

California K-12 High Speed Network

Status Report

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Prepared By:

Imperial County Office of Education (LEA)

Butte County Office of Education

Mendocino County Office of Education

School Services of California, Inc.



Table of Contents

EXECUTIVE SUMMARY	1
Scope	1
Methodology	2
THE STATUS REPORT	3
Project Accomplishments	6
Management Structure	6
Independent Performance Evaluation Report	9
Network Operations and Management	9
California K-12 High Speed Network Statistics: Overall Connections.....	9
Project Activities in 2004-05	11
Statutory Governance Structure	11
Provision of K12HSN Services	11
Innovation Projects	14
"Round 2" Implementation and Funding	17
Database Development	19
K12HSN Website	19
Annual Evaluation Plan	19
Cost Analysis of Connecting Additional Schools	22
Cost to Connect Schools Not Currently Connected	22
Annual Revenues for Project.....	24
Project Expenditures to Date	25
Three-Year Budget Projections	27
Three-Year Budget Narrative	30
Assumptions and Budget Approach	30
Revenues.....	30
Expenditures.....	30
Annual Savings to Local Agencies	33
Local Agency Uses of Network.....	33
Possible Savings to Local Agencies.....	34
Multi-Year Commitments and Assets Owned.....	35
Response to MGT Findings.....	36
Conclusion.....	39

Executive Summary

This report is presented as a requirement of the 2004 Budget Act in SB 1113 (Chapter 208/2004). Item 6110-182-001 of the 2004 Budget Act requires the lead agency for the California K-12 High Speed Network (K12HSN) to provide two reports to the fiscal and policy committees of the Legislature, the Department of Finance (DOF), the Legislative Analyst's Office (LAO), and the California Department of Education (CDE) as follows:

- 1) Since an audit had not been approved by August 31, 2004, by the Joint Legislative Audit Committee, the lead agency contracted with an independent consultant to provide a report on the K-20 Internet system administered by the Corporation for Education Network Initiatives in California (CENIC) and the Digital California Project since its inception, as well as long-term projections and analyses of alternatives for the network in the future. This report was completed and submitted on March 1, 2005, by MGT of America, Inc. (MGT).
- 2) A status report of the K12HSN, providing information on project activities and accomplishments, annual revenues and expenditures, K-12 uses and related savings to local agencies, cost effectiveness of connecting additional schools, and additional information as prescribed by the legislation.

The following report serves as the program's status report as required by legislation. The content of this report addresses the items specified in SB 1113 and other items as requested by the DOF and the LAO.

The lead agency consortium currently responsible for managing the K12HSN project consists of four agencies: Imperial County Office of Education (ICOE), Butte County Office of Education, Mendocino County Office of Education, and School Services of California, Inc. (SSC).

Scope

The lead agency consortium for the K12HSN prepared this status report to include, at a minimum, the following elements as required by SB 1113:

- a) Project accomplishments to date
- b) Project activities underway or planned for the 2004-05 fiscal year
- c) Proposed activities, including a three-year budget plan assuming current service levels

- d) The cost effectiveness of connecting schools not currently connected, as compared to other alternatives
- e) Annual revenues from all sources for this project (including General Fund, E-Rate, California Teleconnect Fund, and other revenues)
- f) Expenditures to date in support of these projects (including all costs for the lead agency, such as personnel, contracts, circuits, hardware, and software)
- g) An estimate of the annual savings to local education agencies as a result of the project
- h) Information regarding any multi-year commitments that exist and any assets owned by the state or any other public agency in connection with the Digital California Project

The review also includes findings, recommendations, and actions taken to address the findings identified.

Methodology

This report was developed by reviewing documents from the lead agency consortium, MGT of America, Inc., state agencies, CENIC, network users, and other sources as needed. The documents reviewed included authorizing budget bill language, CENIC financial statements, MGT's performance evaluation report, lead agency policies, project plans and budget information, and other current project documentation.

In addition to reviewing documentation, we interviewed various individuals with significant involvement in the project, as well as network users, and technical staff to augment the information from the documentation and to provide a more thorough analysis for the provisions of this report.

