduced performance by not being directly connected to the ARN, however the merit of such cases cannot be determined here.

How many sites are good candidates for ARN connections?

Formula:

This class is determined by exclusion. When none of the prior formulae are satisfied, the connection is considered to be a good ARN candidate

Caveat:

Some connections may show as good ARN candidates, but the member does not see value in an ARN connection. In this case, unless the ARN connection is the most cost effective, it should not be used.

Other Analysis Notes

KanREN did look at other graphing periods for the sites to ensure anomalous readings or severely suspect patterns could be identified and normalized - this is a very rare occurrence.

It is expected that up to 15% of the sites who are identified as being better serviced with a commercial Internet connection may make a positive use-case to have ARN connections instead. At the same time, it is expected that up to 10% who have been identified as being best served by the ARN will chose not to participate in the ARN.

Appendix: Raw Site Data - Kan-ed Healthcare

<u>Site Name</u>	<u>Bandwidth</u>	<u>Connection Type</u>	<u>Video</u>	<u>95th to (kbps)</u>	<u>95th from (kbps)</u>	<u>Max to (kbps)</u>	<u>Max from (kbps)</u>	<u>Connection</u>	<u>Utilized</u>
Anthony Medical Center	3.0 Mbps	t1		2500	1800	3000	2900	ARN	
Ashland Health Center	1.5 Mbps	t1	Y	1500	765	1500	1500	ARN	
St. Rose Amublatory and Surgery Center	1.5 Mbps	t1	Y	486	248	974	1000	ARN	Under
Cheyenne County Hospital	3.0 Mbps	t1	Y	206	29	957	157	Internet	Under
Cheyenne County Hospital Bird City Clinic	1.5 Mbps	t1		2900	2900	3000	3000	ARN	
Children's Mercy South	1.5 Mbps	t1		0	0	74	490	Internet	Under
Citizens Medical Center	3.0 Mbps	t1	Y	3000	2600	3000	2900	ARN	
Clara Barton Hospital	1.5 Mbps	t1	Y	376	26	1400	1000	Internet	Under
Cloud County Hospital	3.0 Mbps	t1		1400	2500	1500	2700	ARN	
Community Healthcare Systems Inc. - Onaga	3.0 Mbps	t1		2700	661	3000	1800	Internet	
Community Memorial Healthcare	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
Decatur County Hospital	1.5 Mbps	t1	Y	973	93	1500	1100	Internet	
Edwards County Hospital	3.0 Mbps	t1	Y	2600	986	3000	2400	ARN	
Ellsworth County Hospital	1.5 Mbps	t1		1500	429	1500	1400	ARN	
Fredonia Regional Hospital	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
F.W. Huston Medical Center	1.5 Mbps	t1		1500	773	1500	1400	ARN	
Goodland Regional Medical Center	3.0 Mbps	t1	Y	612	566	1900	1100	ARN	Under
Hanover Hospital	1.5 Mbps	t1		1100	83	1500	746	Internet	
Harper Hospital	1.5 Mbps	t1	Y	435	635	1500	1300	ARN	Under
Harper Hospital - Argonia Rural Health Clinic	1.5 Mbps	t1		228	42	944	299	Internet	Under
Harper Hospital - Attica Rural Health Clinic	1.5 Mbps	t1		1400	144	1500	1300	Internet	
Harper Hospital - Conway Rural Health Clinc	1.5 Mbps	t1		481	63	1300	182	Internet	Under
Herington Municipal Hospital	3.0 Mbps	t1		2300	1200	3000	2400	ARN	
Holton Community Hospital	1.5 Mbps	t1		1500	1400	1500	1500	ARN	
Horton Community Hospital	3.0 Mbps	t1	Y	1800	2500	3000	2800	ARN	
Hospital District #1 of Rice County	3.0 Mbps	t1		3000	2900	3000	3000	ARN	
Jewell County Hospital	1.5 Mbps	t1	Y	208	0	1100	585	Internet	Under
Kingman Community Hospital	1.5 Mbps	t1	Y	886	464	1500	1100	ARN	
Kiowa County Hospital	1.5 Mbps	t1		1500	1300	1500	1500	ARN	
Lane County Hospital	3.0 Mbps	t1	Y	2500	1300	3000	2100	ARN	
Lanred State Hospital	1.5 Mbps	t1	Y	939	849	1500	1400	ARN	
Lindsborg Community Hospital	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
Logan County Hospital	1.5 Mbps	t1	Y	0	0	0	0	Disconnect	Under
Meade District Hospital / Artesian Valley Health System	3.0 Mbps	t1	Y	3000	1100	3000	2100	ARN	
Memorial Health Systems - Dickinson	3.0 Mbps	t1		2700	2700	3000	3000	ARN	
Minimally Invasice Surgery Hospital	1.5 Mbps	t1		0	10	259	27	ARN	Under
Minneola District Hospital	3.0 Mbps	t1	Y	2300	1100	3000	2000	ARN	
Minneola District Hospital - Bucklin	1.5 Mbps	t1		402	128	1500	238	ARN	Under

Appendix: Raw Site Data - Kan-ed Healthcare

Minneola District Hospital - Fowler	1.5 Mbps	t1		1100	105	1400	406	Internet	
Mitchell County Hospital	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
Mt. Carmel Regional Medical Center	1.5 Mbps	t1		817	811	868	819	ARN	
Nemaha Valley Community Hospital	1.5 Mbps	t1	Y	558	442	1100	1000	ARN	
Oswego Community Hospital	1.5 Mbps	t1		1500	481	1500	1300	ARN	
Phillips County Hospital	3.0 Mbps	t1	Y	1500	1500	3000	2600	ARN	
Phillips County Hospital CBO	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
Phillips County Hospital Coportate	1.5 Mbps	t1		1400	1100	1500	1500	ARN	
Phillips County Hospital Financial Services	1.5 Mbps	t1		134	33	1000	1100	Internet	Under
Pratt Regional Medical Center	1.5 Mbps	t1		826	794	1500	1700	ARN	
Pratt Regional Medical Center - Dodge City	1.5 Mbps	t1		1000	359	1400	1100	ARN	
Pratt Regional Medical Center - Kinsley Rural Health Clin	1.5 Mbps	t1		1300	172	1500	1400	Internet	
Pratt Regional Medical Center - Farmer Clinic - St. John	1.5 Mbps	t1		579	129	1500	917	Internet	
Pratt Regional Medical Center - Farmer Clinic - Stafford	1.5 Mbps	t1		559	50	1500	405	Internet	
Rawlins County Health Center	3.0 Mbps	t1	Y	2200	1900	3000	2600	ARN	
Republic County Hospital	6.0 Mbps	t1		5300	3300	6000	5200	ARN	
Sabetha Community Hospital	3.0 Mbps	t1		1200	141	1500	1200	Internet	
Satanta District Hospital	3.0 Mbps	t1		2900	1100	3000	2500	ARN	
Satanta District Hospital - Sublette Clinic	1.5 Mbps	t1		596	59	1500	284	Internet	
Scott County Hospital	1.5 Mbps	t1	Y	814	692	1100	1100	ARN	
Sedan City Hospital	3.0 Mbps	t1		2200	1900	3000	2300	ARN	
Sheridan County Health Complex	1.5 Mbps	t1	Y	450	505	1000	1300	ARN	Under
Southwest Medical Center	15.5 Mbps	t1	Y	8600	5500	10400	8100	ARN	
St. Francis Hospital - Mission Woods	1.5 Mbps	t1		577	24	1500	1500	Internet	
St. Francis Nortonville Medical Center	1.5 Mbps	t1		44	13	602	46	ARN	Under
St. Francis Hospital - Oskaloosa	1.5 Mbps	t1		385	110	1200	230	ARN	Under
St. Francis Hospital - Valley Falls	1.5 Mbps	t1		162	31	1100	100	Internet	Under
St. Francis Hospital - Winchester	1.5 Mbps	t1		209	37	1300	92	Internet	Under
Stafford County Hospital	3.0 Mbps	t1		1900	2000	2800	2300	ARN	
Stormont-Vail Healthcare	4.5 Mbps	t1	Y	1900	1600	3000	2300	ARN	
Stormont-Vail Healthcare - Alma Clinic	1.5 Mbps	t1		255	93	1400	255	ARN	Under
Stormont-Vail Healthcare - Carbondale Clinic	1.5 Mbps	t1	Y	731	599	1100	1000	ARN	
Stormontt-Vail - Diabetes and Endocrinology Center	1.5 Mbps	t1		732	289	1100	1100	ARN	
Stormont-Vail Healthcare - Emporia Clinic	1.5 Mbps	t1	Y	877	811	1200	1200	ARN	
Stormont-Vail - Kansas Hospital Association	3.0 Mbps	t1		3000	2800	3000	3800	ARN	
Stormont-Vail Healthcare - Lawrence Clinic	1.5 Mbps	t1		352	121	975	212	ARN	Under
Stormont-Vail Healthcare - Lebo Clinic	1.5 Mbps	t1		413	101	1500	150	Internet	Under
Stormont-Vail Healthcare - Meriden Clinic	1.5 Mbps	t1		792	175	1500	485	Internet	
Stormont-Vail Healthcare - Osage City Clinic	1.5 Mbps	t1	Y	168	604	482	804	ARN	Under
Stormont-Vail Healthcare - Oskaloosa Clinic	1.5 Mbps	t1	Y	443	156	1100	954	ARN	Under

Appendix: Raw Site Data - Kan-ed Healthcare

Stormont-Vail Healthcare - Rossville Clinic	1.5 Mbps	t1		449	115	1500	270	ARN	Under
Stormont-Vail Healthcare - Wamego Clinic	1.5 Mbps	t1	Y	865	645	1200	1100	ARN	
Via Christi Regional Medical Center	3.0 Mbps	t1		183	4	533	29	Internet	Under
		Average Connection Speed		2,173		Internet	23	28%	
		Average 95th Utilization To		1,221	56%	ARN	52	64%	
		Average 95th Utilization From		786	36%	Disconnect	6	7%	
		Sites Scheduling Video		29	36%				
		Number of Sites		81	20%	Under	30	37%	

Appendix: Raw Site Data - Kan-ed Libraries

<u>Site Name</u>	<u>Bandwidth</u>	<u>Connection Type</u>	<u>Video</u>	<u>95th to (kbps)</u>	<u>95th from (kbps)</u>	<u>Max to (kbps)</u>	<u>Max from (kbps)</u>	<u>Connection</u>	<u>Utilized</u>
Abilene Public Library	1.5 Mbps	t1		1500	588.5	1500	1500	ARN	
Americus Township Library	1.5 Mbps	t1		1400	91	1500	1600	Internet	
Arma City Library	1.5 Mbps	t1		1300	66	1500	407	Internet	
Ashland City Library	1.5 Mbps	t1		1500	121	1500	892	Internet	
Atchison Public Library	3.0 Mbps	t1		2900	340	3000	1500	Internet	
Axtell Public Library	1.5 Mbps	t1		1300	36	1500	747	Internet	
Baldwin City Library	3.0 Mbps	t1		2300	117.2	3000	1600	Internet	
Barnes Reading Room	1.5 Mbps	t1		171	4	381	22	Internet	Under
Basehor Community Library	1.5 Mbps	t1		1500	189	1500	1500	Internet	
Beattie Public Library	1.5 Mbps	t1		20	3	1200	24	Internet	Under
Beck-Bookman Library	1.5 Mbps	t1		1500	581	1500	1500	ARN	
Bern Community Library	1.5 Mbps	t1		1400	72	1500	996	Internet	
Blue Rapids Public Library	1.5 Mbps	t1		1500	183	1500	750	Internet	
Bonner Springs Library	3.0 Mbps	t1		2300	87	2900	2100	Internet	
Bronson Public Library	1.5 Mbps	t1		1100	33	1500	257	Internet	
Bucklin Public Library	1.5 Mbps	t1		1300	72	1500	1100	Internet	
Burlingame Community Library	1.5 Mbps	t1		1500	978	1500	1500	ARN	
Burnley Memorial Library	1.5 Mbps	t1		1400	91	1500	819	Internet	
Burns Public Library	1.5 Mbps	t1		1400	69	1500	228	Internet	
Caney City Library	1.5 Mbps	t1		1500	60	1500	298	Internet	
Carbondale City Library	1.5 Mbps	t1		1500	327	1500	1400	Internet	
Centralia Community Library	1.5 Mbps	t1		1500	47.3	1500	155	Internet	
Chapman Public Library	1.5 Mbps	t1		1500	112	1500	465	Internet	
Cimarron City Library Ensign Branch	1.5 Mbps	t1		1100	43	1400	297	Internet	
Cimarron City Library Gray County Branch	1.5 Mbps	t1		1300	530	1500	926	ARN	
Cimarron City Library Ingalls Branch	1.5 Mbps	t1		1200	101	1500	716	Internet	
Clay Center Carnegie Library	1.5 Mbps	t1		1400	60	1500	511	Internet	
Clifton Public Library	1.5 Mbps	t1		1400	44	1500	183	Internet	
Coffeyville Public Library	1.5 Mbps	t1		1500	186	1500	1200	Internet	
Coldwater-Wilmore Regional Library	1.5 Mbps	t1		1400	408	1500	901	ARN	
Coldwater-Wilmore Regional Library Wilmore Branch	1.5 Mbps	t1		357	15	1500	36	Internet	Under
Corning City Library	1.5 Mbps	t1		1400	77	1500	314	Internet	
Council Grove Public Library	1.5 Mbps	t1		1500	147	1500	577	Internet	
Delaware Township Library	1.5 Mbps	t1		334	28	1400	250	Internet	Under
Library District #2 Linn County	3.0 Mbps	t1		1900	261	3000	1200	Internet	
Library District #1 Lyon County	1.5 Mbps	t1		163	9	929	44	Internet	Under
Dorothy Bramlage Library	1.5 Mbps	t1		0	0	1100	1000	Internet	Under
Dudley Township Library	1.5 Mbps	t1		1500	273	1500	485	Internet	

Appendix: Raw Site Data - Kan-ed Libraries

Dwight Public Library	1.5 Mbps	t1		1500	50	1500	602	Internet	
Effingham Community Library	1.5 Mbps	t1		530	25	1500	167	Internet	
Elm Creek Township Library	1.5 Mbps	t1		1400	37	1500	523	Internet	
Elmendaro Township Library	1.5 Mbps	t1		1200	52	1500	1400	Internet	
Emporia Public Library	1.5 Mbps	t1		1500	83	1500	492	Internet	
Eudora Public Library	1.5 Mbps	t1		505	38	1500	287	Internet	
Florence Public Library	1.5 Mbps	t1		1300	61	1500	604	Internet	
Ford City Library	1.5 Mbps	t1		268	20	1500	114	Internet	Under
Fowler Public Library	1.5 Mbps	t1		1500	179	1500	990	Internet	
Frankforty City Library	1.5 Mbps	t1		1300	85	1500	1200	Internet	
Goessel Public Library	1.5 Mbps	t1		2	0	86	2	Disconnect	Under
Graves Memorial Library	1.5 Mbps	t1		1500	59	1500	211	Internet	
Greeley County Library	1.5 Mbps	t1		1500	210	1500	1100	Internet	
Hamilton County Library	1.5 Mbps	t1		2100	139	3000	538	Internet	
Hanover Public Library	1.5 Mbps	t1		1500	227	1500	1500	Internet	
Hanston City Library	1.5 Mbps	t1		720	393	1500	1200	ARN	
Haskell Township Library	1.5 Mbps	t1		1400	86	1500	425	Internet	
Herington Public Library	1.5 Mbps	t1		1500	225	1500	1500	Internet	
Hillsboro Public Library	1.5 Mbps	t1		1000	36	1500	662	Internet	
Hope Community Library	1.5 Mbps	t1		1500	41	1500	91	Internet	
Horton Public Library	1.5 Mbps	t1		1500	99	1500	346	Internet	
Humboldt Public Library	1.5 Mbps	t1		1500	72	1500	209	Internet	
Independence Public Library	1.5 Mbps	t1		1100	110	1500	1400	Internet	
Iola Public Library	1.5 Mbps	t1		4	1	1500	676	Internet	Under
Jetmore Municipal Library	1.5 Mbps	t1		1200	230	1300	642	Internet	
Kinsley Public Library	1.5 Mbps	t1		526	892	1500	1500	ARN	
Kiowa County Library	1.5 Mbps	t1		304	15	1000	86	Internet	Under
Kiowa County Library Greensburg Branch	1.5 Mbps	t1		1300	371	1500	1500	ARN	
Kiowa County Library Mullinville Branch	1.5 Mbps	t1		1200	24	1400	73	Internet	
Kismet Public Library	1.5 Mbps	t1		1500	139	1500	879	Internet	
Lane County Library	1.5 Mbps	t1		1500	439	1500	1200	ARN	
Lansing Community Library	1.5 Mbps	t1		1500	167	1500	915	Internet	
Leonardville City Library	1.5 Mbps	t1		1100	136	1500	1500	Internet	
Liberal Memorial Library	3.0 Mbps	t1		3000	664	3000	1600	Internet	
Lincoln Carnegie Library	1.5 Mbps	t1		1500	118	1500	788	Internet	
Linn County Library District #1	1.5 Mbps	t1		1100	77	1500	782	Internet	
Linwood Community Library District 1	1.5 Mbps	t1		383	28	755	760	Internet	Under
Louisburg Library - Miami County	1.5 Mbps	t1		1200	248	1500	1500	Internet	
Lyndon Carnegie Library	1.5 Mbps	t1		676	26	1500	136	Internet	
Manhattan Public Library	1.5 Mbps	t1	Y	3	0	1100	1100	Internet	Under

Appendix: Raw Site Data - Kan-ed Libraries

Marion City Library	1.5 Mbps	t1		1400	91	1500	426	Internet	
Mary Cotton Public Library	1.5 Mbps	t1		1500	170	1500	1500	Internet	
Marsyville Public Library	1.5 Mbps	t1		1500	408	1500	1500	ARN	
McLouth Public Library	1.5 Mbps	t1		1500	228	1500	1300	Internet	
Meade Public Library	1.5 Mbps	t1		1500	121	1500	1200	Internet	
Meadowlark Library	1.5 Mbps	t1		1400	39	1500	556	Internet	
Meriden Community Library	1.5 Mbps	t1		1200	122	1500	922	Internet	
Minneola City Library	1.5 Mbps	t1		832	61	1500	1300	Internet	
Montezuma Township Library	1.5 Mbps	t1		1500	225	1500	636	Internet	
Moore Family Library	1.5 Mbps	t1		454	29	1300	134	Internet	Under
Morrill Public Library	3.0 Mbps	t1		2900	303	3000	1500	Internet	
Morton County Public Library	1.5 Mbps	t1		2700	386	3000	719	Internet	
Northeast Kansas Library System	1.5 Mbps	t1	Y	4	25	1300	1400	Internet	Under
Ness City Public Library	1.5 Mbps	t1		1200	521	1500	1300	ARN	
Nortonville Public Library	1.5 Mbps	t1		175	26	1400	891	Internet	Under
Osage City Public Library	1.5 Mbps	t1		734	47	1500	523	Internet	
Osawatomie Public Library	1.5 Mbps	t1		1500	258	1500	1100	Internet	
Oskaloosa Public Library	1.5 Mbps	t1		1500	273	1500	1400	Internet	
Ottawa Library	3.0 Mbps	t1		3000	590	3000	2200	Internet	
Overbrook Public Library	1.5 Mbps	t1		1500	99	1500	462	Internet	
Paola Free Library	1.5 Mbps	t1		1500	70	1500	865	Internet	
Peabody Township Library	1.5 Mbps	t1		1500	237	1500	1000	Internet	
Pioneer Memorial Library	1.5 Mbps	t1	Y	0	0	1400	1300	Internet	Under
Pittsburg Public Library	1.5 Mbps	t1	Y	1400	537	1500	1500	ARN	
Plains Community Library	1.5 Mbps	t1		1500	481	1500	1200	ARN	
Pottawatomie-Wabaunsee Regional Library Alma Brar	1.5 Mbps	t1		1500	67	1500	1200	Internet	
Pottawatomie-Wabaunsee Regional Library Alta Vista	1.5 Mbps	t1		286	12	1500	419	Internet	Under
Pottawatomie-Wabaunsee Regional Library Eskridge E	1.5 Mbps	t1		1400	49	1500	809	Internet	
Pottawatomie-Wabaunsee Regional Library Harveyvill	1.5 Mbps	t1		733	25	1500	272	Internet	
Pottawatomie-Wabaunsee Regional Library Olsburg B	1.5 Mbps	t1		429	14	1400	38	Internet	Under
Pottawatomie-Wabaunsee Regional Library Onaga Bra	1.5 Mbps	t1		1500	75	1500	564	Internet	
Pottawatomie-Wabaunsee Regional Library St. Mary's	1.5 Mbps	t1		697	21	1400	52	Internet	
Pottawatomie-Wabaunsee Regional Library Westmore	1.5 Mbps	t1		508	15	1300	401	Internet	
Protection Township Library	1.5 Mbps	t1		1200	405	1500	890	ARN	
Ransom Public Library	1.5 Mbps	t1		1300	135	1500	1000	Internet	
Richmond Public Library	1.5 Mbps	t1		1300	88	6300	237	Internet	
Riley City Library	1.5 Mbps	t1		1500	64	1500	592	Internet	
Rossville Community Library	1.5 Mbps	t1		715	557	1500	1500	ARN	
Southeast Kansas Library System	1.5 Mbps	t1		0.5	0	2	1	Disconnect	Under
Seneca Free Library	1.5 Mbps	t1		377	53	1500	284	Internet	Under