The Status Report

As part of the 2004 Budget Act in SB 1113 (Chapter 208/2004) the Legislature transferred funding and responsibility for the management of the K12HSN from the University of California to a lead county office of education. Through a competitive grant process the Imperial County Office of Education (ICOE) and its partners (Butte County Office of Education, Mendocino County Office of Education, and School Services of California, Inc.) were selected to lead the project in 2004-05, with an award being announced September 21, 2004.

In addition to bearing responsibility for the management of the K12HSN, ICOE was directed to provide two reports:

1. ***Independent Evaluation of the Digital California Project***—The lead county office of education was required to select and oversee an independent consultant to complete an evaluation of the management of Digital California Project's (DCP)¹ funds, assets, and network uses. Through a competitive procurement process, ICOE selected MGT of America, Inc., in December 2004 to complete this report. MGT's report was released on March 1, 2005.
2. ***Status Report***—ICOE was also required to prepare a status report in consultation with the Department of Finance and Legislative Analyst's Office that addresses activities, accomplishments, findings, and recommendations based on ICOE's experience as lead agency of the K12HSN. This report fulfills this requirement.

The two reports are distinct, but related. The primary focus of the independent evaluation was on the past experience of the DCP/K12HSN prior to ICOE's role as lead agency. The status report is expressly focused on the K12HSN following ICOE's selection as lead agency.

The independent evaluation of the DCP raised several concerns regarding CENIC's management of DCP/K12HSN resources. The evaluation team noted several instances where the financial and program management of DCP resources lacked transparency and/or adherence to industry practices. Notable findings from the evaluation include:²

- CENIC recognized a \$6 million prepayment of DCP funds in 2003-04 as a current year expense rather than spreading the expense over succeeding years, as is prescribed by generally accepted accounting principles.

¹ The Digital California Project is what the K12HSN project was referred to when it was under the direct management of the Corporation for Education Network Initiatives (CENIC). Once the management of the project was transferred over to ICOE, it was referred to as the K12HSN project.

² "Performance Evaluation of the K-12 High Speed Network," MGT of America, March 1, 2005.

- The Legislature appropriated more than \$92.6 million for the DCP from 2000-01 through 2003-04. Of this amount, CENIC reports spending \$76.3 million to deploy and maintain DCP, offset by the capitalization of \$6.3 million. Of the \$22.6 million difference, CENIC transferred just over \$14.2 million from the DCP to CENIC's accounts, leaving \$8.4 million available to DCP.
- The assets that CENIC reports pertaining to DCP as of June 30, 2004, do not include \$22 million in equipment and other fixed assets that were purchased with DCP funding because CENIC claims these were purchased by CENIC under a service agreement relationship.
- Despite providing approximately 56 percent of the total revenues to CENIC from 2000-01 through 2003-04, California's K-12 community has not and does not have decision-making authority, such as representation on the CENIC Board of Directors.

ICOE and its partners have worked over the past six months to ensure that services continue uninterrupted to the 7,039 schools, 887 districts, and 4.8 million students who are currently served by the K12HSN. At the same time, the consortium needed to implement project and financial management improvements. During this time, ICOE has negotiated an arrangement for services with CENIC and found CENIC to be generally responsive and cooperative under the new K12HSN management structure.

As was noted in the ICOE proposal to the California Department of Education for the role as lead agency, ICOE and its partners are committed to the following core principles:

- **Stewardship**—The consortium [ICOE and its partners] will act with integrity and efficiency on behalf of and as an agent for all California offices of education, schools, and the education community in general.
- **Collaboration**—The consortium will work together as a single educational unit toward common goals.
- **Transparency**—The consortium has a strong commitment to an open process, with information and decisions available for public review.
- **Agility**—The consortium will respond quickly to both planned and unforeseen forces impacting education and the program.

We believe the transition from CENIC to ICOE has been smoothly executed due in large part to the commitment of the consortium to the described core principles. This report describes in detail accomplishments since the management of the K12HSN was transferred; detailed plans,

including a three-year budget, for ongoing operation of the K12HSN; and actions or planned actions that address problems that have been identified.