Appendix: Raw Site Data - Kan-ed Libraries

Silver Lake Library	1.5 Mbps	t1		1300	649	1500	1400	ARN	
Solomon Public Library	1.5 Mbps	t1		1300	92	1500	626	Internet	
Spearville Township Library	1.5 Mbps	t1		1500	79	1800	236	Internet	
Stanton County Library	3.0 Mbps	t1		2600	899	3000	2400	ARN	
Stevens County Library	1.5 Mbps	t1	Y	1500	345	1500	1100	Internet	
Tonganoxie Public Library	3.0 Mbps	t1		2900	2500	3000	2500	ARN	
Utica Public Library	1.5 Mbps	t1		1200	50	1500	279	Internet	
Vermillion Public Library	1.5 Mbps	t1		417	15	1500	378	Internet	Under
Wamego Public Library	1.5 Mbps	t1		1400	200	1500	1100	Internet	
Washington Public Library	1.5 Mbps	t1		1500	196	1500	667	Internet	
Waterville Public Library	1.5 Mbps	t1		0.2	0	9	2	Disconnect	Under
Wellsville City Library	1.5 Mbps	t1		601	55	1500	612	Internet	
Wetmore Public Library	1.5 Mbps	t1		1300	59	1500	765	Internet	
White City Public Library	1.5 Mbps	t1		1500	76	1500	232	Internet	
Williamsburg Community Library	1.5 Mbps	t1		1400	90	1500	630	Internet	
Winchester Public Library	1.5 Mbps	t1		1500	146	1500	1200	Internet	
Yates Center Public Library	1.5 Mbps	t1		1400	77	1500	450	Internet	
	Average Connection Speed			1,600		Internet	114	84%	
	Average 95th Utilization To			1,231	77%	ARN	18	13%	
	Average 95th Utilization From			184	11%	Disconnect	3	2%	
		Sites Scheduling Video		5	4%				
		Number of Sites		135	33%	Under	22	16%	

Appendix: Raw Site Data - Kan-ed Higher Education

<u>Site Name</u>	<u>Bandwidth</u>	<u>Connection Type</u>	<u>Video</u>	<u>95th to (kbps)</u>	<u>95th from (kbps)</u>	<u>Max to (kbps)</u>	<u>Max from (kbps)</u>	<u>Connection</u>	<u>Utilized</u>
Allen County Community College	15.0 Mbps	DS3	Y	13200	3500	14800	12700	ARN	
Benedictine College	45.0 Mbps	DS3		43400	23100	54800	35600	ARN	
Butler County Community College Andover Campus	1.5 Mbps	t1	Y	1	3	1100	1100	Internet	Under
Butler County Community College Council Grove Campus	3.0 Mbps	t1	Y	2100	819	3000	1100	ARN	
Butler County Community College El Dorado Campus	1.5 Mbps	t1	Y	745	1000	991	1100	ARN	
Butler County Community College Marion Campus	3.0 Mbps	t1	Y	2000	801	3000	1600	ARN	
Butler County Community College Rock Road Campus	3.0 Mbps	t1		2100	2700	3000	2800	ARN	
Butler County Community College Rose Hill Campus	1.5 Mbps	t1		1500	1000	2300	1500	ARN	
Cloud County Community College	20.0 Mbps	DS3	Y	19200	2700	20100	10300	Internet	
Cloud County Community College Geary Campus	3.0 Mbps	t1	Y	1500	1000	2300	1500	ARN	
Coffeyville Community College Columbus Campus	1.5 Mbps	t1	Y	788	814	1100	1100	ARN	
Cowley County Community College	3.0 Mbps	t1	Y	2700	2400	2800	2600	ARN	
Cowley County Community College Mulvane Campus	3.0 Mbps	t1	Y	2200	2100	2200	2200	ARN	
Dodge City Community College	10.5 Mbps	t1	Y	2700	2800	3700	3400	ARN	Under
Donnelly College	1.5 Mbps	t1		1500	1400	1500	1500	ARN	
Flint Hills Technical College	1.5 Mbps	t1	Y	51	100	1100	1100	Internet	Under
Hutchinson Community College McPherson Campus	1.5 Mbps	t1		1400	297	1500	1400	Internet	
Independence Community College	1.5 Mbps	t1		405	404	987	601	ARN	Under
Independence Community College ICC West Campus	1.5 Mbps	t1		2	0	5	1	Disconnect	Under
Kansas City Kansas Community College	1.5 Mbps	t1	Y	0	0	756	379	Internet	Under
Manhattan Area Technical College	1.5 Mbps	t1		24	45	1100	783	Internet	Under
McPherson College	1.5 Mbps	t1		49	1	2	8300	Internet	Under
Neosho County Community College - Ottawa Campus	15.0 Mbps	DS3		6400	5000	15100	6000	ARN	
Northwest Kansas Technical College	1.5 Mbps	t1		7	1	1000	519	Internet	Under
Ottawa University	3.0 Mbps	t1		16	46	3000	2200	Internet	Under
Pratt Community College	6.0 Mbps	t1	Y	2100	1400	6000	2300	ARN	
Pratt Community College - Elearning Center	1.5 Mbps	t1	Y	713	664	874	868	ARN	
Pratt Community College - Winfield Campus	1.5 Mbps	t1	Y	373	410	858	810	ARN	Under
Seward County Community College EduKan	1.5 Mbps	t1		521	225	1700	1000	ARN	
Southwestern College	1.5 Mbps	t1	Y	597	60	1300	1000	Internet	
University of St.Mary - Overland Park	3.0 Mbps	t1		2000	654	3000	2900	ARN	
University of St. Mary	10.0 Mbps	DS3		27100	8000	43300	24700	ARN	
		Average Connection Speed		5,344		Internet	10	30%	
		Average 95th Utilization To		4,294	80%	ARN	21	64%	
		Average 95th Utilization From		1,983	37%	Disconnect	1	3%	
		Sites Scheduling Video		17	53%				
		Number of Sites		32	8%	Under	11	33%	

Appendix: Raw Site Data - Kan-ed Public K12

<u>Site Name</u>	<u>Bandwidth</u>	<u>Connection Type</u>	<u>Video</u>	<u>95th to (kbps)</u>	<u>95th from (kbps)</u>	<u>Max to (kbps)</u>	<u>Max from (kbps)</u>	<u>Connection</u>	<u>Utilized</u>
USD 101 Erie Galesburg Elementary	1.5 Mbps	t1	Y	0	0	1.5	811.5	Internet	Under
USD 101 Erie Galesburg Erie High School	20.0 Mbps	DS3		15700	3300	20100	27400	Internet	
USD 101 Erie Galesburg Middle School	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
USD 103 Cheylin	1.5 Mbps	t1		1500	163.5	1500	1800	Internet	
USD 108 Washington County	4.5 Mbps	t1		4500	1400	4500	2700	ARN	
USD 203 KC Piper	1.5 Mbps	t1	Y	820.1	814.1	835.2	817.3	ARN	
USD 206 Remington Whitewater	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
USD 219 Minneola	9.0 Mbps	t1	Y	6800	4100	8900	5700	ARN	
USD 220 Ashland	6.0 Mbps	t1	Y	3700	3800	4.3	4.3	Disconnect	
USD 223 Barnes - District Office	1.5 Mbps	t1		878.4	61.1	1500	279.3	Internet	
USD 223 Barnes Hanover High School	4.5 Mbps	t1	Y	4500	2600	4500	3700	ARN	
USD 223 Barnes Linn High School	3.0 Mbps	t1	Y	1900	2400	2300	2500	ARN	
USD 225 Fowler	9.0 Mbps	t1	Y	6400	2500	9000	3100	ARN	
USD 226 Meade	6.0 Mbps	t1	Y	2300	2300	2800	3300	ARN	
USD 227 Jetmore	6.0 Mbps	t1	Y	2300	2400	2400	2500	ARN	
USD 239 North Ottawa County - Minneapolis High School	6.0 Mbps	t1		5800	781.6	6000	3100	Internet	
USD 242 Weskan	1.5 Mbps	t1		1500	317.3	1500	1100	Internet	
USD 251 North Lyon County Americus Elementary	1.5 Mbps	t1		1400	101.2	1500	1300	Internet	
USD 251 North Lyon County Northern Heights	3.0 Mbps	t1		789.4	801.6	804.6	1600	ARN	Under
USD 251 North Lyon County Reading Elementary	1.5 Mbps	t1		1300	129.3	1500	995.9	Internet	
USD 252 Southern Lyon County Hartford High School	3.0 Mbps	t1		3000	1000	3000	3000	ARN	
USD 252 Southern Lyon County Neosho Rapids K-8	1.5 Mbps	t1		1500	368.3	1500	1300	Internet	
USD 254 Barber County North Elementary	1.5 Mbps	t1	Y	183.7	10.6	414	494.9	Internet	Under
USD 254 Barber County North High School	1.5 Mbps	t1	Y	5.1	35.2	1100	973.2	Internet	Under
USD 255 South Barber	1.5 Mbps	t1	Y	334.6	137.5	1500	53.7	ARN	Under
USD 256 Marmaton Valley	3.0 Mbps	t1	Y	1600	1600	1600	1600	ARN	
USD 262 Valley Center High School	1.5 Mbps	t1		730.6	23.8	1500	955.9	Internet	
USD 262 Valley Center Learning Center	1.5 Mbps	t1		197.4	4	427.9	6.5	Internet	Under
USD 265 Goddard - District Office	3.0 Mbps	t1	Y	2200	2300	2400	2400	ARN	
USD 265 Goddard High School	1.5 Mbps	t1	Y	819.6	825.5	892.9	831.8	ARN	
USD 266 Maize	20.0 Mbps	DS3	Y	2600	2900	3800	3700	ARN	Under
USD 284 Chase County	3.0 Mbps	t1		3000	558.5	3000	2700	Internet	
USD 285 Cedar Vale	6.0 Mbps	t1	Y	3700	1800	6000	2700	ARN	
USD 286 Chautauqua County Sedan High School	4.5 Mbps	t1		2500	212.6	4500	1800	Internet	
USD 288 Central Heights	4.5 Mbps	t1	Y	4500	4100	4500	4400	ARN	
USD 289 Wellsville District Office	1.5 Mbps	t1		1200	117.8	1500	1100	Internet	
Usd 291 Grinnell	1.5 Mbps	t1		155.2	18.9	150	280	Internet	Under
USD 294 Oberlin	3.0 Mbps	t1		3000	536.1	3000	2700	Internet	

Appendix: Raw Site Data - Kan-ed Public K12

USD 297 St. Francis Community School	6.0 Mbps	t1		5600	1200	6000	5800	Internet	
USD 298 Lincoln	3.0 Mbps	t1	Y	1300	1500	2400	2300	ARN	
USD 300 Commanche County	6.0 Mbps	t1	Y	5600	2700	6000	4800	ARN	
USD 306 Southeast of Saline	1.5 Mbps	t1		1200	515.3	1500	1300	ARN	
USD 307 Ell Saline	1.5 Mbps	t1		19.5	2.3	521.9	15.5	Internet	Under
USD 308 Hutchinson	1.5 Mbps	t1	Y	717.7	153.2	986.4	76400	Internet	
USD 311 Pretty Prairie	1.5 Mbps	t1		391.7	401.7	415.2	403.8	ARN	Under
USD 312 Haven Pleasantview	3.0 Mbps	t1		3000	331.5	3000	1400	Internet	
USD 322 Onaga-Havensville-Wheaton	4.5 Mbps	t1		4500	544.2	4500	1000	Internet	
USD 327 Ellsworth	3.0 Mbps	t1	Y	3000	937.7	3000	2800	ARN	
USD 329 Mill Creek Valley Alma Grade School	12.0 Mbps	t1		11500	3600	12000	10700	ARN	
USD 331 Kingman Norwich Elementary	1.5 Mbps	t1	Y	125.7	2.4	741.9	814.8	Internet	Under
USD 333 Concordia	12.0 Mbps	t1		10900	2400	12000	7400	Internet	
USD 335 North Jackson County	1.5 Mbps	t1		0	0	1100	1400	Internet	Under
USD 336 Holton	1.5 Mbps	t1	Y	612.7	624.7	1200	880.8	ARN	
USD 338 Valley Falls	3.0 Mbps	t1		3000	1400	3000	3300	ARN	
USD 339 Jefferson County North	3.0 Mbps	t1		353.9	420	1100	748.8	ARN	Under
USD 340 Jefferson County West High School	1.5 Mbps	t1		649.1	206.4	1500	1300	ARN	
USD 340 Jefferson County West Middle School	1.5 Mbps	t1		30.2	104.2	298.3	1200	Internet	Under
USD 341 Oskaloosa	6.0 Mbps	t1		6000	2800	6000	5300	ARN	
USD 343 Perry-Lecompton	6.0 Mbps	t1	Y	6000	1500	6800	5300	ARN	
USD 345 Seaman	1.5 Mbps	t1		277.3	621.2	996.7	1300	ARN	Under
USD 346 Jayhawk Linn	1.5 Mbps	t1	Y	773.4	773.9	809.6	788.9	ARN	
USD 347 Kinsley Offerle	3.0 Mbps	t1	Y	1700	2500	2400	2700	ARN	
USD 348 Baldwin	1.5 Mbps	t1		68.5	91.9	1400	1100	Internet	Under
USD 353 Wellington	6.0 Mbps	t1	Y	1000	982.7	1600	1500	ARN	Under
USD 356 Conway Springs	3.0 Mbps	t1	Y	1100	1100	1600	1100	ARN	
USD 357 Belle Plaine	1.5 Mbps	t1	Y	372.7	429.3	1000	1100	ARN	Under
USD 358 Oxford	9.0 Mbps	t1	Y	8500	1600	9000	7200	Internet	
USD 359 Argonia	4.5 Mbps	t1	Y	1600	1800	2200	2200	ARN	
USD 360 Caldwell	3.0 Mbps	t1	Y	1200	1200	1600	1600	ARN	
USD 361 Anthony Harper Anthony Elementary	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
USD 361 Anthony Harper Chaparral High School	3.0 Mbps	t1	Y	767.1	781.8	1100	943.2	ARN	Under
USD 361 Anthony Harper Harper Elementary	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
USD 362 Prairie View	12.0 Mbps	t1	Y	6200	1200	10500	7300	Internet	
USD 366 Woodson	3.0 Mbps	t1	Y	1600	1600	1600	1700	ARN	
USD 369 Burrton	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
USD 371 Montezuma	3.0 Mbps	t1	Y	3000	1800	3800	2900	ARN	
USD 375 Benton Elementary	1.5 Mbps	t1		179.2	0	402.9	185.5	Internet	Under
USD 375 Greenwich Elementary	1.5 Mbps	t1		0	0	0	0	Disconnect	Under

Appendix: Raw Site Data - Kan-ed Public K12

USD 375 Circle High School	3.0 Mbps	t1	Y	254.7	245.5	550.9	455.4	ARN	Under
USD 375 Circle Middle School	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
USD 375 Circle Oil Hill Elementary	1.5 Mbps	t1		81.8	76.9	157.7	302.5	ARN	Under
USD 375 Circle Towanda Elementary	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
USD 377 Atchison County Community Schools	9.0 Mbps	t1		8200	3600	8900	8200	ARN	
USD 379 Clay Center	3.0 Mbps	t1	Y	1100	899.3	2400	2400	ARN	
USD 380 Vermillion Centralia High School	9.0 Mbps	t1	Y	7200	3800	9000	4900	ARN	
USD 30 Vermillion District Office	1.5 Mbps	t1		1400	1200	1500	1500	ARN	
USD 380 Vermillion Frankfort	9.0 Mbps	t1	Y	7600	2700	9000	7000	ARN	
USD 384 Blue Valley Olsburg Elementary	1.5 Mbps	t1		1400	74.8	1500	1500	Internet	
USD 385 Andover	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
USD 386 Madison-Virgil	3.0 Mbps	t1	Y	367.1	505.7	1500	1600	ARN	Under
USD 390 Hamilton	3.0 Mbps	t1	Y	2800	1200	3000	164300	ARN	
USD 393 Solomon	6.0 Mbps	t1	Y	5100	98.1	6000	5600	Internet	
USD 394 Rose Hill	1.5 Mbps	t1	Y	89.1	7.4	1500	1300	Internet	Under
USD 396 Douglass Public Schools	1.5 Mbps	t1	Y	535.9	526.3	549.7	559.4	ARN	
USD 404 Riverton	3.0 Mbps	t1	Y	274.6	495	815	813	ARN	Under
USD 409 Atchison	30.0 Mbps	DS3		12500	1100	28900	11600	Internet	
USD 415 Hiawatha	3.0 Mbps	t1		832.9	2.6	696.9	420.1	Internet	Under
USD 416 Louisburg	1.5 Mbps	t1		1500	301.1	1500	1500	Internet	
USD 417 Morris Prairie Heights Elementary	1.5 Mbps	t1		1500	94.6	2900	635	Internet	
USD 417 Morris Prairie Heights Middle School	1.5 Mbps	t1		1500	136.3	3000	897.8	Internet	
USD 421 Lyndon	6.0 Mbps	t1	Y	3200	1600	5900	2500	ARN	
USD 422 Greensburg	9.0 Mbps	t1	Y	2600	2700	4600	4800	ARN	Under
USD 430 South Brown County	3.0 Mbps	t1	Y	599.9	773.6	803.9	805	ARN	Under
USD 434 Santa Fe Trail	3.0 Mbps	t1		2600	2600	3000	3000	ARN	
USD 435 Abilene	7.5 Mbps	t1		7500	2300	9500	5500	ARN	
Usd 441 Sabetha - Sabetha High School	3.0 Mbps	t1	Y	1900	2300	2400	2500	ARN	
USD 441 Sabetha - Wetmore High School	3.0 Mbps	t1	Y	2000	2200	2400	2400	ARN	
USD 442 Nemaha Valley	6.0 Mbps	t1	Y	5400	1500	6000	3900	ARN	
USD 444 Little River	1.5 Mbps	t1		24.5	32.3	814.7	533	Internet	Under
USD 446 Independence	1.5 Mbps	t1	Y	798	815	823	817	ARN	
USD 447 Cherryvale Thayer	1.5 Mbps	t1		1400	616	2900	1300	ARN	
USD 451 Baileyville B&B	1.5 Mbps	t1		1500	396	1600	1200	ARN	
USD 456 Marais des Cygnes Elementary	1.5 Mbps	t1		1100	53	1500	683	Internet	
USD 456 Marais des Cygnes High School	3.0 Mbps	t1		3000	1400	3000	2800	ARN	
USD 459 Bucklin	9.0 Mbps	t1	Y	8500	3400	9000	4600	ARN	
USD 461 Neodesha	1.5 Mbps	t1		0	0	1400	553	Internet	Under
USD 462 Central	1.5 Mbps	t1	Y	1300	1300	1400	1400	ARN	
USD 465 Winfield	1.5 Mbps	t1		0	0	0	0	Disconnect	Under

Appendix: Raw Site Data - Kan-ed Public K12

USD 470 Arkansas City	1.5 Mbps	t1		0	5	0	9	Disconnect	Under
USD 471 Dexter	3.0 Mbps	t1	Y	3000	832	3000	945	ARN	
USD 476 Copeland	1.5 Mbps	t1		1500	178	1500	1700	Internet	
USD 479 Crest	1.5 Mbps	t1	Y	703	695	813	794	ARN	
USD 483 Kismet Plains Southwestern Heights Jr./Sr. High School	3.0 Mbps	t1	Y	2500	2500	2500	2500	ARN	
USD 488 Axtell-Bern Axtell High School	3.0 Mbps	t1	Y	2100	2200	2400	2400	ARN	
USD 488 Axtell-Bern Bern High School	3.0 Mbps	t1	Y	2200	2200	2400	2400	ARN	
USD 492 Flint Hills	6.0 Mbps	t1	Y	5900	2000	6000	3300	ARN	
USD 498 Valley Heights Blue Rapids Elementary	3.0 Mbps	t1		0	0	0	1	Disconnect	Under
USD 498 Valley Heights Senior High School	7.5 Mbps	t1	Y	7500	2200	7500	4700	ARN	
USD 498 Valley Heights - Waterville	1.5 Mbps	t1		0	0	0	0	Disconnect	Under
USD 499 Galena	3.0 Mbps	t1	Y	636	804	2800	1600	ARN	Under
USD 504 Oswego	6.0 Mbps	t1		5200	973	6000	3000	Internet	
USD 509 South Haven	3.0 Mbps	t1	Y	1100	1100	1600	1500	ARN	
USD 511 Attica	1.5 Mbps	t1	Y	633	485	809	720	ARN	
USD 602 Northwest Kansas Education Service Center	3.0 Mbps	t1	Y	1000	884	1700	2400	ARN	
ANW Special Ed Cooperative #603 BAIT	1.5 Mbps	t1		1100	103	1500	634	Internet	
ANW Special Ed Cooperative # 603	1.5 Mbps	t1		58	6	1500	213	Internet	Under
Northeast Kansas Education Service Center Technology Services	6.0 Mbps	t1	Y	2900	1100	6000	3200	ARN	
Greenbush of Topeka - Forbes	1.5 Mbps	t1	Y	0	0	817	814	Internet	Under
Sumner County Educational Services Interlocal #619	1.5 Mbps	t1	Y	547	543	1100	807	ARN	
Three Lakes Educational Cooperative #620 - Main	4.5 Mbps	t1		1900	218	4500	4900	Internet	
Three Lakes Educational Cooperative #620 - West	1.5 Mbps	t1		979	45	1500	1200	Internet	
Smoky Hill Service Center - Hays	1.5 Mbps	t1	Y	812	811	814	815	ARN	
TEEN USD 632	45.0 Mbps	DS3	Y	28100	7200	43300	24400	ARN	
	Average Connection Speed			4,024		Internet	49	34%	
	Average 95th Utilization To			2,477	62%	ARN	80	56%	
	Average 95th Utilization From			1,052	26%	Disconnect	14	10%	
	Sites Scheduling Video			72	50%				
	Number of Sites			143	35%	Under	46	32%	

Appendix: Raw Site Data - Kan-ed Private K12

<u>Site Name</u>	<u>Bandwidth</u>	<u>Connection Type</u>	<u>Video</u>	<u>95th to (kbps)</u>	<u>95th from (kbps)</u>	<u>Max to (kbps)</u>	<u>Max from (kbps)</u>	<u>Connection</u>	<u>Utilized</u>
Diocese of Kansas City - Christ the King Elementary School	1.5 Mbps	t1		1400	148	1500	1500	Internet	
Diocese of Kansas City - Hayden High School	3.0 Mbps	t1		3000	1100	3000	2800	ARN	
Diocese of Kansas City - Holy Family Catholic School East Campus	1.5 Mbps	t1		1500	105	1500	369	Internet	
Diocese of Kansas City - Holy Family Catholic School West Campus	1.5 Mbps	t1		352	22	1500	54	Internet	Under
Diocese of Kansas City - Holy Name Elementary	1.5 Mbps	t1		1500	101	1500	854	Internet	
Diocese of Kansas City - Holy Rosary - Wea Catholic School	1.5 Mbps	t1		1500	293	1500	1300	Internet	
Diocese of Kansas City - John Paul II Catholic School	1.5 Mbps	t1		1500	232	1500	1500	Internet	
Diocese of Kansas City - Our Lady of Unity	1.5 Mbps	t1		1500	88	1500	1400	Internet	
Diocese of Kansas City - St. Michael	1.5 Mbps	t1		1500	453	1800	1300	ARN	
Diocese of Kansas City - St. Patricks Elementary	1.5 Mbps	t1		1000	56	1500	726	Internet	
Diocese of Kansas City - St. Peter's Cathedral	1.5 Mbps	t1		1500	882	1800	1500	ARN	
Kickapoo Nation Schools - Kickapoo Nation High School	1.5 Mbps	t1		0	0	1500	35	Internet	Under
Diocese of Salina - Manhattan Catholic Schools	1.5 Mbps	t1		1500	621	1500	1800	ARN	
Diocese of Salina - Sacred Heart Elementary	1.5 Mbps	t1		553	18	1400	1200	Internet	
Diocese of Salina - St. Mary's Elementary	1.5 Mbps	t1		799	29	1500	110	Internet	
Wellington Christian Academy	1.5 Mbps	t1		0	2	54	5	Disconnect	Under
	Average Connection Speed			1,594		Internet	11	69%	
	Average 95th Utilization To			1,194	75%	ARN	4	25%	
	Average 95th Utilization From			259	16%	Disconnect	1	6%	
	Sites Scheduling Video			0	0%				
	Number of Sites			16	4%	Under	3	19%	

Appendix: Raw Site Data - KanREN Aggregation Layer

[illegible]

Appendix: Raw Site Data - KanREN Aggregation Layer

	Average Connection Speed			17,571		Internet	7	20%	
	Average 95th Utilization To			12,409	71%	ARN	28	80%	
	Average 95th Utilization From			6,029	34%	Disconnect	0	0%	
	Sites Scheduling Video			13	37%				
	Number of Sites			35		Under	1	3%	

Notes:

Some KanREN site connections were engineered to support ISO layer 2 connectivity in order to extend the institution's enterprise network between sites. Some have the capability but do not yet use it, others use only this feature. Appreciable layer 2 connectivity use will skew the formula used to determine a connection recommendation.