Under ICOE's leadership, the K12HSN is being managed much differently than it was in the past. This heightened accountability will be apparent throughout this report. Major changes include:

- ***Increased Transparency***—As a governmental entity, ICOE is subject to public reporting requirements that CENIC was not subject to as a nonprofit entity. In managing the K12HSN, ICOE developed a system to accept input and broadly share information that was not in place previously. Further, the activities, progress on projects, and finances of the K12HSN are available to any interested parties on the K12HSN website, www.k12hsn.org.
- ***Increased Accountability***—ICOE has established a governance structure that includes both external and internal stakeholders who meet regularly to review the progress of the project. In addition, ICOE has contracted an independent evaluator to monitor and report on the project's ability to achieve expected outcomes. To facilitate the various reviews that are part of the project's accountability, industry accepted standards for project management and financial management are followed. Annual reports will be made to oversight agencies, stakeholder groups, and constituents.
- ***Direct Representation***—As an educational entity, and given their prior experience in cooperatively creating a fiber Wide Area Network in Imperial County, ICOE is intimately familiar with the high speed network needs of the K-12 community and has created several methods by which input from the K-12 community is collected and considered as plans for the future of the network are developed.
- ***Aggregation of Interest***—Under ICOE's leadership, the K-12 community has significantly increased its voice in the management of the K12HSN. With ICOE at the helm, the interests of the community are aggregated and organized in a manner that translate into services and support that meet immediate and future needs within the education community.
- ***Focus on Sound Fiscal Management***—Several issues were raised in the independent performance evaluation of the DCP in the area of the financial management practices employed by CENIC. Under CENIC's management, large reserves were established, prepayments were made, unexpended revenues were not recorded as balances, and asset accounting was not advantageous to DCP. As will be apparent in this status report, it is an important goal of ICOE to accurately represent the K12HSN resource needs.

Our detailed analysis of the K12HSN project involved investigating all of the elements as required by the legislation and providing findings and recommendations related to these elements. We have also included further analysis that we believe will inform the stakeholders of the project and the recipients of this report. For each element analyzed, this report contains a discussion of the current status, year-to-date information, and plans and projections for the future. This report also contains findings and recommendations for improvement, and any activities already undertaken to address the findings.

Project Accomplishments

ICOE and partners conduct business using generally accepted project management principles. These principles include evaluating needs, formulating a plan that details the scope of the work, the resources to be allocated, the time frame within which the work needs to be completed, and steps to monitor progress that facilitate continuous improvement. In applying these principles to the operation of the K12HSN, the ICOE consortium developed project plans for each component of the work to be accomplished. The projects that are currently operating on their own individual plans are: Network Implementation Committee (NIC), Applications Coordination Committee (ACC), E-Rate and CTF project, Last Mile Grant project and the Statewide Video Conferencing project. The plans developed for each of these areas include descriptions of the work, goals and objectives, a timeline, and a budget.

In the project management model employed by ICOE, project plans are revisited monthly. The Executive Management Team is asked to approve any revisions to the plans that are made necessary or are helpful as the work progresses. Records of the decisions made are maintained and posted to the website.

MANAGEMENT STRUCTURE

The ICOE consortium organized several groups to make decisions, provide focus and structure, and to carry out the work of the K12HSN. These groups include the Executive Management Team (EMT), the Program Management Team (PMT), the NIC, and the ACC. In addition, the consortium is investigating the need for and approaches to a Statewide Technology Leadership Committee.

Executive Management Team—The EMT provides the overall direction for the ICOE consortium, oversees the general operation of the program, and approves all project plans. The team governs all major program policies and provides feedback and direction to the Program Management Team. The EMT approves the overall budget for the K12HSN and funding levels for its Innovation Projects. The team consists of the superintendents of each of the three county offices of education (Imperial, Butte, and

Mendocino), the president of School Services of California, and staff key to the project. The Chief Executive Officer of the K12HSN is a member of the ICOE staff. The EMT has convened monthly since October 2004, just weeks after the consortium was awarded the contract from CDE.

Program Management Team—The PMT is led by the CEO of the K12HSN and is responsible for the day-to-day operations of the program. The team members are located in the three county offices of education that constitute the ICOE consortium. ICOE provides the CEO and the K-12 Outreach Director. Butte COE provides the Director of Network Services, and Mendocino COE provides the Director of Grants Management. In addition, School Services of California, located in Sacramento, provides additional management support.

Network Implementation Committee—This committee provides technical advice and feedback to the project, with its members acting as the communications link between the project and their regional constituencies. Currently, the NIC is a continuation of the Network Liaisons established to support the Digital California Project. Present members consist of the former 11 Regional Liaisons that served CENIC. (These regions correspond to the California County Superintendents Educational Services Association [CCSESA] service regions.) A new process for NIC membership will be implemented in order to seat the permanent NIC effective July 1, 2005. Applicants will be solicited from regional and district technology experts for their qualifications in a variety of technical areas. In addition, representatives from interested stakeholder groups will be included, with members appointed for two-year terms.

Applications Coordination Committee—Included among the responsibilities for the lead agency managing the K12HSN was responsibility for “promot[ing] Network usage and facilitat[ing] partnerships and grant proposals that support Network usage.”³ The ACC was formed in part to fulfill this responsibility. This committee’s charge is to improve the impact of the K12HSN on teaching and learning in the K-12 community. The K12HSN used a broad, inclusive process to select and seat members of the ACC. The ACC assists the K12HSN with issues related to application content, including housing/hosting content, delivery models, and portal discussions. The committee comprises representatives of the 11 regions throughout the state, and they serve two-year terms. Other members have been added to represent higher education, CDE, the Curriculum Development and Supplemental Materials Commission, and other interested stakeholders. For the current year, the ACC will identify demonstration sites and innovative applications that utilize the network. The committee will also develop an

online database of exemplary applications that require the K12HSN in order to promote the dissemination and use of these “best practices.”

Statewide Technology Leadership Committee—This committee is still being formed, and the procedures through which it will provide input to the EMT and the K12HSN are under development. The broad purpose of this committee is to provide leadership for K-12 education technology and assist with the coordination of various technology initiatives designed to support teaching and learning. The committee is expected to be formed through the joint efforts of the K12HSN and CCSESA.

Overseeing the fiscal matters of the K12HSN is the ICOE, the lead agency that received the grant award from the CDE to represent the interests of the K-12 community in high speed connectivity. The governing board of the ICOE has oversight of the K12HSN budget as a component of the overall ICOE budget. ICOE, acting as the local education agency grant recipient, has sole responsibility for the fiscal integrity of the program and all K12HSN contracts are let through ICOE.

By its very structure as a county office of education, the functions of authorizing expenditures and recording expenditures are separated. Authorizations occur within the “K12HSN department” with requests being forwarded to the Chief Executive Officer, then moving to the Internal Business Department. The processing of purchase orders and payroll adhere to generally accepted accounting procedures. Expenses are authorized by purchase order and encumbered, shipping and delivery receipts are tracked and maintained, an inventory of goods of sufficiently high value (\$500 or more) is maintained, and payment is made upon verification that goods or services were received.

To enhance the ability of ICOE to report on the finances of the K12HSN with ease and to ensure they are adequately separated from other ICOE business, a new “district” was established in ICOE’s accounting structure. In the same way that ICOE passes through revenues intended for its independent districts, the K12HSN has entirely separate reports and the capacity to report to the same degree of certainty and specificity of any school district in California. This includes the capacity of the CDE and other agencies to access information on the K12HSN directly, using California’s Standardized Account Code Structure (SACS) format.

ICOE undergoes an independent audit on an annual basis, with audit reports being reviewed by the Board of Trustees and findings addressed in an appropriate fashion. The independent auditors’ report is reviewed and approved by the Board of Trustees annually by December 15. In the three most recent audit years, ICOE has not had any findings in its annual audit.

³ California Department of Education, “Request for Applications For Lead Agency for the California K-12 High Speed Network,” (August 2, 2004).