* Site very recently upgraded connectivity, and much of the evaluating data is based on an old connection bandwidth. Thus 95th percentile readings are likely to be inaccurately low.

** KSU Olathe campus just coming online, and uses layer2 connectivity exclusively. Data not reliable for calculations.



A Vision for a Unified Advanced Regional Network Serving Education, Hospitals, Libraries, and other Community Anchor Institutions

October 3, 2011

I. BACKGROUND

A. Kansas Research and Education Network.

The Kansas Research and Education Network (KanREN) was founded in 1991 to create a statewide backbone network to extend Internet access to all Kansas higher education institutions. The Regents Computer Advisory Committee (RCAC, now known as RITC - the Regents Information Technology Council) began rigorous planning for a statewide education network, involving a team largely drawn from the networking and computing staff at the University of Kansas. Initially, a consortium of 35 Kansas institutions – including the Board of Regents universities, most of the state's community colleges, and several private colleges and universities - established an organization to facilitate the design, assembly, and management of the planned network. This organization became known as KanREN.

KanREN now operates as a registered 501(c) (3) not-for-profit organization serving the Regents Universities, education and research focused organizations, and other Community Anchor Institutions (CAIs, – higher education institutions, K-12, libraries, hospitals, and other entities with a high degree of integration with those entities). It operates on a self-sustaining, cost-recovery model. Members pay exactly what it costs to deliver services. KanREN has consistently led the nation in advanced network-related technology deployments with a focus on stable, scalable, production-ready services and features.

KanREN is governed by its members. Working groups provide an opportunity for member interaction and the introduction of new ideas into the consortium. The Board of Directors evaluates and refines working group recommendations and sets long-term organizational direction, vision, values, and mission. Most importantly, all members have opportunity to vote on major resolutions including rate and fee structure changes. Because all decisions are fully vetted and debated among members, KanREN's services never lose their fiscal responsibility and member focus.

B. Kansas Education Network

Kan-ed is a program created by the Kansas Legislature and administered through the Kansas Board of Regents. The purpose of the program is to expand the collaboration capabilities of Kan-ed's member institutions, specifically K-12 schools, higher education, libraries and hospitals. There are currently 883 entities that meet the statutory criteria for Kan-ed membership.

Through Senate Substitute for House Bill #2035 in 2001 the Kansas Legislature created Kan-ed with the following language: *"The purpose of this act is to provide for a broadband technology-based network to which schools, libraries and hospitals may connect for broadband Internet access and intranet access for distance learning. For that purpose, the state board of regents shall contract in accordance with this act for the creation, operation and maintenance of such network, to be known as the KAN-ED network."*

Governor Graves signed that bill into law on April 20, 2001. It is now codified as Kansas Statutes 75-7223 through 75-7227. The funding of Kan-ed has primarily been from the Kansas Universal Service Fund (KUSF) at a \$10 million level. Kan-ed was funded at \$10 million for three years from two sources. During those three years, \$8 million came from the KUSF and \$2 million came from state of Kansas general funds. For FY12, Kan-ed's funding was reduced to \$6 million from the KUSF.

Kan-ed also receives input from a 15 person Advisory Committee. On that committee three members are selected from four constituencies: K-12 education, higher education, libraries, and hospitals, and three entities representing telecommunication companies. Kan-ed began actual network operations in 2004.

II. CURRENT ENVIRONMENT

Both Kan-ed and KanREN have achieved national recognition for their successes in their focus areas. Both organizations have worked very closely to achieve the needs of all of the community anchors they serve. However, they have historically had different approaches to serving the needs of their membership.

KanREN has built a high-speed network backbone, using physical infrastructure leased from telecommunications providers, which interconnects its members and connects them to the Internet, driven by common research and education needs. Kan-ed has also contracted with telecommunications providers to connect their members to the Internet and then has managed the services (e.g. video, etc) which it procures on behalf of and provides to those connected institutions. Kan-ed has contracted with KanREN to manage the Kan-ed network since the inception of Kan-ed 1.0. KanREN has performed that service in addition to expanding and managing its own backbone. Because of this relationship, the groups have tightly integrated networks, even though they are different physically as well as organizationally.

After listening to legislative and industry input and after careful consideration and analysis, the leadership of both KanREN and Kan-ed now believe that it is possible to capitalize on the strengths of each organization, increase opportunities for collaboration, and operate a single Advanced Regional Network (ARN) to serve the needs of all Community Anchor Institutions (CAIs as defined by United States Unified Community Anchor Network National Project) in Kansas that will benefit from such services.

III. VISION FOR A SINGLE STATEWIDE NETWORK

Kan-ed and KanREN believe that it is possible to serve the CAI community with a single Advanced Regional Network. The network will focus on the needs of these institutions and the collaborative nature that exists between them. As such, it would not attempt to either broaden scope or directly compete with commercial service.

It is envisioned that KanREN will continue as an organization and the KanREN backbone network will form the core of the Regional Network. KanREN will continue its long tradition of collaboration with commercial telecommunications providers to extend the reach of its network access layer in order to connect more CAIs.

Kan-ed will also continue to exist but its structure and services will change. For many small, rural institutions (e.g, rural school districts), the real need focuses more on assistance in funding and assessment of their needs rather than a direct connection to the regional network. The continued use of federal funds provided by the E-rate program is expected.

Both Kan-ed and KanREN agree that many institutions may be more efficiently served by obtaining service directly from a local telecommunications provider. In other cases, integration and collaboration with other CAI's will mean a direct connection to the regional network will best achieve their goals. A sliding scale based upon need will be developed to assist with connectivity costs.

Finally, the benefit to all citizens of Kansas of having fast, reliable access to Kansas' educational institutions, hospitals, and libraries is without question. KanREN and Kan-ed believe that KanREN should work with Kansas telecommunications providers to interconnect their networks (and therefore all of their customers) to the regional network so that traffic between Kansas citizens and Community Anchor Institutions need not travel via the commercial Internet. By working with telecommunications providers, this groundbreaking concept will keep more "Internet" traffic in Kansas, improve performance for Kansans, and reduce out-of-state spending for community institutions, local telecommunications providers, and the State of Kansas. This is the same concept that forms the very core of the Internet itself.

IV. ADVANTAGES OF RESTRUCTURE

KanREN and Kan-ed partner with many public and private telecommunication entities. Under the proposed vision for restructure, institutions currently served by Kan-ed and KanREN will benefit from being even more tightly integrated. In addition, each institution

will be better served by having its needs addressed in a manner that best fits its goals. Small institutions will connect to the Internet through local telecommunications providers. Larger institutions (or those with special needs) who need the services of a regional network will be able to connect to KanREN's cutting-edge backbone. All entities will continue to have access to Kan-ed's video collaboration infrastructure, which is serviced by KanREN today, and it will be physically moved into the KanREN backbone.

Funding from the KUSF will still be needed to help institutions afford connectivity. Kan-ed will be the administrator for distribution of the KUSF funds while KanREN will provide the needs assessment and implementation support for the institutions. Funding will be required to support both "start-up" costs for connection to either a local provider or the KanREN backbone as well as on-going connectivity and maintenance fees. Unfortunately, the concept of completely free connectivity cannot be realized. Together Kan-ed and KanREN will have even greater buying power, leveraging open-market competition within the telecommunications industry.

V. PRINCIPLES OF OPERATION

Both Kan-ed and KanREN have agreed on a core set of principles that will be used to guide the process. The following principles will continue to support institutions to the maximum extent possible by the state, reward provider initiatives that reduce ongoing future costs, and pave the way for economical upgrades to higher speeds as needed:

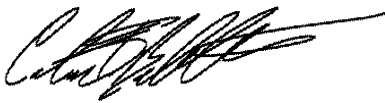
- Funding assistance for rural, underserved, and/or very small eligible entities Internet needs.
- Funding support for the Advanced Regional Network general operations and cost offset for connected institutions.
- Maintaining the current video infrastructure, growing and adapting with technology evolution.
- Providing assistance for institutions not connecting to the ARN in making service decisions regarding Internet services.
- Working with Kansas telecommunications providers to provide last and/or middle mile connections between the regional network and anchor institutions.
- Providing settlement-free connections between Kansas providers and the Advanced Regional Network to improve access to community institutions for all Kansans.
- Funding Regional Network connection projects that use high bandwidth fiber-based solutions, reducing both recurring and upgrade costs.
- Making ARN connections only through the use of optical transport (fiber) technologies that will scale to very-high speed connectivity (e.g., no T1 circuits).

VI. TIMELINE FOR IMPLEMENTATION

KanREN and Kan-ed are committed to taking on this challenge and finding the most effective path forward that will provide appropriate service to eligible entities in a cost efficient fashion. However, significant challenges and numerous details have yet to be worked out before moving forward with this vision. Planning and implementation of such a vision is expected to be a two-year process.

VII. CONCLUSION

KanREN and Kan-ed both believe that this new vision and the proposed changes will provide more equitable service and lower connectivity costs for the anchor institutions of Kansas. At the same time, research capabilities of the educational institutions in Kansas (both K-12 and higher ed) will ultimately be improved, as will videoconferencing abilities of the hospitals (telehealth), libraries, and educational institutions (distance learning). Kansas will be able to create an environment with an identifiable focus on investments in technologies that provide for long-term needs of public institutions. The commercial telecommunications industry will see increased business and opportunities. Together our organizations will work to carry out this Vision in a fiscally responsible manner to ensure the prudent use of taxpayer dollars.



Cortney T. Buffington
President & CEO
KanREN, Inc.



Jerry Huff
Kan-ed Director
Kansas Board of Regents

2010-11 Kan-ed Empowered Desktop Value

Notes:	List price		# Students	#Schools	
	AvgPrice per Student	Avg Price Per school	511,258	1,518	Extended Value for Kansas
Top Empowered Desktop Applications					
1 LS Test Builder Elementary Schools	\$ -	\$ 1,495.00		922	\$ 1,378,390
2 LS Test Builder Middle/Junior High Schools		\$ 2,695.00		214	\$ 576,730
3 LS Test Builder High Schools		\$ 3,695.00		382	\$ 1,411,490
4 LS Education Backpack	\$ 1.00				\$ 511,258
5 NetTrekker		\$ 1,725.00			\$ 2,618,550
6 Kaned Content System					\$ 25,000
7 Kan-ed List Serve					\$ 15,000
8 Epals integration support		\$ 500.00			\$ 759,000
Kan-ed Portal with Single Signon and Launch Management	\$ 1.00				\$ 511,258
				Total Extended Price	\$ 7,806,676
				Price provide By Kaned Empowered Portal	\$ 974,025
				Difference	\$ 6,832,651

Kan-ed has an unlimited state wide license for all students and schools
Student and School count based upon KBOE data

Avg price per school	\$ 642
Avg SAVINGS per School	\$ 4,501
Avg Price per Student	\$ 1.91
Avg Price Savings Per Student	\$ 13.36

Notes

1	LS Test Builder is the online school tool for Teacher formative and classroom assessment. This is the top used application, Included are the WestEd questions provided by KSDE for teacher use as well as additional questions aligned to the Kansas Station Curriculum Standards and the Common Core Standards. Elementary School List price is \$1495/ per school per year.
2	LS Test Builder is the online school tool for Teacher formative and classroom assessment. Included are the WestEd questions provided by KSDE for teacher use as well as additional questions aligned to the Kansas Station Curriculum Standards and the Common Core Standards. Middle School List price is \$2695/ per school per year.
3	LS Test Builder is the online school tool for Teacher formative and classroom assessment. Included are the WestEd questions provided by KSDE for teacher use as well as additional questions aligned to the Kansas Station Curriculum Standards and the Common Core Standards. High School List price is \$3695/ per school per year.
4	LS Education Backpack is the second most used application and provides online portfolio file storage for student created and teacher assignment files. List price for basic storage is \$1 per student per year.
5	NetTrekker is the nations #1 school safe search engine used by over 22,000 schools nationwide. The list price is \$1,725 per school per year.
6	Kan-ed Website is the hosting, maintenance and development and content mangement system of the "Kan-ed" website
7	Kan-ed List Serve - host, manage and license of the Kan-ed List serve software
8	Epals Integration support - Epals is a free product, this is the service fee for the file synchronization for users and phone support
9	Kan-ed Portal with Single Sign-on is the core proprietary portal software that is used to manage the user rosters, application management and access, application launching, and proprietary single signon software to allow user access to multiple applications through a single portal. Used for: All Applications listed above, Library Databases, Tutor (Homework Help), Various District Portal apps (United Streaming, typing pals, Atomic Learning...), 4kids, 4Teachers, Clip art, KERC, Kansas Career Pipeline, Territorial Kansas, Epals, Financial Foundations for Kansas Kids, etc plus Phone and email support, etc

2011-2012 Kan-ed Empowered Desktop Value

Notes:		List price		# Students	#Schools	
	Top Empowered Desktop Applications	AvgPrice per Student	Avg Price Per school	511,258	1,518	Extended Value for Kansas
1	LS Test Builder Elementary Schools	\$ -	\$ 1,495.00		922	\$ 1,378,390
2	LS Test Builder Middle/Junior High Schools		\$ 2,695.00		214	\$ 576,730
3	LS Test Builder High Schools		\$ 3,695.00		382	\$ 1,411,490
4	LS Education Backpack	\$ 1.00				\$ 511,258
5	NetTrekker		\$ 1,725.00			\$ -
6	Kaned Content System					\$ 25,000
7	Kan-ed List Serve					\$ 15,000
8	Epals integration support		\$ 500.00			\$ -
9	Kan-ed Portal with Single Signon and Launch Management	\$ 1.00				\$ 511,258
						Total Extended Price \$ 4,429,126
						Price provide By Kaned Empowered Portal \$ 551,820
						Difference \$ 3,877,306

Kan-ed has an unlimited state wide license for all students and schools.
Student and School count based upon KBOE data

Avg price per school	\$ 364
Avg SAVINGS per School	\$ 2,554
Avg Price per Student	\$ 1.08
Avg Price Savings Per Student	\$ 7.58

Notes

1	LS Test Builder is the online school tool for Teacher formative and classroom assessment. Included are the WestEd questions provided by KSDE for teacher use as well as additional questions aligned to the Kansas State Curriculum Standards and the Common Core Standards. Elementary School List price is \$1495/ per school per year.
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EMResource

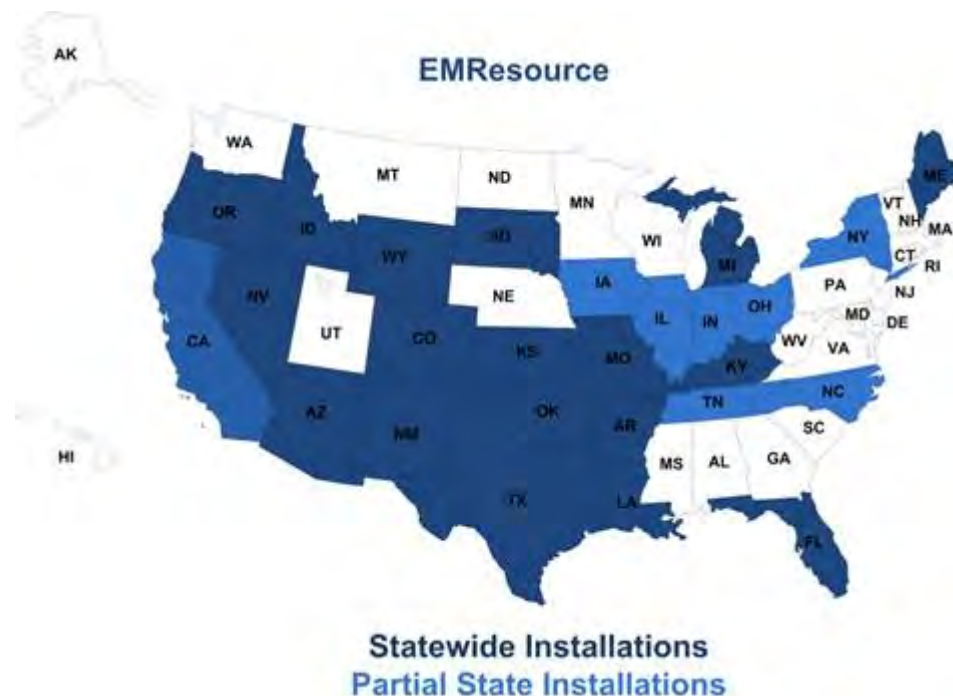
EMResource Project Cost	FY2011	\$189,845.88
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EMResource Project Cost FY2012 budgeted	\$90,000
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EMResource is only licensed on a state wide basis

Background: In the later part of 2004, The Kansas Hospital Education and Research Foundation was awarded monies from Kan-ed to support a state-wide license of EMResource. EMResource is a Web-based program providing real-time information on hospital emergency department status, hospital patient capacity, availability of staffed beds and available specialized treatment capabilities.

Kansas Landscape: Currently all hospitals in Kansas are updating their emergency department capacity on a daily basis on either the Kansas or Kansas City Metro Areas EMResource screen. Of those hospitals, twenty-three hospitals provide daily status updates on their psychiatric bed availability. In addition, we have six regional/statewide dispatch centers/communication centers that update their status on a daily basis and provide back up to the hospitals in Kansas in the event of an emergency. Moreover, six flight transportation services are updating their flight standby status on the EMResource screen as well. Kansas is a rural state with 83 critical access hospitals which underscores the need for coordination and communication of important health care information. EMResource has been used in Kansas to address trauma care, emergency preparedness and state-wide communication. The figure below shows the national penetration of EMResource by state.



Key Benefits of EMResource

EMResource is a robust browser-based system that:

- Addresses mass casualty incidents, including large scale disasters, and provides response via emergency department triage capacity reporting
- Delivers ASPR grant guidance compliance for statewide HAvBED polls, including bed availability and situational assessment data interfaces with HHS
- Provides day-to-day ambulance diversion and hospital resource bed availability reporting, ensuring appropriate patient transport decisions
- Offers hospital evacuation and repatriation status reporting, including level-of-operations, critical asset needs and infrastructure integrity assessments
- Performs text and email urgent event alerting, health alert broadcasting, missing persons and BOLO broadcasts
- Incorporates HPP situational awareness for flu response, such as syndromic volume surveillance and case reporting activities
- Provides GIS interactive mapping, including GPS air medical services interface
- Delivers multiple systems interoperability
- Performs equipment, supplies and blood products on-hand queries
- Supports and strengthens mutual aid relationships across regional and state boundaries
- Provides extensive reporting, including detailed summary and trending data aggregation, shelters and shelter-in-place reporting and management, and mental health and dialysis services availability reporting
- Performs EOC activation status notification

Statewide Communication: One of the main advantages of EMResource is the ability to send out information to hospitals statewide. Hospitals have sent various alerts to other hospitals in the region or the state regarding “Professional Patients” or persons posing as someone else in order to gain access to certain types of medications. In addition, EMResource has sent out several Amber Alerts or information about child or infant abductions at hospitals. Moreover, during 2010 more than 64 messages were sent over EMSystems related to local, state, and federal disasters in Kansas which every affected every county.

“The way we have EMResource set up, the system is up and running at all times. It’s located on a PC right at our nurses’ station. We also are able to pull it up anywhere in the hospital on any PC in the facility at any time, as long as they have the user name and password. It’s also capable of connecting up at the ER desk as well.” ~Mike Stallbaumer, Director of Information Technology, Nemaha Valley Community Hospital, North East Region

Federal Requirements: Hospitals that participate in the federal Hospital Preparedness Program must have the ability to report vital information during an emergency or disaster within sixty minutes to the state or federal emergency operations centers. This level of reporting has increased with H1N1 influenza activity by the United States Department of Health and Human Services (HHS). EMResource serves as the platform to gather important information from hospitals regarding a HAvBED (Hospital Available Bed) request. Kansas hospitals exceeded the minimum requirement of fifty percent of hospitals responding to a HavBed request in sixty minutes. HAvBED data elements include:

- **Adult Intensive Care (ICU):** Licensed, available, vacant beds that can support critically ill/injured patients, including ventilator support.
- **Medical/Surgical:** Licensed, available, vacant medical, surgical beds also thought of as “Ward” beds.
- **Burn:** Licensed, available, vacant beds thought of as Burn ICU beds, either approved by the American Burn Association or self-designated. (These beds are NOT to be included in other ICU bed counts.)
- **Pediatric ICU:** Licensed, available, vacant beds that can support critically ill/injured patients 17 years and younger, including ventilator support.
- **Pediatrics:** Licensed, available, vacant medical, surgical beds for patients 17 years and younger.
- **Psychiatric:** Licensed, available, vacant beds on a closed/locked psychiatric unit or ward.
- **Emergency Department:** Licensed, available, vacant emergency department beds.
- **Negative Pressure/Isolation:** - Available, vacant beds provided with negative airflow, providing respiratory isolation. NOTE: This value may represent available beds included in the counts of other types.
- **Operating Rooms:** – An operating room that is equipped and staffed and could be made available for patient care in a short period of time.
- **Decon:** – Please report whether your decontamination facility is exceeding capacity, at full capacity, inactive (unable to operate) or open (available to operate).
- **ED status:** – Same as current categories on KS EMResource Screen
- **Vents:** – The number of mechanical ventilators that are present in the institution but are currently not in use and could be supported by currently available staff.

Intangible/Tangible Cost Savings: One of the main goals in the initial planning for the implementation of EMResource was to integrate closely with hospital operations. We are trying to ensure that in an emergency, hospitals are ready to respond timely. Here are a few intangible benefits/savings EMResource has brought to Kansas.

- Increased statewide collaboration among hospital providers and other entities/organizations: Emergency Medical Services, state agencies- Kansas Department of Health and Environment and Kansas Department of Emergency Management, and 911Dispatch/Communication Centers
- Improved efficiency related to medical/trauma care:
 - allowed hospitals to post important information related to available services/constraints or current capacity;

- decreased staff time related to unnecessary phone calls related to patient transfers due to access to real time information of hospitals;
- access to viable hospital information with other border EMResource States (i.e. Missouri, New Mexico, Arkansas, Oklahoma and Colorado); and
- allowed access to important psychiatric bed availability among Kansas hospitals to improve staffing and unnecessary emergency room visits
- Increased disaster/emergency readiness in the state
 - Allowed hospitals a mechanism to submit bed capacity and available medical equipment in a timely manner to state and federal partners during an emergency.
- Statewide communications helps save lives
 - Amber Alerts and Professional Patient notifications allow hospital staff to become more proactive in a situation and help prevent another dilemma.

October 26, 2011

To: Jerry Huff, Director, Kan-ed
From: Marc Galbraith, Deputy Director, State Library of Kansas
Re: Statewide Information Databases

This data is being provided on behalf of the State Library of Kansas. The State Library will not be available for the October 27, 2011 meeting of the Kan-ed Study Committee. We will however be happy to address questions Committee members might have regarding the databases and the information provided below.

I'm providing two pieces of data that I believe will help illustrate both the effectiveness and efficiency of the databases and the statewide database license.

Cost per unit (cost per search) across the statewide databases.

Total statewide cost of the databases for FY2011..... \$1,474,467

Total database usage (searches) during FY2011..... 9,477,418

Cost per unit (per search) 16 cents

Cost avoidance or what it would cost individual libraries to license the database content on their own, if there were no statewide license.

Database cost for FY2011..... \$ 835,749*

Cost for each library to license the same content..... \$24,134,697

*Cost avoidance data was not available for all vendors providing content to the statewide database package. \$835,749 was the cost of a subset of the total content package and is the sum paid to one vendor providing the largest share of content during FY2011. \$24,134,697 is what Kansas libraries would have paid in the aggregate if each library had licensed the same content from that same vendor.

While it is recognized that very few Kansas libraries could afford to subscribe to all of content in the statewide database package, hopefully the cost avoidance figures illustrate the efficiency of statewide library licensing.

The Value of LiveTutor Service Formerly Offered Through Kan-ed

- For Fiscal Year 2011, Kan-ed paid \$309,000 for the LiveTutor service.
- Below are some calculations to illustrate the value of the LiveTutor service.
 - These figures are based on usage data recorded by Tutor.com
 - Kan-ed LiveTutor provided 38,213 tutoring sessions in FY 2011
 - Kan-ed LiveTutor provided 13,500 tutoring hours in FY 2011
 - The calculations are based on the recommendation of Dale Dennis, Deputy Commissioner, Kansas Department of Education, that the average cost of a tutor is \$30 to \$35 per hour. This is based upon a beginning teacher's salary.
- Kan-ed received their service at \$8.09/session ($\$309,000 / 38,213 \text{ sessions} = \$8.09/\text{session}$).
 - The average session length in FY 2011 was 21.2 minutes.
- Kan-ed received their service at \$22.89/hour ($\$309,000 / 13,500 \text{ hours} = \$22.89/\text{hour}$), which is less than the average cost of a tutor according to Dale Dennis (at \$30 to \$35/hour).
- If students had to pay for alternative tutoring services at the average cost of \$30 to \$35 per hour, they would have had to pay costs between \$405,000 (at the \$30/hour rate) and \$472,500 (at the \$35/hour rate). ($13,500 \text{ hours} \times \$30/\text{hour} = \$405,000$; $13,500 \text{ hours} \times \$35/\text{hour} = \$472,500$)
- Therefore, Kan-ed purchasing the statewide service saved between \$96,000 and \$163,500 in FY 2011. ($\$405,000 - \$309,000 = \$96,000$; $\$472,500 - \$309,000 = \$163,500$)

The above calculations do not take into account the additional value associated with multiple certified tutors being maintained on staff at Tutor.com and on-call to students throughout the afternoon and evenings, without appointments required. This allows many students across the state to be served reliably and simultaneously on LiveTutor for a variety of subjects.

Online tutoring also removes other costs associated with traditional in-person tutoring such as costs for transportation to the tutoring location and parents' time investment for such transportation.

The figures also only include values based on the tutoring portion of the service, so they do not take into consideration the extra cost associated with the 6,328 SkillCenter sessions accessed in Fiscal Year 2011, which is a portion of the LiveTutor service that is available around the clock (24/7).

Comparisons to big-chain tutoring services:

- These calculations are based on the fact that the average cost for big-chain tutoring is \$45 to \$60 per hour (as reported in SmartMoney Magazine, “Behind America’s Tutor Boom,” October 20, 2011: <http://www.smartmoney.com/spend/family-money/behind-americas-tutor-boom-1318016970246/>)
- Kan-ed received their service at \$22.89/hour ($\$309,000 / 13,500 \text{ hours} = \$22.89/\text{hour}$), which is half of the average rate of big-chain tutoring services (at \$45-60/hour).
- If students had to pay for alternative tutoring services at the average cost of \$45 to \$60 per hour, they would have had to pay costs between \$607,500 (at the \$45/hour rate) and \$810,000 (at the \$60/hour rate). ($13,500 \text{ hours} \times \$45/\text{hour} = \$607,500$; $13,500 \text{ hours} \times \$60/\text{hour} = \$810,000$)
- Therefore, Kan-ed purchasing the statewide service saved between \$298,500 and \$501,000 in FY 2011. ($\$607,500 - \$309,000 = \$298,500$; $\$810,000 - \$309,000 = \$501,000$)
- The national average for big-chain tutoring services was selected for comparison because these are a common alternative to LiveTutor. Further, these big-chain tutoring services offer a conservative estimate of tutoring costs, compared to other tutoring services that may cost up to hundreds of dollars per hour.



Kan-Ed Live Tutor

Usage Report

Tutor.com Learning Suite

July 1, 2010 – June 30, 2011

Prepared By:

Sandi White

General Manager of Institutional Programs

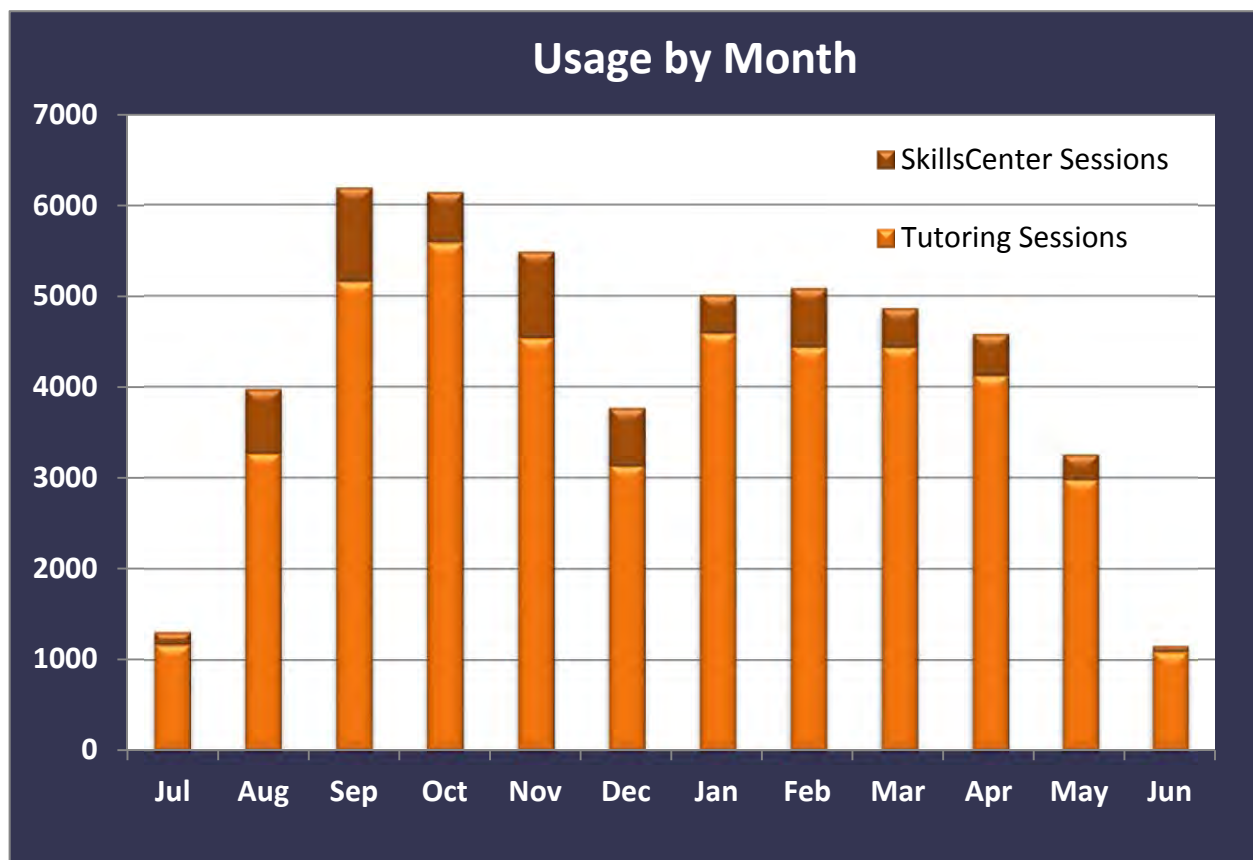
Tutor.com



Total Usage

Kan-Ed Live Tutor has provided 13,503 hours of live, online tutoring to Kansas residents from 7/1/2010-6/30/2011. The average length of the tutoring sessions was 20.95 minutes.

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
<i>Tutoring</i>	1,026	2,566	4,134	5,036	3,591	2,498	4,172	3,787	4,004	3,672	2,705	1,022	38,213
<i>SkillsCenter</i>	142	711	1,030	554	951	642	423	651	434	459	284	67	6,348
Total	1,168	3,277	5,164	5,590	4,542	3,140	4,595	4,441	4,438	4,131	2,989	1,089	44,561



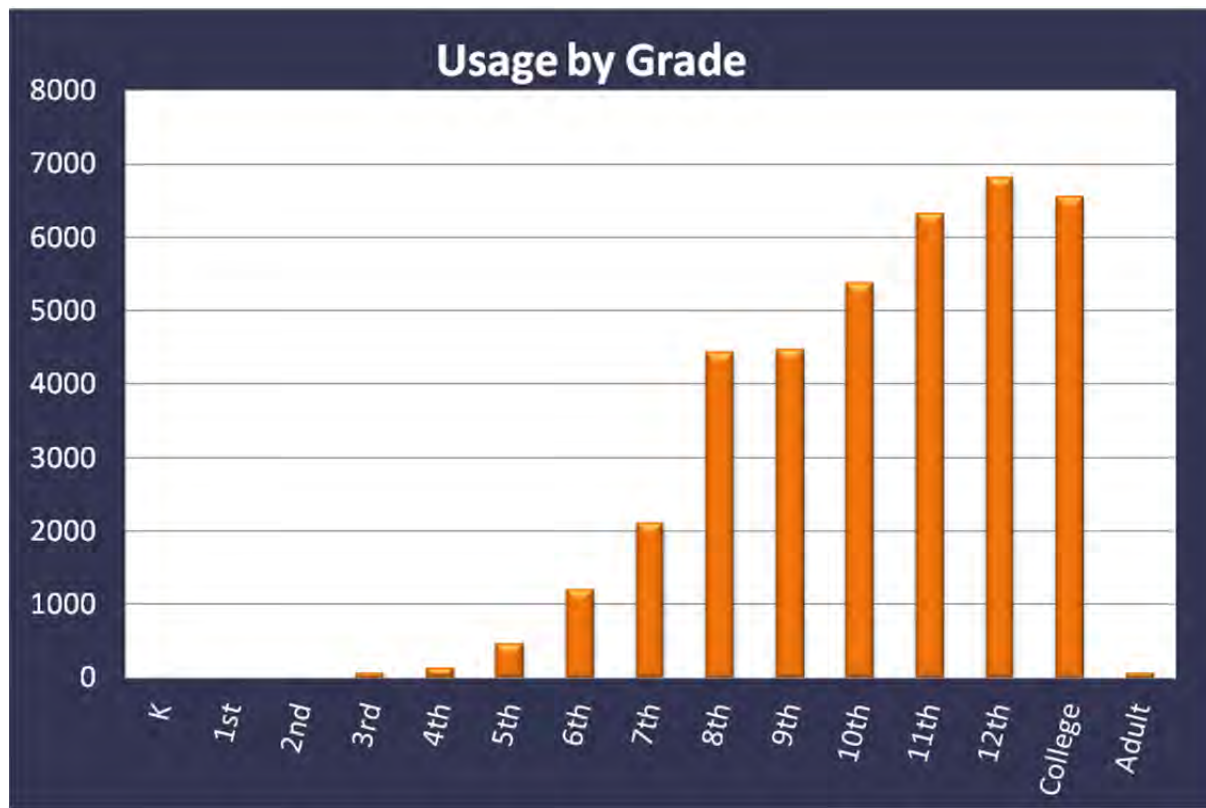


Usage by Grade Level – Tutoring

Sixty-percent (60%) of tutoring sessions are high school level sessions. College students taking introductory or remedial level courses conduct 17% of tutoring sessions.

K	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th
45	20	37	83	143	480	1,207	2,126

8 th	9 th	10 th	11 th	12 th	College	Adult
4,435	4,479	5,385	6,332	6,817	6,550	74

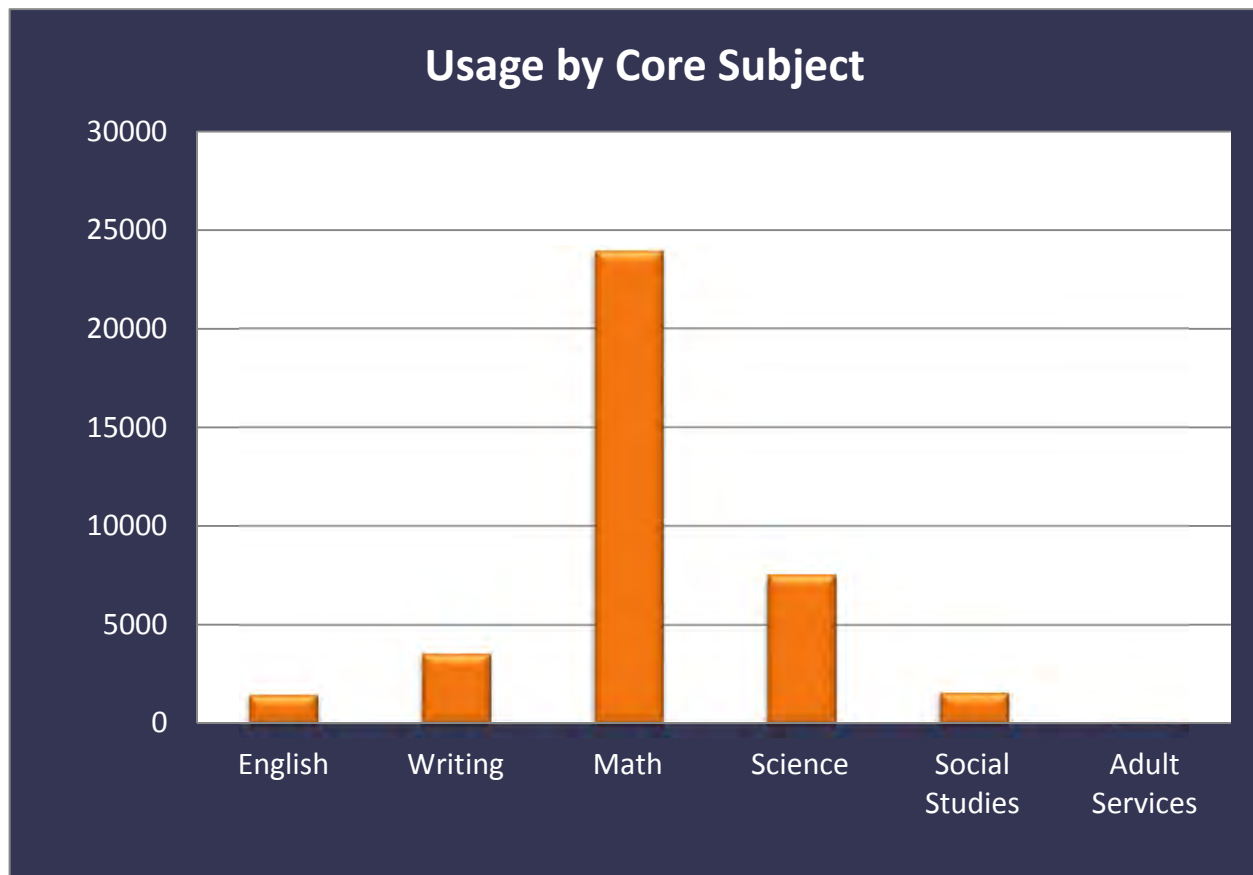




Usage by Subject – Tutoring

Sixty-three percent of tutoring sessions are math. Science is the second most frequently requested core subject, comprising 20% of all tutoring sessions.

English	Writing	Math	Science	Social Studies	Career Help
1,483	3,560	23,945	7,571	1,596	58



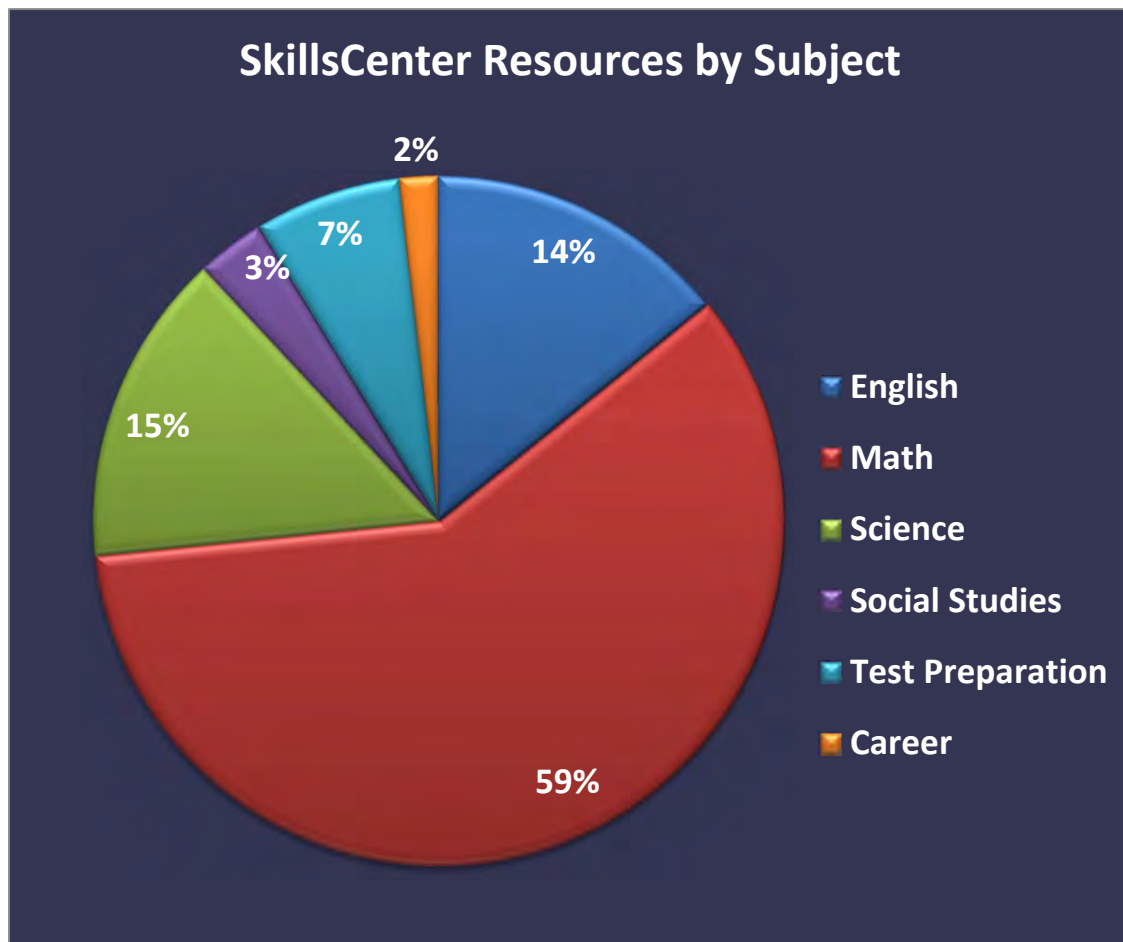


Usage by Subject – SkillsCenter

As with tutoring, math is the most frequently used core subject on the SkillsCenter Resource Library. Fifty-eight percent (58%) of all resources accessed on the SkillsCenter are math.