ICOE uses a single-budget adoption cycle, which means that its “estimated actuals” for the current year and proposed budget for the subsequent year are reviewed and approved by the Board of Trustees by June 30 of each year. By September 15 of each year, the “unaudited actuals” for the year just closed and the proposed budget for the (new) current year are also reviewed and approved by the Board. Budget revisions are developed, submitted to the Board, and approved a minimum of two more times during the year—by December 15 and by March 15.

Similarly, the ICOE County Superintendent has the ultimate responsibility for staffing, contracting, administrative policies, and procedures as they relate to the administrative operations of the K12HSN grant under ICOE. The CEO for the K12HSN reports directly to the ICOE Superintendent.

INDEPENDENT PERFORMANCE EVALUATION REPORT

In accordance with the language included in the 2004-05 Budget Act, ICOE contracted with an independent consultant—MGT of America—to provide a performance evaluation of the K-12 Internet system administered by CENIC. This 99-page report was submitted to the Legislature on March 1, 2005 and is available online at <http://www.k12hsn.org/evaluation>.

NETWORK OPERATIONS AND MANAGEMENT

The K12HSN is now deployed statewide in all 58 California counties. K12HSN staff and the NIC members have established an improved data reporting and verification process to assess K-12 connectivity. This information can show which county offices, districts, and schools are connected to the K12HSN. The network now includes 74 nodes across 11 Local Access and Transport Areas. ICOE’s improved reporting and verification process shows that an additional county office of education, 81 new districts, 1,719 new schools, and 641,585 new students have been added to the K12HSN in 2004-05. There are now an estimated 7,039 schools (or 74%) and 887 school districts (or 89%) connected to the network, as well as all 58 county offices of education. In total, roughly 4.8 million (or 80%) of California’s students have either direct or indirect services from the K12HSN.

California K-12 High Speed Network Statistics: Overall Connections

Entity	2003/2004 on DCP			2004/2005 on K12HSN			Change		
	Number	Percent	Enrollment	Number	Percent	Enrollment	Number	Percent	Enrollment
County Offices	57	98.3%	67,761	58	100.0%	67,777	+1	+1.7%	+16
Districts	806	81.0%	4,398,381	887	89.1%	4,845,598	+81	+8.1%	+447,217
Schools	5,320	56.1%	4,150,678	7,039	74.2%	4,792,263	+1,719	+18.1%	+641,585

Total Sites	6,183	58.7%	4,150,678	7,933	75.3%	4,792,263	+1,750	+16.6%	+641,585
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For the current year, high speed network connectivity is provided to K-12 education through a contract with CENIC. This service contract is operative from December 1, 2004, through June 30, 2005. Since ICOE entered into this contract for access to the backbone (the DCP network), there have been minimal impacts on the network and few, if any, interruptions in service. Management of traffic on the backbone has been effective, in large part due to the limited usage imposed by K-12 customers relative to the capacity of the network.⁴ ICOE has submitted four requests for replacement of back-up batteries. There have been no other equipment replacement requests since the transition.

To ensure prudent management of the network, the consortium has sought access to backbone equipment to collect meaningful utilization information. CENIC has agreed to provide passwords and access information. ICOE and its partners expect to begin using advanced network management software in early April. The NIC has planned a multistep process to bring data-driven recommendations to the EMT. More complete utilization data will identify key areas that may require modifications to the network, such as where the system is overbuilt or where utilization is beginning to put pressure on existing capacity. This information will then be used to guide decisions on the capacity and timing of any potential circuit changes.

Initially, many county office/school district node sites were unaware of, and confused by, the change from CENIC and DCP to K12HSN. They were not aware of the Legislature’s interest in this project and some expressed a desire to maintain the status quo. Direct communications between K12HSN staff and node operators have provided the opportunity for ICOE to explain the goals of making the K12HSN more accountable, responsive, inclusive, and transparent. K12HSN staff and representatives are attending meetings in each region and are using a new list-serve to facilitate communications with all node sites. A statewide training for all node site representatives is in the planning stages.