English	Math	Science	Social Studies	Test Prep
1,583	6,612	1,642	356	770

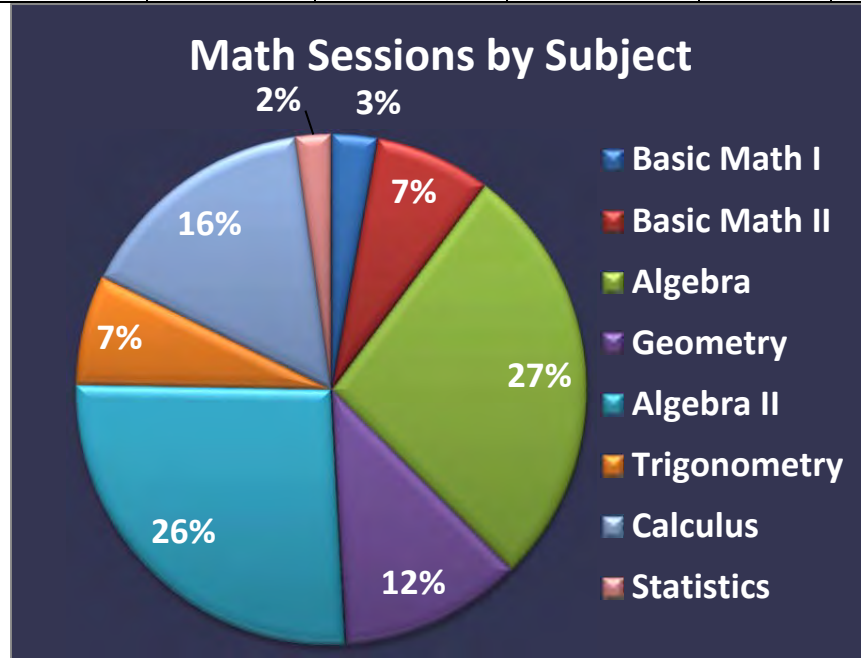
Career Help	GED Preparation	Other Adult Resources
206	86	70





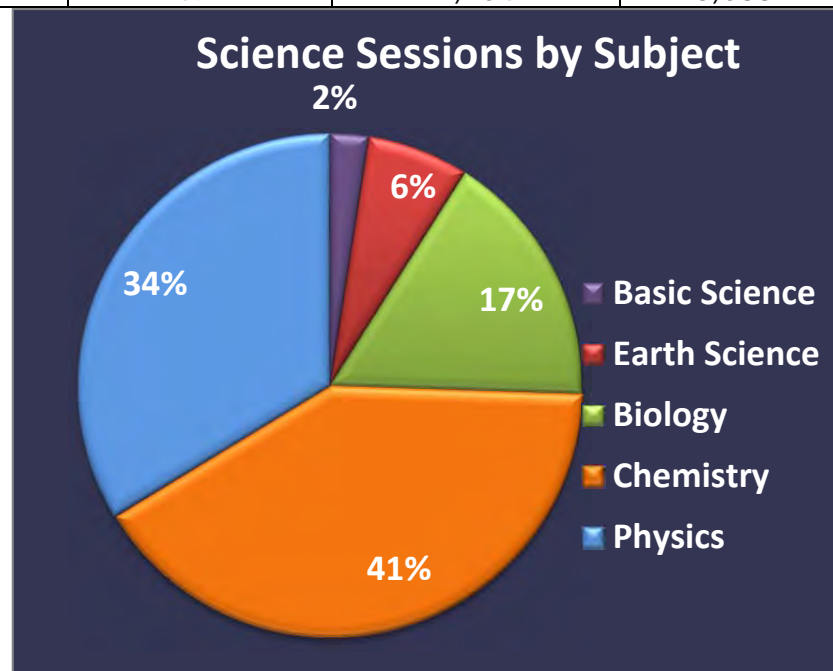
Math Usage

Basic Math I	Basic Math II	Algebra	Geometry	Algebra II	Trig	Calculus	Statistics
695	1,760	6,527	2,776	6,270	1,672	3,698	547



Science Usage

Basic Science	Earth Science	Biology	Chemistry	Physics
188	491	1,254	3,088	2,550





Student feedback left for Kan-Ed Live Tutor

Are you glad your organization offers this service?	98%
Would you recommend this service to a friend?	97%
Is Live Homework Help helping you complete your homework assignments?	96%
Is Live Homework Help helping you improve your grades?	95%
Is Live Homework Help helping you be more confident about your school work?	95%

Grade	Post-Session Student Comment
K	i liked it a lot. my mommy says its really great for my math because im not good at that but now i am because of this so thank you.
1st	I love it!!!! She was a great teacher!!!!Bye!!!!!!!!!!
2nd	awsome
3rd	As a gifted kid it's hard to get this kind of help. My friends should really use this. Thanks!
3rd	I'm a parent learning to use this application. What a great tool!!
4th	glad Mom found it.
4th	I am a school teacher and am exploring this site for my students and parents. It was a real eye opener! I know it has been available for quite some time but I didn't realize what potential it has! My sister calls me frequently about her son's homework and now I can tell her to go to this site! :)
4th	My tutor really helped me with all that I needed. And she made it all easy to understand for me. THANK YOU!!!!
4th	Thanks you guys for working hard on this to keep our grades up! Rock on! -Cydni
4th	This is a great service and i definently want to reccomend this service to my friends. i am extremely glad HomeworkKansas offers this fabulous service!! i have used this service several times and i enjoy it. it helps me answer questions, it completes my homework assignments, it improves my grades. thankyou!!!
5th	i love this service it is great it hs improved my grades ALOT!!!!!! thank you so much:]!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
5th	i really apratioate it and i think my school has a blast with it to and enprove grades alot.im getting to understand things more step by step and becmig a lot mor confident
5th	I really like kan-ed tutor it helped me a lot in school on one of my papers i got an A because of you guys THANKS A LOT!!
5th	I really like Tutor.com. My tutors are always nice and helpful. I have been noticing my grades going higher in Math because of the tutors. Thanks Tutor.com!
5th	My mom was happy that I was able to use the tutor and I feel better doing my division.
5th	This is great.not only are my grades better but the tutors are great
6th	:-D Happy! For this grades getting better!
6th	He was awesome! i love this site it has helped my bring my grades up!
6th	I love kan-ed!!!!!!



- 6th** i thik this webiste is great my mom show it to me and i really like it
- 6th** My tutor was great! She was very nice and supportive! I hope I have her next time! Thanks, Kan-Ed, for making this site! :-)
- 6th** thank you so much i am so great ful that this program is here if it wasnt i would not be makeing good grades thanks to all the tutors that have helped me
- 6th** The tutor was really good, and now if my parents are not home, I know that I can have help on my homework anytime! And this would also be fun to show my parents if they have different opinions on a problem-it happens alot!
- 7th** GREAT TUTORS Kan-Ed Live Tutor
- 7th** i have used this program only once and i will use it more often i have a feeling with this program i can raise my grades faster than i thought
- 7th** I really love this site! When I am in the classroom we are allowed to have 15 minutes to start on our homework... But when I get home my parents have no idea what we are doing, so I'm always searching the web for tips. It's a waste of time! But, since my school advertised this on our school website my grades have been improving!! i'm so glad I have this available! Also,
- 7th** I think Kan-ed is a GREAT program and helps me a ton. The tutors are nice and help me with my questions and make sure I get it! I am very glad that this is a program offered!!Thanks!!
- 7th** i thought this was really great and it helped me a lot thanks kan-ed for offering this program!
- 7th** If it werent for this website my grades would be down and i wouldn't understand things as much
- 7th** I'm taking tests and I have questions. Google helps sometimes and my parents do too. But when they don't know I know I can count on Homeworkkansas. I'm just so happy you have this availible! It's always nice to get things when you're actually almost talking with specialized tutors. Thank you!
- 7th** My parents are hardly every home and my brother and sister don't help me. If we didn't have this my grades would be bad. They help me understand things more!!!
THanx U !!!!!!!
- 7th** Thank you so much, this is a great service to provide for kids. Sometimes, when my parents can't help me with the homework, I can ask someone who really knows what they are talking about! Thanks SO much.
- 7th** The Best Website I have EVER used! Thanks to all the Smart People out there I wouldn't have the grades i have now! Thanks!
- 8th** Amando F was so very good she helped though everything I needed thankyou so Dearly much i love this website and it really helps me with my grades thankyou
- 8th** homework kansas really helps me understand what im doing and is helping me get better grades and finish my homework. Thank You!!!!!!!!!!!!!!
- 8th** I am very glad I decided to use Kan-Ed Live Tutor it helped me do my homework and understand it.
- 8th** I just wanted to thank all of the tutors here because they help me with my homework and other work a lot and they helped me improve my grades.
- 8th** I love Kan-ed! Thanks for what you do!



- 8th** i love the tutors they explain things better and we can take are time thank you for tutor.com it helps me to make good grades thank you
- 8th** i usually have my homework assignments done, but it helps improve my grades, and i understand everything so well now
- 8th** the tutors are great and very helpful im so glad that they offer this service and it helps greatly when needed help isnt always avialable and this also keeps my grades up when i dont understand a certain subject
- 8th** Tutor.com makes me feel very confident in my answers for homework! It has improved my grades too. I'm impressed!
- 9th** I am so glad I can finally go somewhere and learn things from a tutor. My mom was going to have to pay someone to tutor me but my teacher informed me of this site and now I use it all the time. Plus my mom doesnt have to pay someone to tutor me. Thanks so much for helping me everyone!
- 9th** i just wanted you guys to know that since i started using homework kansas my math grade shot up two letter grades (i have an A now!) i just understand stuff a lot better and i'm glad too cuz now i have all A's and one C+ (social studies:(not doin so well on quizzes) but ya i know it takes a while to wait but it's still really nice and it really helps me a lot. but ya i want to be a vet (decided two days ago!) and you have to have really good grades cuz getting into vet school is so competitive but now i have so much more confidence so thanks a lot for giving it to me! i love you homework kansas!
- 9th** i like that i can get help and no one knows that i do so that i feel better about that. doing this helped my math grade last year go from a c to a b. my parents were so proud. and i dont have to wait that long either. im so glad that people provide this for all classes and grades i know i will countie to use this
- 9th** I was so exited to get help on my homework. With my mom being in collage and dad at work, I couldnt get help often. With this I am able to get my work done. Thanks!
- 9th** i wouldnt be able to be a 4.0 student if it wasn't for Kan-Ed Live Tutor!! thank you so much for providing this service!
- 9th** I wrote out my work on the white board provided and the given tutor Greg P. helped amazingly. He sat quietly watching and he caught what I did wrong and told me and I reworked the problem and got the correct answer quickly. I'll be sure to use this tutoring program more often! Thanks.
- 9th** I'm so glad that i learned about this website. It has helped me alot and i understand more. I always now i can get help from some who knows what they are talking about when i'm at home and don't have access to a teacher. Since i've been using this website my grades have improved very much and my parents and teachers notice it too.
- 9th** I've never had a 4.0 GPA before, because of math. But because of this tutoring service, my grades are great! I'm so happy y'all have this!!!!
- 9th** THANK UUUU KAN-ED
- 9th** This helped me improve my grades alot. I wish this to be around for my kids and their kids as well! Everyone should try this. And Im only in highschool. I want this to be around forever.
- 9th** With so many places on the web to help you with your homework nothing has helped me more than these classrooms here. I have been nothing but happy with all my tutors they all



have made a major impact on my math grades and in many other classes!!!

10th i actually do my homework since i found this. before i found this if i didnt know how to do a problem i would skip it and just get bad grades but now it helps me finish it.

10th I have recommended this service because i think is great! Thank you so much for taking the time to try to improve our grades and understanding at school! This is a really good help! Thanks again.

10th I like this tutor site on Kan-Ed. It is helping me alot with my classes.

10th I LOVE this service! I do believe the whiteboard could maybe be a bit bigger! But other than that, it is excellent! The tutors I have had so far are awesome and helpful! This service is helping me improve my grades in algebra!

10th i really like the upgrades, etc that have been made to homework kansas! it makes it even easier to get help, and the help is always good and very much appreciated! thanks :)

10th I used to use this, then i stoppped.. and my grades dropped because my teacher didnt explain it too me well! but this was great and my greats should go up soon!!!!!!

10th I usually struggle in Chemistry a lot but since I started practicing with my tutor it has definitely helped me improve my grades and my confidence in the class. Thank you soo much! Just the other day I got the highest grade on the chapter test out of all my class! Thanks again for offering this service to students like me who struggle with certain classes but still want to keep trying! (:

10th My tutor did a very good job, and instead of him giving me the answer straight out, he worked it out with me. Even though he knew nothing about the story, i told him parts, which led to an answer. This guy is awesome! Thanks Kan-Ed live tutors!

10th My tutor was fantastic! (: He gave me websites and performed examples..He also answered all of my questions fully and politely. I will definitely be using Kan-Ed again!!!!

11th All school year I haven' t understood a single part of physics, i depended on my friends to help me, and most of the time they were busy and couldnt. I wish I had been using Tutor.com from the begininng of the school year! I am so happy I could actually work on this assignment and get it done for once!

11th Excellent service! Helping me get better grades in geometry! :D

11th I am very glad I recieved help with my homework. I feel more confident in my grades and I think this will be a wonderful school year. :)

11th i get great grades already, i just need some help on some extra weird problems that our teacher gives us. because no offence to her, but she doesnt know how to teach. Im not meaning to sound rude but it is what all her students say. thanks Tutor.com

11th I'm really glad that kansas offers this, if they didn't i don't think i would have as good of grades as i do now .

11th My name is Dustin. I am way backed up because I didn't understand my geometry, and since I'm homeschooled, my mom and dad aren't much help. They don't understand it either, my principal at eSchool told me about this site, and I've been using it ever since, when I can't get to eschool for tutoring in person. Now, my grades are better, I understand things a lot easier, and I'm able to get on at home at night when no one else can help me. This has been a huge help to me in completing my work, and trying to get caught up. I still have a long way to go, but since I know this is here I think I can do it now. Thanks.



11th	My tutor on this rocked!!! She was patient and a lot of help!! Thanks for having this service..It's helping me get better grades!!
11th	My tutor was very awesome! Not only did she show me the steps but explained them very carefully so I could finish the rest of my assignment with no help at all! Thank you Kan-Ed Live Tutor!
12th	first of all... on #3 i wanted to answer "YES!!!!" because my teacher didn't help me at all on this and my tutor did an excellent job explaining it to me. I LOVE this program, if it wasn't for this, I'd pretty much be failing Algebra II. I'm one of those students who learn from example and this was awesome, now i know what i'm doing. Thanks Joshua G and Tutor.com! -A very satisfied and previously confused Senior.
12th	Great tutor, I love this program, it helps me keep my grades up. Sometime I learn better using this then i do in class. THANKS....
12th	i like using kan-ed it helps me alot when ever i get stuck on a problem and they break it down easy to understand how to do it.
12th	Jason A was a MAGINFICENT tutor. He was fun, friendly, and reiterated concepts and the process when I didn't understand. I was never afraid to ask a question, even if I thought it was dumb. I am fully satisfied with working on my homework and preparing for my test tomorrow!
12th	My tutor was great. He made sure I understood the problem and concepts before moving on. He was very professional and friendly. Thanks to him along with Tutor.com and Kan-Ed.
12th	Thanks so much for providing such an accessible way to feel more confident about my grades!
12th	this is so great! it helps me do homework and get better grades! I've shared it with a lot of friends
College	One of the best, he explained a problem that my professor couldn't explain very well at all.
College	It's lovely to see such talented tutors on here- it helps lessen the stress and frustration of not understanding a proble. THnaks for the service, and wonderful tutors.
College	The tutor was great! She reviewed my work with a fine tooth comb and the best thing was that she gave me a list of transitions that was of the utmost help. I got a ton of help!
College	Thank you for all your help! I feel more confident in drawing pictures that match the word problems for these trig questions!
College	Wow! I had a fantastic tutor named Curtis who proofed my resume. He gave me some very valuable information. This is an awesome service. Thanks!
College	Allie was amazing. I spent an hour at a tutor center today and didn't receive nearly the help there that I had in 10 minutes on this site. I think I could actually pass College Algebra now instead of struggling from start to finish. Thank you

Report of the Kan-ed Study Committee to the 2012 Kansas Legislature

CHAIRPERSON: Representative Marc Rhoades

OTHER MEMBERS: Senators Pat Apple, Terrie Huntington, Kelly Kultala, Mike Peterson, and John Vratil; and Representatives Richard Billinger, Tom Burroughs, Terry Calloway, and Peggy Mast

STUDY TOPIC

- Evaluate the Kan-ed program for efficiency and effectiveness in providing schools, libraries, and hospitals with broadband internet access. Specifically, determine the economic value of the Kan-ed program to the state, describe how Kan-ed funds are used, determine if there is a more cost efficient way to provide schools, libraries, and hospitals broadband internet access, and compare the costs of alternatives to the Kan-ed program.

Kan-ed Study Committee

REPORT

CONCLUSIONS AND RECOMMENDATIONS

Related to each of the charges to the Kan-ed Study Committee by the 2011 Legislature, the Committee makes the following conclusions and recommendations.

Evaluate the Kan-ed program for efficiency and effectiveness in providing schools, libraries, and hospitals broadband internet access;

The Committee found that Kan-ed has operated in an effective manner as it relates to its statutory charge - bringing connectivity to Kansans.

The Committee recommends that Kan-ed staff continue to implement its recommendations in the Circuit Utilization Report provided to the Committee, that is determining the most efficient and effective actions to take with underutilized circuits and those circuits with a “disconnect” recommendation. During this review, Kan-ed staff should keep in mind that some customers may under utilize circuits because of the sporadic manner in which the circuit is needed; therefore, the circuit should be maintained.

The Committee also recommends that Kan-ed continue to conduct circuit utilization reviews of all circuits under the Kan-ed jurisdiction.

Kan-ed should conduct utilization analysis with defined and published objective metrics with a formulaic approach and avoid subjective or anecdotal analysis that cannot be numerically backed. Additionally, Kan-ed should re-work their network program to provide equity in funding alternative solutions for members with needs that are not effectively or efficiently served within the confines of the current Kan-ed 2.0 Advanced Virtual Private Network (AVPN) or Kan-ed Authorized Provider (KAP) offerings.

There also needs to be some kind of formula prepared that would, going forward, allow Kan-ed to know at what point an under-utilized site needs to be disconnected and allowed to seek the kind of connectivity that suits a site's individual needs.

Determine the economic value of the Kan-ed program to the state;

The Committee found that the four content areas provided via Kan-ed: Empowered Desktop (Learning Station), EMResource, library databases, and LiveTutor all seem to cost less to provide to Kansas via Kan-ed than through other avenues. The question remains whether all four of these resources are needed or whether there are other avenues to meet the need.

The Committee recommends that the 2012 Legislature consider the following when reviewing the Kan-ed budget, particularly regarding these programming content areas:

- Consider content that may be more valuable in parts of the state where access to resources may be less readily available, e.g. library databases in western Kansas. By way of comparison, in FY2011, the total statewide cost of the databases was \$1,474,467. Total database usage (searches) during FY2011 was 9,477,418 = 16 cents per search.
- Consider the value of EMResource for the state regarding disaster response and homeland security and because of this, work with Kan-ed and the Kansas Hospital Association to determine if there is another entity, other than Kan-ed, that should manage the EMResource program. In addition, evaluate whether the Kansas Universal Service Fund (KUSF) is the best funding source for this program or should alternative funding be located so the program could be assured longevity. EMResource project cost for FY2011 was \$189,845.
- Review the value of the remaining content area – the Empowered Desktop (Learning Station) - and determine whether Kan-ed is the correct “home” for this program, and whether KUSF funding is the most reliable funding source or alternative sources should be found.

Committee members noted that tutoring programs are available on-line for free, which could assist in taking the place of the LiveTutor program which was discontinued by Kan-ed on July 1, 2011.

Describe how Kan-ed funds are used;

Determine if there is a more cost-efficient way to provide broadband internet access to schools, libraries, and hospitals;

Describe any alternate ways to provide broadband internet access to schools, libraries, and hospitals; and

Compare the costs of alternatives to the Kan-ed program.

Regarding the four remaining charges to the Committee shown above, all four charges will be addressed as part of a performance audit of the Kan-ed program which should be completed and presented to the Kansas Legislature in late January 2012.

However, it is worth noting the five conclusions that came from the Kan-ed Circuit Bandwidth Utilization Report. The full report is available upon request from the Kansas Legislative Research Department.

“Conclusion #1 – Half of the Kan-ed 2.0 sites present as good candidates for commercial internet connections rather than the advanced regional network connections (ARN) provided by Kan-ed, which would result in a large amount of savings. An excellent example of this is the library community where only 13 percent passed the initial test for ARN connectivity, and a mere 4 percent are using scheduled video services.

However, with a utilization rate of 84 percent, it is clear that the library community does have a strong need for connectivity.”

“Conclusion #2 – Not derived from this report (the Circuit Bandwidth Utilization Report) alone, but supported by it, a great number of sites appear to have internet connections separate from the Kan-ed connection. Traffic patterns for Kan-ed 2.0 connections, in comparison to KanREN connections, and statements from many in the Kan-ed community support this. One of the major rationales of Kan-ed 2.0 was that sites would only need a single connection for everything, citing the inefficiency of multiple connections. It would seem clear that above the free T1 level, a large number of Kan-ed sites are finding local connectivity options more cost effective than larger Kan-ed circuits, yet they also continue to receive a free Kan-ed T1. If the Kan-ed 2.0 network program cannot offer affordable, single connection services that meet member needs, then the Kan-ed 2.0 network is failing to live up to Kan-ed’s own intentions for it.”

“Conclusion #3 – Traffic patterns for a non-trivial number of connections reveal video is in use, but the current Kan-ed video method is not the best fit. It appears that many sites are using fully interactive two-way video systems and connections for applications that are essentially one-way. While this does work extremely well, one-way video does not require dedicated resources like bi-directional video does, and costs considerably less. An update or refreshing in technologies used to most efficiently meet needs is warranted.”

“Conclusion #4 – This report should form the basis of a more thorough, site-by-site query of needs, backed by data. While this numerical analysis should make the network connectivity needs for most of the Kan-ed 2.0 sites clear, recommendations for a large number that are 'in the middle' will require consultation with the sites directly. Any conclusions should be backed by data. For example, if a site were to claim to be heavily dependent upon two-way interactive video, yet data shows the application is used only sparsely, it raises questions about how critical the activities are, or is the site actually using a second commercial internet connection for part of their video needs.”

“Conclusion #5 – There is a large disparity between KanREN and Kan-ed members. On average, KanREN circuit size is much larger, KanREN circuits are more utilized, and patterns suggest more applicable ARN connections. The segment of KanREN’s network operation that was compared is the segment that is applicable. This clearly indicates that there are differences in the KanREN and Kan-ed networking programs. Higher utilization suggests that without subsidized funding, KanREN members are more judicious in choosing a bandwidth level. At the same time, the higher connectivity bandwidth suggests more network service needs, and that the KanREN model is more scalable at higher speeds. Likewise, the Kan-ed model appears extremely popular for T1 level (100 percent subsidized) connectivity.”

“Clearly, the Kan-ed 2.0 network program is providing services that are being used. It is also clear that a non-trivial number of Kan-ed 2.0 sites have non-Kan-ed internet connections with considerably faster speeds than the Kan-ed free T1. Many of these sites are the smallest Kan-ed sites: public libraries. This raises serious questions as to whether or not the T1 technology is the answer for future broadband connectivity, or even much of it today.”

In addition, the Committee commends Kan-ed and KanREN staff for providing a plan for developing a single statewide network which will provide customers with a single Advanced Regional Network and will help customers identify whether a direct connection to the regional network is most effective for the customer or whether connection to a private telecommunications provider is better.

Further, the Committee recommends Kan-ed staff develop cost-sharing plans for customers as well as sliding fee scales based upon ability to pay.

Finally, the Committee recommends that the 2012 Legislature review the governance and oversight of the KUSF with an emphasis on ensuring accountability of the funding keeping in mind the possible loss of the KUSF as further national policy proceeds in that direction.

Proposed Legislation: None

BACKGROUND

The Kan-ed Study Committee was created by 2011 HB 2014 to evaluate the Kan-ed program for efficiency and effectiveness in providing schools, libraries, and hospitals with broadband internet access. 2011 HB 2014 provided the Committee with the following parameters for its study:

- Determine the economic value of the Kan-ed program to the state;
- Describe how Kan-ed funds are used;
- Determine if there is a more cost efficient way to provide schools, libraries, and hospitals broadband internet access; and
- Compare the costs of alternatives to the Kan-ed program.

The Committee consists of five House members and five Senate members appointed by the Legislative Coordinating Council (LCC). The Committee met on September 13 and October 27, 2011.

COMMITTEE ACTIVITIES

September 13, 2011, Meeting

Kan-ed's Statutory Mandate

The Committee began its September 13, 2011, meeting by reviewing Kan-ed's statutory mandate. The framework for Kan-ed has been enacted and modified through several pieces of legislation. In 2001, the Legislature passed Senate Sub. for HB 2035. The bill's stated purpose was to provide for a broadband technology-based network for schools, libraries, and hospitals to connect to broadband internet access and intranet access for distance learning. The Kansas Board of Regents (Regents) was directed to contract with communications providers for

the creation, operation, and maintenance of the Kan-ed network. The network was not to impair existing contracts for telecommunications or internet service. Furthermore, no new construction of state-owned assets was to be undertaken in the creation of the network. Regents was authorized to appoint advisory committees with participants knowledgeable about topics such as network facilities and services, network content and user training, and any other topics as may be necessary or useful.

In 2002, Sub. for SB 614 established a funding mechanism for Kan-ed. The bill provided that, beginning January 1, 2003, funding for Kan-ed would come from the Kansas Universal Service Fund (KUSF). The bill required the Board to request funding approval through the appropriations process each year. Funding for Kan-ed was capped at \$10.0 million each fiscal year. These provisions originally were set to expire on June 30, 2005. However, 2005 HB 2026 extended this expiration date to June 30, 2009, and phased out funding for Kan-ed from the KUSF over four years. After this sunset, the statute required that “state general fund moneys shall be used to fund the Kan-ed network and such funding shall be of the highest priority along with education funding.” For the past three fiscal years, the annual budget bill has included a proviso that authorized the transfer of funds from the KUSF to Kan-ed. In fiscal year 2012, Kan-ed was appropriated \$6.0 million from the KUSF; a \$4.0 million reduction from the previous year. The Kan-ed Act can be found at KSA 75-7221 to -7228.

Overview of the Kan-ed Program

The following two paragraphs describe Kan-ed 1.0, and should not be confused with Kan-ed 2.0, which is completely different.

The Committee received a review of the Kan-ed program from Legislative Post Audit staff and Kan-ed staff. The Kan-ed network consists of 19 network access points located across the State, connected by 24 circuits. The network access points serve as

connection points to the Kan-ed network—users connect to the network through these access points. The circuits act as pipes that transmit electronic data—such as video conferencing traffic—from one access point to another.

Originally, the Kan-ed network comprised 17 circuits, mainly located in eastern Kansas. Over time, the network has expanded to 24 circuits, most of which were added in western Kansas. According to Kan-ed staff, expanding the network allowed them to reduce many members' costs of connecting to the network.

Kan-ed members are defined in statute as K-12 schools, public libraries, hospitals and higher education institutions. The total potential Kan-ed membership is 883. In 2007, at the time of the Legislative Post Audit report, there were 290 connected members. As a result of the launch of the Kan-ed 2.0 network, connected members increased from 290 (43 higher education institutions, 43 hospitals, 167 K-12 schools, 37 libraries) in December 2008 to 451 (41 higher education institutions, 73 hospitals, 207 K-12 schools, and 130 libraries) in June of 2011.

Findings from an October 2011 Kan-ed Circuit Bandwidth Utilization study showed that across all Kan-ed constituent groups combined, that of the 407 sites, only 176 sites (43 percent) needed the Advanced Regional Network (ARN) that Kan-ed provides and only 123 sites (30 percent) needed scheduling video services. The remaining, based upon their use of the current Kan-ed network, needed much less services. 207 (51 percent) easily would need only simple internet connections, 25 sites (6 percent) do not necessitate any connection at all and disconnection was recommended. Finally, the report showed that 111 sites (27 percent) were underutilizing the circuits. The definition in the report of the term “underutilization” is “a site connection that presents as either very infrequently used (e.g., a few hours a month) or usage never comes close to the provisioned bandwidth of the circuit. In this context, underutilized should be considered

very underutilized, as the calculation of utilization was generous.”

The successful bidder for the Kan-ed 2.0 network was AT&T. But Kan-ed also partners with 23 private telecommunication companies to provide broadband connections to 168 additional Kan-ed members. It is the belief of many of the Committee members that the T-1 lines which are brought to the Kan-ed members at a cost of approximately \$690 per month are many times slower than they could get from other providers at less of a cost. Much improvement on connectivity, speed and overall technology has been made since 2008. Should not the cost be coming down?

From 2007 to today, Kan-ed has received \$56 million: \$50 million from the KUSF and \$6 million from the State General Fund. Since 2008, Kan-ed, apart from its other work, has provided grants to Kan-ed members for equipment and circuit costs.

Higher Education Institutions	\$1,546,326
Hospitals	\$1,899,278
K-12 Schools	\$3,757,597
Libraries	\$2,366,170
Total	\$9,569,371

The primary services Kan-ed makes available to all its members include research databases and various learning applications. Other services are available to connected members only.

Services available to all members can be accessed through any internet connection, whereas services for connected members require a physical connection to the Kan-ed network. The Kan-ed program also provides broadband internet connection subsidies and equipment grants for some of its members.

A brief description of Kan-ed services is provided in the chart below.

Services Available to All Members	
Empowered Desktop	A computer application that provides access to a variety of instructional

	programs and educational databases. Empowered Desktop is available to all members but is geared towards a K-12 audience.
Educational and Research Databases	Five major databases allow searches of: <ul style="list-style-type: none"> • More than 26 million articles from 120 newspapers; • U.S. Federal census records from 1790 to 1930; and • A variety of nursing and health journals.
EMS System (Hospitals Only)	A computer application that allows hospitals to communicate with each other during emergency situations about such things as the availability of hospital beds and transportation.
KanGuard Filtered Internet (Libraries Only)	A computer application libraries use to filter out potentially offensive Internet content.
E-Rate 1-800 Telephone Support (Schools, Hospitals, and Libraries)	Provides telephone support for members applying for federal E-Rate funding.
Services Available Only to Connected Members	
Interactive Distance Learning	Generally used by K-12 schools and higher education institutions, this service allows students and teachers to interact with others across the state. The need for this capability is one of the primary reasons members become connected.
Video-conferencing	A service that allows <u>connected</u> members to participate in videoconferencing sessions with others. Because videoconferencing requires constant flow of large amounts of electronic data, the quality of videoconferencing is improved greatly when conducted over the Kan-ed network.
Renovo Scheduler	An optional tool used to automatically schedule videoconferencing and interactive distance learning sessions with others.
Internet2	A private, high-speed, research-based Internet geared towards higher education and K-12 institutions.
Network Operations Center	This center monitors and troubleshoots the Kan-ed network and provides technical assistance to <u>connected</u> members.

Source: LPA analysis of Kan-ed network, services, and usage data.

Overview of Kansas Research and Education Network (KanREN)

Chairperson Rhoades requested that KanREN staff address the Committee and provide a brief overview of KanREN. KanREN is a non-profit consortium of colleges, universities, school districts, and other organizations in Kansas, organized for the purpose of facilitating communication among them, and providing themselves with connectivity to the internet *via* a statewide TCP/IP network. KanREN is an independent, not-for-profit 501(c)(3) Kansas corporation. Membership in KanREN is open to any college, university, library, or school district in Kansas. Other non-profit organizations may join the consortium subject to the approval of the KanREN executive committee.

KanREN is not a commercial Internet Service Provider (ISP), though it does provide internet connectivity for most of its member sites. KanREN is not supported with any funding from the state or federal governments. Though begun with funding from the National Science Foundation in 1993, today KanREN is completely supported by membership fees paid by its member institutions. KanREN is not an agency of the state or federal governments. The KanREN network is interconnected with the Kan-ed 2.0 network providing seamless access between them. KanREN provides Kan-ed most of its Internet service, and access to other resources such as networks operated by Internet2. Additionally, KanREN monitors, manages and maintains the Kan-ed 2.0 network under contract with KSBor.

Testimony and Request for Information

A number of conferees appeared at the September 13, 2011, meeting and together provided the Committee with an overview of the Kan-ed program. The organizations that appeared included the Kansas Revisor of Statutes, Legislative Post Audit, Kan-ed, Kansas Board of Regents, Kansas Corporation Commission, Kansas Hospital Association, Prairie Hills School District, Barton Community College, State

Library, Kansas Cable Telecommunications Association, State Independent Telephone Association, AT&T, and KanREN.

Senator Vratil requested that Kan-ed conduct a cost benefit analysis of its services and present this information to the Committee at the October 27, 2011, meeting.

OCTOBER 27, 2011, MEETING

At the Committee's final meeting on October 27, 2011, members reviewed the charge to the Committee as well as the documents and presentations made by Kan-ed and KanREN staff and came to the following conclusions.

Evaluate the Kan-ed program for efficiency and effectiveness in providing schools, libraries, and hospitals broadband internet access.

"The Committee found that Kan-ed has operated in an effective manner as it relates to its statutory charge – bringing connectivity to Kansans."

In its report to the Committee, Kan-ed and KanREN staff provided a Circuit Utilization Report identifying further efficiencies that might be achieved via review of the 407 circuits managed by KanREN on behalf of Kan-ed and provided through AT&T. Specifically, KanREN, acting as network operator for Kan-ed staff identified 25 circuits that do not appear to be used and a possible 112 circuits that are underutilized. A review could determine if there is a justifiable reason that circuits are used in a limited manner, such as a hospital that would use the circuit on an irregular basis for telemedicine work.

In addition to the 407 circuits described in the above report, there are other circuits provided by 20 Kan-ed authorized providers. There is no reason to believe the utilization rates differ in this latter situation.

The Committee commends Kan-ed and KanREN staff for developing a vision for a single advanced regional network. Committee members were told this network would focus on the needs of the institutions and encourage collaboration, without directly competing with commercial service providers.

Kan-ed and KanREN included the following in a joint vision statement provided to the Committee.

- Provide needs assessment and funding assistance services to small, rural customers, such as rural school districts, rather than direct connection to a regional network.
- Identify the customers which could be better served by a local telecommunications provider and which ones could be best served by a direct connection to a regional network.
- Work with telecommunications providers to interconnect their networks with the advanced regional network, which could keep internet traffic in Kansas and reduce out-of-state spending.

Determine the economic value of the Kan-ed program to the state.

The Committee found that the four content areas provided via Kan-ed: Empowered Desktop (Learning Station), EMResource, library databases, and LiveTutor all cost less to provide to Kansas via Kan-ed than through other avenues.

Content Area Descriptions

Committee members reviewed a cost-benefit analysis of the four content areas provided by Kan-ed which are:

Empowered Desktop or Learning Station

Since 2004, LearningStation—a private company—has worked with Kan-ed, the statewide network in Kansas, to deliver the Empowered Desktop by Kan-ed to every educator and student across the state. The Empowered Desktop by Kan-ed is a portal, accessible anytime and anywhere, with resources for teaching and learning.

LearningStation, a leading provider of customized e-learning tools for K–12 classrooms, connects administrators, teachers, parents, and students to maximize the digital classroom and improve student achievement. Schools use LearningStation's innovative solutions to evaluate and address individual student needs with LearningStation's Test Builder, a standards-aligned formative assessment and integrated instruction tool; communicate with students and families through LearningStation's Teacher Pages, an easy-to-use website creation tool; store and share files simply and securely online with the Education Backpack; and engage students with integrated online content that fits seamlessly into class assignments. LearningStation has been honored by several groups in the learning industry for its significant contributions to the growth of education technology.

EMResource

In 2004, The Kansas Hospital Education and Research Foundation was granted funding from Kan-ed to support a statewide license of EMResource. EMResource is a web-based program providing real time information on hospital emergency department status, hospital patient capacity, availability of staffed beds, and available specialized treatment capabilities.

Databases

Kan-ed provides grant funding to the State Library which negotiates, coordinates, contracts for and provides a portion of the funding for statewide subscriptions to electronic databases so that all Kansans may

have high quality information resources. An example of the databases made available include nursing databases required for nursing accreditation and InfoTrac Student Edition, a periodical database for high school students with over 1,100 titles, cross searchable with e-books.

Tutor.com

Tutor.com provided on-line tutoring for students in grades K–12 as well as college students and other adults. This service was discontinued on July 1, 2011, because of the budget cut to Kan-ed.

Cost Evaluation of Each Content Area

The Committee reviewed documentation provided by Kan-ed comparing the cost of providing each of the four content areas to customers across the state with the estimated costs of providing the same or similar services in an alternative manner. The results of that comparison is described below.

Empowered Desktop or Learning Station

Kan-ed staff presented a cost comparison of this content area as provided by Kan-ed compared to the purchase of the same material in the private market. The savings shown was nearly \$3.9 million saved via the Kan-ed unlimited statewide license available to all Kansas students and schools compared to school districts purchasing the same product on their own. The cost to the State is \$551,820 but its unclear how many students and teachers are taking advantage of this program and how it is helping students' progress in their learning.

EMResource

According to Kan-ed and Kansas Hospital Association staff, EMResource is unique in the United States in the services it provides to hospitals. Currently, EMResource is available in 26 states, including all states

surrounding Kansas except Nebraska. As stated above, EMResource project cost for FY2011 was \$189,845.

Committee members agreed that EMResource provides a very important service across the state, particularly critical in times of natural disaster or other emergency situations when a community needs to rely on sending patients to neighboring hospitals, such as was needed in the aftermath of the Joplin tornado.

Databases

The State Library provided information to the Committee that showed that the cost of the statewide databases provided by Kan-ed and the State Library cost nearly \$1.5 million. State Library staff estimated it would cost individual libraries approximately \$24.0 million to license the database content on their own.

Tutor.com

In FY 2011, Kan-ed paid \$309,000 for the Live Tutor service through Tutor.com. Further information presented indicated that if students have to pay for alternative tutoring services, the cost could have been from \$405,000 to \$472,500, based on a cost estimate of \$30 to \$35 per hour for tutoring services.

This service was terminated in Kansas on July 1, 2011. Committee members were informed that similar services are currently available at no charge via the internet.

Legislative Post Audit and the Kan-ed Study Committee

Regarding the four remaining charges to the Committee shown below, staff from the Legislative Division of Post Audit told members all four questions would be answered as part of a performance audit of the Kan-ed program which should be completed and presented to the Kansas Legislature in late January 2012.

- Describe how Kan-ed funds are used;
- Determine if there is a more cost-efficient way to provide broadband internet access to schools libraries, and hospitals;
- Describe any alternate ways to provide broadband internet access to schools, libraries, and hospitals; and
- Compare the costs of alternatives to the Kan-ed program.

COMMITTEE RECOMMENDATIONS

Related to each of the charges to the Kan-ed Study Committee by the 2011 Legislature, the Committee makes the following conclusions and recommendations.

Evaluate the Kan-ed program for efficiency and effectiveness in providing schools, libraries, and hospitals broadband internet access;

The Committee found that Kan-ed has operated in an effective manner as it relates to its statutory charge of bringing connectivity to Kansans.

The Committee recommends that Kan-ed staff continue to implement its recommendations in the Circuit Utilization Report provided to the Committee, that is determining the most efficient and effective actions to take with underutilized circuits and those circuits with a “disconnect” recommendation. During this review, Kan-ed staff should keep in mind that some customers may under utilize circuits because of the sporadic manner in which the circuit is needed; therefore, the circuit should be maintained.

The Committee also recommends that Kan-ed continue to conduct circuit utilization

reviews of all circuits under the Kan-ed jurisdiction.

There also needs to be some kind of formula prepared that would, going forward, allow Kan-ed to know at what point a under-utilized site needs to be disconnected and allowed to seek the kind of connectivity that suits a site's individual needs.

Determine the economic value of the Kan-ed program to the state;

The Committee found that the four content areas provide via Kan-ed: Empowered Desktop (Learning Station), EMResource, library databases, and LiveTutor all seem to cost less to provide to Kansas *via* Kan-ed than through other avenues. The question remains whether all four of these resources are needed or whether there are other avenues to meet the need.

The Committee recommends that the 2012 Legislature consider the following when reviewing the Kan-ed budget, particularly regarding these programming content areas:

- Consider content that may be more valuable in parts of the state where access to resources may be less readily available, e.g. library databases in western Kansas. As way of comparison, in FY2011 the total statewide cost of the databases was \$1,474,467. Total database usage (searches) during FY2011 was 9,477,418 = 16 cents per search.
- Consider the value of EMResource for the state regarding disaster response and homeland security and because of this, work with Kan-ed and the Kansas Hospital Association to determine if there is another entity, other than Kan-ed, that should manage the EMResource program. In addition, evaluate whether the Kansas Universal Service Fund (KUSF) is

the best funding source for this program or should alternative funding be located so the program could be assured longevity. EMResource project cost for FY2011 was \$189,845.

- Review the value of the remaining content areas – the Empowered Desktop (Learning Station) - and determine whether Kan-ed is the correct “home” for this program, and whether KUSF funding is the most reliable funding source or alternative sources should be found.

Committee members noted that tutoring programs are available on-line for free, which could assist in taking the place of the LiveTutor program which was discontinued by Kan-ed on July 1, 2011.

Describe how Kan-ed funds are used;

Determine if there is a more cost-efficient way to provide broadband internet access to schools, libraries, and hospitals;

Describe any alternate ways to provide broadband internet access to schools, libraries, and hospitals; and

Compare the costs of alternatives to the Kan-ed program.

Regarding the four remaining charges to the Committee shown above, all four charges will be addressed as part of a performance audit of the Kan-ed program which should be completed and presented to the Kansas Legislature in late January 2012.

However, it is worth putting here the five conclusions that came from the Kan-ed Circuit Bandwidth Utilization Report. The full

report is available upon request from the Kansas Legislative Research Department.

“Conclusion #1 – Half of the Kan-ed 2.0 sites present as good candidates for commercial internet connections rather than the advanced regional network connections (ARN) provided by Kan-ed, which would result in a large amount of savings. An excellent example of this is the library community where only 13 percent passed the initial test for ARN connectivity, and a mere 4 percent are using scheduled video services. However, with a utilization rate of 84 percent, it is clear that the library community does have a strong need for connectivity.”

“Conclusion #2 – Not derived from this report (the Circuit Bandwidth Utilization Report) alone, but supported by it, a great number of sites appear to have internet connections separate from the Kan-ed connection. Traffic patterns for Kan-ed 2.0 connections, in comparison to KanREN connections, and statements from many in the Kan-ed community support this. One of the major rationales of Kan-ed 2.0 was that sites would only need a single connection for everything, citing the inefficiency of multiple connections. It would seem clear that above the free T1 level, a large number of Kan-ed sites are finding local connectivity options more cost effective than larger Kan-ed circuits, yet they continue to receive a free Kan-ed T1. If the Kan-ed 2.0 network program cannot offer affordable, single connection services that meet member needs, then the Kan-ed 2.0 network is failing to live up to Kan-ed’s own intentions for it.

“Conclusion #3 – Traffic patterns for a non-trivial number of connections reveal video is in use, but the current Kan-ed video method is not the best fit. It appears that many sites are using fully interactive two-way video systems

and connections for applications that are essentially one-way. While this does work extremely well, one-way video does not require dedicated resources like bi-directional video does, and costs considerably less. An update or refreshing in technologies used to most efficiently meet needs is warranted.”

“Conclusion #4 – This report should form the basis of a more thorough, site-by-site query of needs, backed by data. While this numerical analysis should make the network connectivity needs for most of the Kan-ed 2.0 sites clear, recommendations for a large number that are 'in the middle' will require consultation with the sites directly. Any conclusions should be backed by data. For example, if a site were to claim to be heavily dependent upon two-way interactive video, yet data shows the application is used only sparsely, it raises questions about how critical the activities are, or is the site actually using a second commercial internet connection for part of their video needs.”

“Conclusion #5 – There is a large disparity between KanREN and Kan-ed members. On average, KanREN circuit size is much larger, KanREN circuits are more utilized, and patterns suggest more applicable ARN connections. The segment of KanREN’s network operation that was compared is the segment that is applicable. This clearly indicates that there are differences in the KanREN and Kan-ed networking programs. Higher utilization suggests that without subsidized funding, KanREN members are more judicious in choosing a

bandwidth level. At the same time, the higher connectivity bandwidth suggests more network service needs, and that the KanREN model is more scalable at higher speeds. Likewise, the Kan-ed model appears extremely popular for T1 level (100 percent subsidized) connectivity.”

“Clearly, the Kan-ed 2.0 network program is providing services that are being used. It is also clear that a non-trivial number of Kan-ed 2.0 sites have non-Kan-ed internet connections with considerably faster speeds than the Kan-ed free T1. Many of these sites are the smallest Kan-ed sites: public libraries. This raises serious questions as to whether or not the T1 technology is the answer for future broadband connectivity, or even much of it today.”

In addition, the Committee commends Kan-ed and KanREN staff for providing a plan for developing a single statewide network which will provide customers with a single Advanced Regional Network and will help customers identify whether a direct connection to the regional network is most effective for the customer or whether connection to a private telecommunications provider is better.

Further, the Committee recommends Kan-ed staff develop cost-sharing plans for customers as well as sliding fee scales based upon ability to pay.

Finally, the Committee recommends that the 2012 Legislature review the governance and oversight of the KUSF with an emphasis on ensuring accountability of the funding keeping in mind the possible loss of the KUSF as further national policy proceeds in that direction.

APPENDIX 6

Legislative Post Audit Summary

2011 Legislative Post Audit Summary

In September 2011, the Legislative Post Audit (LPA) Committee approved a request for a performance audit of Kan-ed entitled “Kansas Board of Regents: Evaluating the Effects of Eliminating the Kan-ed Program.” The entrance interview for the Post Audit was conducted on September 28, 2011 with subsequent meetings between LPA and Kan-ed staff continuing through the fall. During the entrance interview with Kan-ed staff, Legislative Post Audit went through the LPA scope statement and explained the audit process. The LPA scope statement is included on the next page.

The performance audit is addressing the following question:

- 1) What critical services does Kan-ed provide its connected members, and could members afford to pay for these services?

OEIE has been working in conjunction with Kan-ed staff to provide data relating to the question above to post audit staff. In addition, OEIE answered questions regarding the types of data that were available and could easily be provided to LPA, such as data housed in the Kan-ed Membership Database, and answered any follow-up questions based on LPA reviews of the data provided.

As of December 1, 2011, LPA staff were still conducting the audit. Results of the audit are anticipated to be made available to the public in January 2012. Additional details related to the findings of the audit will be reported in the June 2012 report.

SCOPE STATEMENT

Kansas Board of Regents: Evaluating the Effects of Eliminating the Kan-ed Program

The Kan-ed Act, passed by the 2001 Legislature, established a broadband-based network for schools, libraries, and hospitals. The purpose of Kan-ed, a program governed by the Kansas Board of Regents, was to provide a broadband Internet network for its members, and intranet access for distance learning and videoconferencing. The statewide network uses facilities and lines owned or constructed by private companies. In fiscal year 2012, Kan-ed was appropriated \$6 million from the Kansas Universal Service Fund; a \$4 million reduction from the previous year.

As of May 2011, Kan-ed had 883 members (K-12 schools, libraries, hospitals and higher education institutions). Of those, 451 (51%) are connected members which have leased communication lines that create a physical connection to the Kan-ed network. The remaining members access more limited content that is available from the Kan-ed network via the Internet.

In the 2011 legislative session, House Bill 2390 proposed eliminating Kan-ed funding. Proponents argued that Kan-ed has accomplished its mission, and that its members would not notice the difference in internet functionality if it were eliminated. Opponents argued that Kan-ed provides a needed service to many people at no charge, and that rural parts of the State still need this broadband service.

Senate Substitute for House Bill 2014 requires that Legislative Post Audit conduct a performance audit of Kan-ed, on approval from the Legislative Post Audit Committee.

A performance audit in this area would address the following question:

1. **What critical services does Kan-ed provide its connected members, and could members afford to pay for these services?** To answer this question, we would select a sample of schools, libraries, hospitals, and higher education institutions that are connected Kan-ed members, in both rural and urban areas. For that sample, we would determine what services those members use, and what grants and subsidies they have received through Kan-ed in recent years. We would interview member officials to determine which services, subsidies, and grants are critical to the members' operations. For the critical services, we would try to determine whether low-cost alternatives might exist, and whether those alternatives might satisfy members' business needs. Finally, we would determine how much it would cost members to pay for critical services out-of-pocket, relative to their total budget and information technology budget. We would perform additional work in this area as needed.

Estimated resources: 3 staff for 12-14 weeks (plus review)

APPENDIX 7

Kan-ed Advisory Committee Summary

Kan-ed Advisory Committee Summary

The Kan-ed Advisory Committee (KAC) was created by the Kansas Board of Regents (KBOR), and its role is to advise Kan-ed staff and KBOR as to the development, implementation, and administration of the network. The KAC is composed of 15 members, including three representatives of each of the Kan-ed member constituent groups (Higher Ed, Hospitals, K-12 Schools, Libraries) and the telecommunications industry. The committee provides recommendations on how to best meet the needs of the constituent groups that they represent to best achieve the Kan-ed mission of providing resources that enable members to collaborate, educate, and enhance information delivery systems to become part of the global technology environment. The committee also serves to advocate on behalf of Kan-ed and assists with communication with the constituent groups.

Four KAC meetings were held in Calendar Year 2011. The Office of Educational Innovation and Evaluation (OEIE) attended each meeting and assisted by taking meeting minutes. Below is a summary of each meeting.

April 18, 2011

The April KAC meeting focused on a roundtable discussion of the structure of the KAC and appointment of a new Chair for the committee. The Kan-ed Executive Director provided a legislative update on HB 2390, which called for the abolishment of the Kan-ed program effective July 1, 2011. Also mentioned was the upcoming Kan-ed Membership Conference, planned for September in Wichita.

The approved meeting minutes of the April KAC meeting are included following page 2.

June 24, 2011

The June KAC meeting started with a discussion regarding open issues related to the KAC. First, Dr. Andy Tompkins of the KBOR provided the KAC with their “charge.” Next, the committee continued their discussion of the structure of the KAC that had begun at the April meeting. The Kan-ed Executive Director presented a proposed structure handout based on input received at the previous meeting. The committee next discussed the Kan-ed budget, and they considered three budget scenarios for cutting \$4 million out of the budget. The general consensus was for a blended model in which content would be phased out over a year to focus on the network. Kan-ed agreed to inform the KAC about budget decisions within the next week.

The approved meeting minutes of the June KAC meeting are included following those of the April meeting.

September 16, 2011

The September KAC meeting began with an overview of the Kan-ed program provided by the Director and OEIE due to new membership on the KAC. Then, the KAC focused on the governance document for the committee, including responsibilities of the committee chair. KAC members also worked within constituent group subgroups to identify communication vehicles and groups to involve in advocacy discussions related to Kan-ed. A legislative update related to the first Kan-ed Study Committee meeting was provided, and the committee discussed necessary preparations for the second Kan-ed Study Committee meeting to be held in October, including cost-benefit analyses for content services, needs assessment per member, and a network analysis from KanREN. Next, the KAC discussed how Kan-ed can meet the needs of the constituent groups in the future, and they identified some principles to be considered as Kan-ed moves forward.

The approved meeting minutes of the September KAC meeting are included following those of the June meeting.

December 7, 2011

The December KAC meeting began with an update by the Kan-ed Director regarding the status of the Legislative Post Audit. Next, the Kan-ed and KanREN Directors presented two documents that they had previously presented to the Kan-ed Study Committee in October: 1) their new Vision Statement for partnering to operate one statewide Advanced Regional Network, and 2) the *Kan-ed Circuit Bandwidth Utilization Report* prepared by KanREN at the request of the Kan-ed Study Committee. Both of these documents are included in Appendix 5 of this report. Next, the Kan-ed Director provided a review of the recently completed *Report of the Kan-ed Study Committee to the 2012 Legislature* (also included in Appendix 5). Focusing on one particular recommendation in that report, the KAC spent the remaining meeting time discussing ideas regarding how to incorporate cost sharing for Kan-ed members using a sliding fee scale.

The agenda from the December meeting is included at the end of this section of the report rather than the official meeting minutes because they have not yet been approved.

Kan-ed Advisory Committee (KAC)

Meeting Minutes

April 18, 2011

Attendees:

All KAC members and representatives were present along with Brad Williams, Jan Middendorf, and Randall White

KAC Structure Discussion

Roundtable Discussion

- Brad Williams opened discussion of the KAC structure and requested input from KAC members.
- Brad also reviewed the Kan-ed statute and established that Kan-ed can form committees.
- Brad queried other states to look at other effective structures and found that it is important to add industry participation for stronger consensus.
- Dennis Stone commented that there needs to be more transparency in regard to the Kan-ed and the KAC activities to share with various constituents.
- Brad invited KAC members to provide recommendations that he can take to Kan-ed and to the Kansas Board of Regents (KBOR).
- In discussing the KAC structure, Jennifer Findley shared information about how the previous User Advisory Council (UAC) was started as a formal group that could develop inputs and influence direction. Over time, UAC seemed to have less influence.
- Jennifer brought up the topic of frequency of meetings, and how in the past, there were too many meetings, but now there are not enough.
- Jennifer asked if KAC is to be a true governing body, or an advisory group that sets direction.
- Jennifer thinks it would be helpful for KAC to meet with Dr. Andy Tompkins. Brad agreed.
- Brad stated that KAC must invite industry vendors to the “KAC table” or Kan-ed won’t work.
- We need more communication and accountability to the legislature or we will have the fight indefinitely.
- Melinda Stanley asked if there is a Vision Statement and Mission Statement. Brad reviewed the Vision/Mission... schools, libraries, hospitals; and the statute is our mission statement.
- Jim Bingham strongly believes that we need TeleMedicine representation on the KAC. He likes the idea of a Chair and Vice Chair with two (dual) committee groups.
- Ravi Pendse thinks one (consolidated) KAC committee makes more sense.
- Jerry Smith likes a single committee with sub-groups; e.g. industry reports to the main committee.
- Coleen Jennison favors a single committee with an industry sub-group that has both policy and technical representation.

- Jennifer thinks we have good hospital and library representation, but education (esp. K-12) has a weak presence. Having sub-committees for each major Kan-ed group would allow stronger representation.
- Melinda asked what purpose Kan-ed has to/for KAC. She thinks we need “partners” or vendors.
- Brad mentioned that vendors cannot be referred to as “partners” due to legal ramifications.
- Brad shared that Dr. Andy Tompkins believes that Kan-ed advocacy has to come from the Kan-ed members/users, rather than coming from Kan-ed.
- Brad would like to work with the KAC for advice and proposed direction.
- Carol Barta commented that all advisory groups need a mechanism for input and that for future KAC meetings we should take advantage for Video TeleConferencing (VTC). Doing so will allow us to reach a larger audience/group of stakeholders. And “It’s what we do.”
- Jennifer emphasized that it is good for the public and private sectors to work together on KAC.
- Jim proposed a “super-group” structure for the KAC. And that this super-group should have an (all-hands) meeting once a year to keep everyone on the same page. Brad suggested that the “Steering Committee” (core group) would meet quarterly or monthly.
- Coleen shared “I think this is the right group,” meaning the attendees of this KAC. “All we need to do,” she added is to have a Chair and Vice Chair and meet more regularly.
- Brad shared that we need to consider adding some younger members...such as students or someone from the Student Advisory Council. The intent is that younger folks tend to be more technical savvy with the new and emerging technology and would have valuable perspectives.
- Brad mentioned the merits of having a Board of Regents member on the KAC (in addition to himself), so they can learn and hear firsthand what is happening with Kan-ed.
- Jim suggested that we add a KanREN member to the KAC.
- Catherine Moyer recognizes that KAC is made up of policy people; we need some technical representation on KAC. Also noted that AT&T is not represented. Brad remembered that AT&T was on Technical Work Group (TWG) in years past; he thinks they recused themselves because of the State contract. The TWG no longer exists. Nevertheless, Catherine feels AT&T should be invited; they can refuse, if they want. Brad asked about Sprint/CenturyLink; what about CLECs, ILECs, wireless providers...
- Jennifer thinks that a representative from the Governor’s Broadband Task should also be on the KAC, or at least informed with activities of Kan-ed and KAC.

Roundtable Summary

Brad summarized the discussion consensus for KAC Structure:

1. Chair, Vice Chair, Past Chair leadership:
 - a. Chair – one year term, followed by second year as Past Chair
 - b. Vice Chair replaces exiting Chair; thus a three (3) year commitment overall
 - c. Past Chair – a one year commitment
2. Five (5) groups represented
3. One to three (1-3) subgroups to bring in more membership representation
4. TeleMedicine needs to be represented.

5. Consider adding a KanREN member.
6. KAC members agreed and requested to have a “Regents” member at the KAC meetings.
7. **Motion:** that Jennifer be appointed as Chair from April, 2011 until June 30, 2012; followed for one-year term as Past Chair. Motion unanimously approved. Position accepted by Jennifer.
8. Jennifer will Chair next KAC meeting.
9. **ACTION** Jennifer and Brad to nominate Vice Chair candidates.
10. **ACTION** Work Group appointed (Jennifer, Brad, Jim, Coleen) pull everything together for next meeting (a conference call).
11. **ACTION:** KAC fill all positions by next KAC meeting, and appoint Vice Chair. Use VTC to pull real-time meeting together.
12. **ACTION** Jennifer: prepare a bulleted list of all KAC members, and their role, by next meeting.
13. Jennifer requests the next KAC meeting take place in July but not **July 15, 2011** – will advise.

Kan-ed Legislative Update - HB 2390

Brad reviewed the history and status of HB 2390. The Kansas Senate has yet to work the bill.

Kan-ed Membership Conference

September 15-16, Old Town, Wichita.

End. rrw/jm

Kan-ed Advisory Committee (KAC)

Meeting Minutes

June 24, 2011

I. Call to Order at 9:04am

II. Roll call

All KAC members and representatives were present along with Andy Tompkins, Brad Williams, Jerry Huff, Jan Middendorf, and Sarah Bradford

III. Minutes from April 18, 2011 – Approved

IV. Open Issues Discussions

a) **KAC “Charge” from Dr. Tompkins (statement attached)**

- Dr. Tompkins is meeting with legislators to determine the legislative intent of Kan-ed.
- KAC could or should report to the Kansas Board of Regents once a year.
- Contribute to Dr. Tompkins’ weekly update to the KBOR for issues that need updates or action.
- BOR representation on KAC would be positive, but difficult to execute.
 - Dr. Tompkins suggested that he would be the KBOR representative at the KAC meetings as his schedule permits.

b) **KAC Structure Discussion**

- Jennifer Findley opened the discussion and asked Brad Williams to present the proposed structure handout based on the previous KAC meeting in April. The KAC structure framework was in the KAC packets and attached.
- Proposed to have KAC meet quarterly and subgroups can meet more often but primarily based on need and pertinent issues.
- *Hospitals* – agree with proposed structure.
- *Libraries* – agree with proposed structure.
- *K-12* – likes proposed structure, but would like to discuss with Dale Dennis and Commissioners to confirm the positions to make sure that all are in agreement. KSSA is in agreement with the structure. Kathy Gosa brought up the need to include an E-Rate representative.
- *Higher Ed* – agrees with the proposed structure, but mentioned how students might be included on the KAC. Williams mentioned that idea at previous KAC meeting; Carol Barta suggested adding an intern on the KAC.

- *Telecom* – Catherine Moyer mentioned that AT&T needs to be at the table. Findley suggested Williams ask AT&T to send a representative to the meeting. Williams mentioned that if one provider is invited and others aren't that it could create a problem.
- Findley mentioned that in the role as consultant that AT&T would be available to answer questions for the KAC members.
- Findley proposed that Kan-ed would send a letter on July 1st to each agency asking them to appoint an individual for a 1-year term to the KAC. Appointment process supported.
- David Rosenthal mentioned the need to make sure that the disabled community is represented at the table. The question was who would be the representative for this and a subcommittee for these issues was suggested by Williams, and both the Library and KSDE said they have representation as well.

c) **Kan-ed Budget Discussion & Feedback**

- Legislative Session Update was presented by Williams and Dr. Tompkins. LPA audit and/or internal session request to potentially be conducted between July – December. Kan-ed does not have the details on when the LPA audit or internal session study would commence.
- Jerry Smith asked if the E-Rate appeal process could help with these budget cuts and Williams said no as this is not “new” money. It would actually mean less funds if the appeal failed, as Kan-ed would be requested to return funds.
- Chris Modelmog asked about where the 40% cut came from? Who proposed that budget amount? Dr. Tompkins said that it was just a political figure.
- Williams provided a detailed overview of the Kan-ed budget and the specific line items in the provided spreadsheet (see attached).
- The three budget scenarios for reducing Kan-ed's budget by \$4 million were discussed.
- Questions, answers, and comments from the discussion are as follows:
 - Ravi Pendse asked about the contingency line item- do the maintenance contracts cover the “contingency” line item? The answer was yes.
 - Jim Bingham suggested that all scenarios maintain \$415,000 for network contingency as 5% of network cost is still quite modest.
 - Findley asked about the impact from the grants programs and Bingham extended the question to include services as well, essentially asking what is the impact from these services. Williams addressed the questions along with Randy Stout by providing current figures of award amounts and priorities for recent Enhancing Technology Grant Program.
 - Findley asked a follow-up question about whether the grant awards are distributed across constituent groups. Stout said that fewer libraries applied for the program, so awards are not distributed evenly.
 - Smith questioned whether Kan-ed has commitments for the current grant program. Williams said that no commitments have been made at this point.
 - Coleen Jennison asked at what point was E-Rate used to support enhancing technology grants? Williams said since the beginning and Jerry Huff followed up to add that due to the inconsistency of when funds are received they decided to use for grants.
 - Findley asked whether the group purchasing of equipment will go away if grant program goes away. Huff said that it could still stay and that the equipment purchasing is due for an RFP soon.
 - Dennis Stones shared stories about the impact in K-12 schools using the IDL system. Students are using the Backpack and databases, and other specific services that they will really have trouble without if these services are cut. Having everyone on the same schedule,

- we will be able to leverage resources in terms of teaching classes over the IDL network. We have tried to cut staff, but we still need more bandwidth. These programs are working in schools. If we lose Kan-ed altogether it would be devastating to our schools, especially our rural schools.
- Williams emphasized that there is no “magic” here or where the money comes from.
 - Findley asked whether the in-house council looked at the legislative statute for the legal intent. Dr. Tompkins provided historical information about Kan-ed and aggregate purchasing.
 - Smith said that the primary benefit for private colleges are the databases and not the network. Suggested the possibility of a migration program in order to gradually reduce content support. Emphasized that losing access to the databases immediately would be hard.
 - Findley asked why private colleges do not take advantage of the network. No one answered (OEIE data response: at least 10 private colleges are directly connected to the Kan-ed network).
 - Barta said that they systematically cut the schools and libraries budgets, but where do we get the rest of the money? There is no place for libraries to “bill” for services.
 - Jo Budler emphasized that encyclopedias are no longer purchased because of content services provided by Kan-ed.
 - Pendse said that the network needs to change. Kan-ed needs to be cloud services that provide connectivity to the cloud and content in the cloud.
 - Findley asked the telecoms for their opinions. The telecom representatives said that according to statute the intent of Kan-ed was to build a network.
 - Budler said that the backbone is important and that content drives the issues. Content is important.
 - Jennison said that content is not Kan-ed’s charge or responsibility. Charge of Kan-ed was the network.
 - Bingham stated his continual concern of the lack of any kind of a statewide network plan with appropriate requirements and planning to serve the state’s network needs. He suggested that the Kan-ed model be revisited.
 - Williams suggested the need for a Connectivity Task Group.
 - Gosa reported responses from the K-12 survey of 91 respondents. Content, specifically the Empowered Desktop, had the largest impact for schools. Supports the blended model to help with a transition from content to network.
 - Moddelmog, as representative of KAIDE group, said that connectivity to provide courses is primary need of his constituents. He suggests suspending grants programs in order to begin migration away from content.
 - Stones said that Kan-ed has done a lot for K-12. However, we must adhere to statute. Bandwidth is our biggest issue and some schools are still not connected. 1) We need to know what the rules are and get back to the statute; and 2) Programs are important but connectivity is more important, especially out west.
 - Pendse said he has also served as Dean of the Library at Wichita State for past 2 years. If the statute says network then network is what it should be.
 - Moyer said she did not receive much feedback when she asked for it among her organization. Kan-ed is a network. In order to justify to the Legislature the need for content, the solution would be to change the statute.
 - Findley said that KHA organizations report that the backbone is the priority, as it is a valuable tool and saves significant funds. Broadband is incredibly important and essential for

- the state given the health records exchange initiatives. As far as EMResource, it is an all or nothing type of service.
- Bingham stated that KU Medical Center is the hub of telemedicine. The core issue on the table is a grant program versus content program. A one year reduction is a short-term solution. Long-term the network is the priority. His preference is a blended model for phasing out content side over a practical period.
 - Tom Erwin surveyed the community college constituents and there was discussion that content and affordable bandwidth are both important. There is a desire to have a comprehensive statewide network of services. Who do we collaborate with for content if it goes away? Given what the statute says, he is in favor of a migration away from content over a certain period of time.
 - Bingham asked for clarification as to why legislative intent is necessary since statute says that Kan-ed is to be a network.
 - Findley said Kan-ed and the KAC need clarity of what Legislature will support.
 - Pendse asked whether the Legislature wants to get rid of Kan-ed.
 - Bingham asked how you would ask Legislature that.
 - Williams stated that the legislative intent is different every year.
 - Dr. Tompkins said that we know that these are all important decisions and feedback for myself and Findley is essential. We need to cut 40% and we need to decide what to cut.
 - Budler, serving as State Library representative, said they serve schools, academic, and general public. Much in favor of a blended piece, especially in this current economic climate. Content is so important to libraries given their budgets. These are complicated issues and especially in K-12 settings. Heard from others on KAC that content is critical to K-12.
 - Rosenthal said he sent out an email without a lot of feedback. He said it is important to go back to statute to help guide thinking.
 - Smith said this discussion sounds like hardware versus software. Bottom line is that we need content and network. Content may not be Kan-ed's responsibility. The database support is most important for private colleges. We would have major issues without migration or phasing out process. Suggested suspending grant programs for one year for a blend scenario.
 - Jennison said it is important to note that eliminating Kan-ed does not mean eliminating networks. Important to tell the story to Legislature. How do you make it efficient – with technology so much better? Bottom line we make things work for less money. Answering questions such as who's responsibility is it to provide these services? Looking at the solutions, how do you make it as efficient as possible with what we have, blended or not blended?
 - Barta said public librarians said content is what they want and that they could do without the grants. Librarians have said that they get better speeds from their non-Kan-ed connections. The rural areas in Kansas cannot afford to buy the resources that other urban areas have.
 - Doug Vander Linden (from the audience) was allowed to make comments. He provided history of previous drafts of statute and said he was involved in the drafting process. Thanked KAC for their work.
 - Dr. Tompkins and Williams will let the KAC know budget cut decisions by next week (June 27-July 1)
 - Huff followed up with comments about the disruptive effect of the lack of long-term planning and financial commitment from the Legislature.
 - Jennison asked how it works for Kan-ed to submit E-Rate.

- Modellmog clarified that K-12s start E-Rate process in October.
- Dr. Tompkins said that voices help making decisions and that thoughts have changed based on discussion and feedback of KAC.
- Stones said that whatever comes out of this we need to cut 40% now. During legislative session talked to legislators who knew what Kan-ed was and talked to other legislators that didn't have any idea what Kan-ed offered. Kan-ed is a viable program and a solution to take to the legislators. Make sure that there is a newsletter for legislators and others to communicate the needs and benefits of Kan-ed. Another step further would be to share the strategic plan with the governing body.

V. New Business

- a) Kan-ed September Conference was discussed
 - Decision to go ahead and have a conference and wait for budget decisions to determine how large or small.
 - Next Quarterly Meeting Dates:
 - September 16th (potentially at Kan-ed Conference)
 - December 16th
 - March 16th, 2012
 - June 15th, 2012

VI. Action Items

ACTION Kan-ed will send a letter of invitation out to agencies requesting an individual to serve on KAC. Then new KAC members will be announced.

ACTION Depending on budget decisions, KAC recommends that a condensed Kan-ed Conference could be held. KAC will leave it to the Kan-ed staff to decide final format.

ACTION Kan-ed will inform KAC about budget decision by next week (June 27-July 1).

VII. Adjournment - 11:36am

End. sb/jm

Kan-ed Advisory Committee (KAC)

Meeting Minutes

September 16, 2011

I. Call to Order at 8:36am

II. Roll call

KAC members and representatives present: Jennifer Findley (Chair), Carol Barta, Kevin Case, Tom Erwin, Chris Modellmog, Catherine Moyer, Dan Murray (for Colleen Jennison), Ravi Pendse, David Rosenthal, Kevin Sanderson, Jerry Smith, Melinda Stanley,

Kan-ed staff present: Jerry Huff (Director), Charmine Chambers, Janell Holt, Leanne Houser, Chrisy Madden, Randy Stout

Others: Cort Buffington (KanREN), Sarah Bradford (OEIE), Debbie Edwards (AT&T), Tim Haug (AT&T), Jan Middendorf (OEIE)

III. Minutes from June 24, 2011 – Approved

IV. Agenda

a) **Kan-ed Overview (OEIE and Jerry Huff, Kan-ed Director)**

- A basic Kan-ed 101 background was provided for the new members as well as the current members. OEIE provided an overview of the types of data collected for the evaluation requirements. This data includes membership information, services, connections, as well as funding from grants and subsidies. All of this data is housed in the Kan-ed Membership Database developed by OEIE.
- Kan-ed Director augmented the information, explaining the need, purpose, and statute requirement of evaluation. The Director also provided background and history of Kan-ed.
- Questions were asked in regard to clarifying what is considered a “connected” member.
- There was a request for the statistics on how many K-12 members use a filter through Kan-ed.
- Questions about the cost of T-1s and how they were distributed was discussed.
- KAC members requested an overview of KanREN and its relationship to Kan-ed. KanREN Director provided highlights that describe the KanREN network, its members, services, and purpose, along with the role that KanREN plays for Kan-ed. KanREN, among other things, essentially serves as Network Operation Center (NOC) for Kan-ed.

b) **Governance Items**

- The Kan-ed Advisory Committee governance document was reviewed by KAC members. It was decided to strike out vice chair and past chair information in the document.

- It was agreed that the chair was responsible to find someone to take over the regularly scheduled meetings if they were unable to attend the meeting.
- It was agreed to stagger committee members' terms to maintain an historical perspective.
- It was agreed that the KAC Chair was responsible for extending an invitation to relevant guests to attend and contribute to the KAC meetings, e.g. KanREN and/or an AT&T representative to attend KAC meetings.

Break – 10 minutes

- After the break the KAC members worked within their constituent groups to:
 - Identify communication vehicles
 - Identify groups to involve in advocacy discussions
- The forms were given to OEIE to compile the sheets and send back to the KAC members (compiled data attached to minutes)

c) Legislative Update

- A re-cap of the Legislative Session from the Kan-ed Interim Committee meeting was presented. Many views were shared in regard to the Kan-ed program which included what the program has accomplished and provided to its members and the state of Kansas; what it should and shouldn't provide in the future.
- Many questions and much discussion arose about the meeting. They are listed below along with the responses.
- What are some of the things that need to happen before the next Interim Committee meeting, which is scheduled for October 27th, 2011?
 - A cost-benefit analysis for content
 - Needs assessment per member (what are tech needs; connectivity needs)
 - Request for network analysis from KanREN
 - Several discussion points made by Sen. Apple were also described.
- How did the question of people needing less bandwidth come up?
- There was discussion about performance reports and usage data to determine how and which members are utilizing the Kan-ed network. There are a number of reports out already and they just need to be reviewed to determine usage.
- There was discussion about the differences between video connections and commercial Internet connections. These differences need to be explained more and better to Legislature as they tend to think of "connectivity" as "Internet-access". One suggestion was to possibly break membership into two groups: those that need Internet access and those that need higher speeds for video.
- Is Kan-ed important for content or network?
 - A cost-benefit analysis would help determine that.
 - It was suggested that KAC could serve as a resource to Kan-ed for the cost-benefit analysis.
 - Several KAC members discussed the benefits and need for content.
 - It was suggested that the KAC put together a statement or report stating that content is very important for all constituent groups.
- Is KBOR's position at this point that Kan-ed's role is not to provide content?
 - Decision was made to cut content from Kan-ed's budget per direction from 2011 Legislature.

- Content is funded at 50% for FY12 and then completely cut for FY13.
- There was discussion about what the statute says in regard to content. It was determined that the statute does not specifically say that content is or is not permitted within the Kan-ed scope.
- Who will champion the content dollar challenge if Kan-ed doesn't do it anymore?
 - There was much discussion about how and why content was provided by Kan-ed.
 - There were also several suggestions of agencies that should potentially champion the content effort.
- KBOR will request \$6 million for FY 2013 because it was determined that requesting more funds would be futile.
- KAC members discussed the need to put forward recommendations that could be defended by the group.

d) **Future Directions**

- Kan-ed leadership requested feedback prior to the KAC meeting from the members on how they believe that Kan-ed could best serve the needs of higher education, hospitals, K12 schools, and public libraries.
- The KAC then discussed ideas of how they believed Kan-ed could best serve the needs of its constituent groups.
- Specifically, the question was asked: "If we were to start over today, what would we want to do different and how would services be provided to meet the constituent groups' needs?" KAC members identified the following potential Principles to be considered as Kan-ed or any network moves forward.
 - Principles:
 - Everyone has to pay something, could be a sliding scale based on usage and should be based on financial need and geography.
 - The State has an obligation to ensure that the smaller rural entities are connected.
 - We do not want to have duplicative state networks.
 - Collaboration is critical to our network regardless of the outcome.
 - As we look at where the networks are going, do we just want a good, robust, secure network?
- What about video? Renovo scheduling is critical, quality of services, adequate bandwidth, K-12 use will continue to grow...technology must improve and expand, e.g. allow for natural evolution of technology.
- VOIP was discussed. The statute prohibits Kan-ed from providing VOIP services, and was determined that this less of an issue given new technologies.

VI. New Business

- a) Next Quarterly Meeting Dates:
 - December 7th, 2011 – Topeka, video conferencing will be available
 - March and June will be decided through polling
- b) Important Dates:
 - Next Legislative Kan-ed Interim Study Meeting – Thursday, October 27, 2011
 - Legislative Post Audit – TBA, however it will occur before 2012 Legislative Session

VII. Action Items

ACTION - KAC governance document will be revised.

ACTION - KAC will report back to Kan-ed Director any other input from their respective constituent groups after receiving the summary notes from this meeting.

ACTION - Directors from Kan-ed and KanREN will continue to seek input from the KAC members and their respective constituent groups after receiving the summary notes from this meeting. They will then report back to the KAC members.

VIII. Adjournment - 1:00 pm

End. sb/jm



Advisory Committee Meeting Agenda

KBOR Office, Kathy Rupp Conference Room

**December 7, 2011
9:00 am to 1:00 pm**

Meeting: Kan-ed Advisory Committee Quarterly Meeting

Meeting Facilitator: Jennifer Findley, KAC Chair

Minutes: Sarah and Val (OEIE)

- I. Call to Order - Jennifer
- II. Roll Call - Jennifer
- III. Approval of Minutes from September 16, 2011 Meeting - Jennifer
- IV. Legislative Post Audit Update - Jerry
- V. Presentation on Vision Statement and Kan-ed Circuit Bandwidth Utilization as Presented to Kan-ed Interim Committee - Cort & Jerry
- VI. Review of Kan-ed Interim Committee Report - Jerry
- VII. Ideas Regarding How to Determine Funding Assistance - Committee
- VIII. Adjournment

APPENDIX 8

Legislative Tools Summary

Kan-ed Legislative Tools Summary

The 2012 Kansas Legislative Session begins January 9, 2012. Throughout the legislative session, OEIE will provide data to Kan-ed staff to support their testimony and respond to legislator questions. In preparation for the session, OEIE has prepared the following tools.

Legislative Data Sheets

OEIE is preparing data sheets for all legislators in both the Kansas Senate and House for the upcoming 2012 Kansas Legislative Session. Each data sheet lists all Kan-ed members located in the specific legislative district by the zip code of the member and is organized by constituent group. The sheet also reports all funding distributed to or on behalf of each member to date and whether or not the member is currently connected to the Kan-ed 2.0 network. The date at the bottom of each data sheet indicates when the data were retrieved from the Kan-ed Membership Database. A draft legislative data sheet is located immediately following page 2 of this report. The bullets below highlight changes to the 2012 Legislative Data Sheets based on observations, feedback, and evaluation best practices:

- Columns in the data sheet related to usage of Kan-ed content services (i.e., Empowered Desktop and EMResource) have been removed because Kan-ed is in the process of moving away from offering these services; these services will not be funded by Kan-ed in Fiscal Year 2013. The data sheet reflects this shift by now focusing on the funding distributed to or on behalf of members and connections to the Kan-ed 2.0 network.
- The “Direct Funding Received” column has been renamed “Funding Distributed To/On Behalf of Member” to avoid possible misinterpretation that these funds have all been received directly by the members (i.e., that checks totaling this amount have been sent to the member).
- The first note at the bottom of the data sheet also has been reworded to avoid this same type of misinterpretation about how funding is distributed. The note had previously been worded “Direct funding received does not reflect overall benefits received through Kan-ed. This funding amount represents direct funding received by the member, but it excludes much of the amount necessary for network infrastructure and administration.” Some of these funds had not been directly received by members because some were paid on behalf of the member directly to their Internet Service Provider (ISP). To describe the distribution of funds more accurately, the note now reads “Funding distributed to/on behalf of the member does not reflect overall benefits received through Kan-ed. This funding amount represents funds sent directly to the member as well as funds provided on behalf of the member to other organizations, such as to their Internet Service Provider (ISP) to offset costs of connections to the network; however, this funding amount excludes much of the amount necessary for network infrastructure and administration.”

Legislative Impact Statement Sheet

OEIE prepares a sheet of impact statements for each legislator. The sheets contain a statement from each of the four constituent groups (K-12, higher education institutions, libraries, and hospitals). A draft impact statement sheet is located after the data sheet in this section of the report. The bullets below highlight changes to the 2012 Legislative Impact Statement Sheet.

- One impact statement sheet will be created for this legislative session. In the previous session, seven impact statement sheets were created, with one to represent each Kan-ed geographical region.
- Impact statements from state agencies (e.g., Kansas Hospital Association, State Library of Kansas) are included. In previous sessions, statements were included only from Kan-ed members (e.g., individual school districts and hospitals).

Impact Stories

Kan-ed impact stories are one-page editorial style articles that describe the impact of Kan-ed, usually on one specific member (i.e., a school district, library, etc.), multiple members within one constituent group, or a partnership between members of different constituent groups. The purposes of creating these impact stories are to 1) document the impact of Kan-ed services on its constituents, 2) create eye-catching articles that can be distributed to legislators and other stakeholders to provide evidence of the impact of Kan-ed on its constituents, and 3) to educate Kan-ed members on how services can be used. The impact story provides a description of Kan-ed impact that is more detailed than an impact statement. During the legislative session, each legislator will receive an impact story along with their data sheet and impact statement sheet. An example of an impact story is located at the end of this section.

Senator Stephen Morris - District 39

Some of the Ways Your Constituents Benefit from Kan-ed



Based on the zip code of each organization, there are 35 Kan-ed members and 102 sites in Senate District 39.

Organization Name (sites) ³	Funding Distributed To/On Behalf of Member ¹	Connected to Kan-ed 2.0 ²
Higher Education Institutions		
Garden City Community College (1)	\$71,887	Yes
Hospitals		
Bob Wilson Memorial-Grant County Hospital (1)	\$31,949	Yes
Hamilton County Hospital (1)	\$32,744	Yes
Kearny County Hospital (1)	\$31,394	Yes
Morton County Health System (1)	\$11,386	No
Satanta District Hospital (2)	\$37,021	Yes
St. Catherine Hospital (1)	\$28,871	Yes
Stanton County Health Care Facility (1)	\$21,690	Yes
Stevens County Hospital (1)	\$26,180	No
K-12 School Districts		
Cimarron-Ensign USD 102 (3)	\$11,252	Yes
Copeland USD 476 (3)	\$29,912	Yes
Deerfield USD 216 (4)	\$16,887	Yes
Elkhart USD 218 (6)	\$22,752	No
Garden City USD 457 (20)	\$56,723	Yes
High Plains Educational Cooperative District #611 (1)	\$0	No
Holcomb USD 363 (5)	\$16,887	Yes
Hugoton Public Schools USD 210 (5)	\$26,437	Yes
Ingalls USD 477 (3)	\$18,252	Yes
Lakin USD 215 (4)	\$9,752	Yes
Leoti USD 467 (3)	\$4,135	No

Organization Name (sites) ³	Funding Distributed To/On Behalf of Member ¹	Connected to Kan-ed 2.0 ²
Moscow Public Schools USD 209 (3)	\$6,900	No
Rolla USD 217 (3)	\$13,887	Yes
Satanta USD 507 (3)	\$16,135	No
Stanton County USD 452 (4)	\$3,000	No
Sublette USD 374 (4)	\$13,846	No
Syracuse USD 494 (3)	\$4,135	No
Ulysses USD 214 (5)	\$23,887	Yes
Libraries		
Dudley Township Public Library (1)	\$10,352	Yes
Finney County Public Library (1)	\$5,835	No
Grant County Library (1)	\$5,323	No
Hamilton County Library (1)	\$26,050	Yes
Kearny County Library (1)	\$7,869	Yes
Morton County Public Library (3)	\$23,604	Yes
Stanton County Library (1)	\$21,793	Yes
Stevens County Library (1)	\$45,015	Yes
Totals: 35 members and 102 sites	\$733,743	23 of 35 (65.7%)

¹ Funding distributed to/on behalf of the member does not reflect overall benefits received through Kan-ed. This funding amount represents funds sent directly to the member as well as funds provided on behalf of the member to other organizations, such as to their Internet Service Provider (ISP) to offset costs of connections to the network; however, this funding amount excludes much of the amount necessary for network infrastructure and administration.

² A status of "in process" indicates that the member has not made the final decisions necessary to complete their connection to Kan-ed 2.0.

³ K-12 organization names and number of sites are determined by the 2011-2012 Kansas Educational Directory. All other organization names and number of sites are determined by the Kan-ed Annual Member Record Update and Member Verification.

Senator Stephen Morris, District 39

What Constituents in Kansas are Saying about Kan-ed

"We are working to provide **the best education for our students for the least amount of dollars**, and the telecommunications services, network access and bandwidth provided through Kan-ed contribute in a significant way to our ability to accomplish this goal. When we combined the districts USD 441 and 488 we created **a greater need for distance learning** as we reduced teaching positions while expanding the services area to 543 sq. miles. Through Kan-ed we are able to **provide courses to all buildings via distance learning technology**." ~Superintendent, Prairie Hills USD 113

"I have talked with many Kan-ed members over the past months and heard many stories about how **Kan-ed is helping them provide access in delivering health care, serving needs through our public libraries, and providing essential services in the delivery of education**. This has certainly reinforced for me **the need for Kan-ed** and highlights its **value to our state and especially underserved and rural communities**." ~President, Kansas Board of Regents

"The rural nature of our state coupled with the anticipated health care workforce shortages in future years makes expanding telemedicine programs in Kansas imperative. Telemedicine allows patients in **rural communities to access specialized physicians** without time consuming and costly travel. **Kan-ed has jump started expansion of telemedicine** by enabling many hospitals to take advantage of the benefits provided by using video conferencing equipment. Kan-ed is providing **more than just broadband internet access** to our member hospitals. Kan-ed provides a **highly reliable, secure, user friendly platform** for telemedicine... If there is no "network", Kansas hospitals could expect to see increased line charges, decreased network security, decreased reliability/quality of service and decreased collaboration among stakeholders." ~Senior Director of Education, Kansas Hospital Association

"Approximately 4 out of 10 Kansas **public libraries provide Internet access**, at no charge, to their community members through Kan-ed connectivity (T-1 line)... **Kan-ed services are vital** throughout the state. They are **particularly crucial in rural areas**.

- Kansans utilize library broadband for a number of services, including filing income tax, searching for jobs, downloading e-content, and taking online courses. **If libraries lose their connectivity, many Kansans will be without any means to connect to these services.**
- As the economy has worsened, library use has increased dramatically... Libraries are offering more and more **tools to assist** their users including **job help** and **courses online** so the need for reliable, fact connectivity is increasing." ~State Librarian, State Library of Kansas

"There has been much talk recently about encouraging people to relocate to rural communities. When families and businesses are considering relocation, the quality of the local health care system is typically a key decision factor... The services provided by Kan-ed help ensure that our rural communities have **the same access to health and education services** as urban areas. **It is a small investment to assure that our rural areas continue to be able to compete and the urban/rural divide does not continue to grow.**" ~Senior Director of Education, Kansas Hospital Association

"The Kan-ed network is much more than a website – it **provides the infrastructure and connectivity** for us to connect, and through the statewide contract negotiate circuit costs that would very likely be significantly higher – not just for our district, but for all of the K-12 members who currently secure telecommunications circuits through Kan-ed... Undeniably, **the services provided to K-12 by Kan-ed cannot be replicated at the local level at the same price**. The implication for us is simple – it is mission critical to leverage the statewide network to offer Interactive Distance Learning courses for students, and **to secure affordable telecommunications costs on behalf of all the Kan-ed members.**" ~Superintendent, Prairie Hills USD 113

Note. This document includes select statements presented by Kan-ed members and affiliate organizations during legislative interim committee meetings held in fall 2011.

South West Kansas Community Colleges Share Courses on Kan-ed Network



Three community colleges in South West Kansas are partnering to expand course offerings in advanced mathematics by offering the courses online through interactive distance learning (IDL) over the Kan-ed network and rotating the teaching of the courses between the colleges. Garden City Community College (GCCC), Seward County Community College (SCCC), and Dodge City Community College (DCCC) are making Calculus II, Calculus III, and Differential Equations available to students who typically would not have access to all of these options.

Phone: 785-296-0843
Email: kan-ed@ksbor.org
<http://www.kan-ed.org>

In fall 2010, GCCC Calculus instructor Sergio Fagúndez offered Calculus III to five students in his classroom and two additional students at SCCC who connected over video. In the same semester, students at GCCC and DCCC are taking Calculus II from an instructor at SCCC, while DCCC is offering Differential Equations. Fagúndez also will offer Calculus III to all three colleges next semester, in spring 2011; then, he will rotate to teaching Calculus II or Differential Equations the following school year.

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Fagúndez noted that this collaborative system is working well for providing advanced math opportunities to the institutions whose course enrollment would otherwise be too low to justify having a separate, on-campus class. He stated, "It gives many students, who in the future are going to be very productive citizens, a chance to have this knowledge by taking this class. Without it [IDL], they wouldn't have access locally to any advanced math class at all."

Fagúndez described the students enrolled in these classes as those who are "looking for a major in engineering, something with very high qualifications," and he noted that the only way these students can complete their advanced mathematics requirements at the community college is through IDL. He pointed out the effectiveness of the format, saying that the grades of the distance students do not differ from those receiving their instruction in the classroom. Like students in the classroom, those connecting by video have opportunities to ask questions of the instructors, and outside of class time, they also have access to the instructor through email and telephone.

Fagúndez indicated that instructing via distance learning is a novel experience for him that is working out well for both the instructors and their students. "I'm really happy with it; it's a new experience, and I'm enjoying it. I think it's really good for the students to have the chance to have these classes."



"Without it [Interactive Distance Learning], they wouldn't have access locally to any advanced math class at all." -Sergio Fagúndez, GCCC Instructor