Conversations were also undertaken between ICOE and CENIC to address two community college sites that have been considered part of the K-12 network of node sites. After investigation, it has been determined there are cost savings to both Community Colleges and K-12 to share connectivity to the state network. Thus, appropriate cost sharing arrangements are being negotiated with CENIC and the Community College system.

⁴ MGT noted in its evaluation of the K12HSN that, based on available data, the K12HSN has surplus capacity. ICOE’s utilization study (see description on following page) will include an analysis of utilization to support efficient allocation of resources.

Project Activities in 2004-05

STATUTORY GOVERNANCE STRUCTURE

The ICOE consortium has sponsored legislation to establish the broad governance structure for the K12HSN. Assembly Bill 1228 (Daucher) was introduced on February 22, 2005. The measure articulates the following three goals that the governance structure should accomplish: (1) development of a long-term information technology, implementation, and business plan for the program; (2) ongoing cost oversight of the program, including mechanisms to control statewide costs and exposure; and (3) ongoing technical oversight of the program, including external evaluation and independent validation and verification, where appropriate. These goals mirror the language contained in the 2004-05 Budget Act, which calls for a statutorily established governance structure to oversee the K12HSN.

The ICOE consortium proposes that the governance structure be reflected in a seven-member board, with the K-12 lead agency and its county office of education partners each having a permanent seat on the board, so long as they are members of the lead agency team. The other four seats would be appointed by the State Superintendent of Public Instruction, with one seat selected from county offices of education in Class I, II, or III, and three seats representing K-12 school districts. The appointed seats should, to the extent practicable, be representative of the state as a whole, reflecting the broad geographic, size (as measured by ADA), economic, and ethnic diversity of the local education agencies throughout the state. The appointment of new members recognizes that the current lead agency members are generally small rural county offices of education. The appointed members would serve two-year terms.

The governing board would meet at least four times per year and would oversee operations of the lead agency and its partners and provide general policy direction for the program. The board would have responsibility for adopting the K12HSN budget, contracting for an independent audit of K12HSN operations, and providing annual reports on the status of the network and its various projects to the Legislature, the Administration, and the general public. The annual reports would provide information related to internal control procedures, the project's financial condition, connectivity of California schools, and uses of the K12HSN as they affect teaching and learning throughout the state.

PROVISION OF K12HSN SERVICES

Through the current year, ending June 30, 2005, high speed network connectivity for K-12 education has been secured through a contract with CENIC. As has been pointed out in the MGT report, there are several shortcomings in the current contract with CENIC. These include the absence of a service level agreement (SLA) to specify the quality and quantity of services, lack

of data to monitor network usage, incomplete accounting of E-Rate and California Teleconnect Fund (CTF) funding, and incomplete information on costs that are shared by network users. These shortcomings notwithstanding, ICOE will pursue an interim (possibly six-month) extension of the current contract with CENIC to ensure that services remain available. During this time, ICOE is also negotiating with CENIC to address the issues identified by MGT.

One of the key recommendations of the MGT report for the lead agency of the K12HSN called for the issuance of a request for proposal (RFP) to determine the cost effectiveness of continuing to receive high speed network connectivity through CENIC. While ICOE agrees in principle that the issuance of an RFP will result in proposals from alternative service providers, there are several critical steps that must be undertaken prior to issuing an RFP, and other factors that must be weighed while evaluating the alternative proposals. Below we discuss the major considerations that the ICOE team will be evaluating as it seeks to secure high speed connectivity for the future.

Understanding the Status of the Network—Utilization and Design Analysis

Prior to considering an RFP for K-12 network services, a necessary first step is to conduct a comprehensive analysis of utilization and network design. Given the time constraints and limited access to data, MGT was unable to conduct a thorough analysis of the specific requirements and design elements of the K-12 network for both short- and long-term needs. Additionally, the MGT report recommended that the K-12 network have clear Service Level Agreements (SLA) with CENIC or any other provider.

In order to accurately specify the requirements for both a potential RFP and for any SLA, ICOE will conduct a comprehensive evaluation and analysis of the network. (Funding for this activity is described in the detailed budget narrative, see page 31.) The utilization analysis will reveal the quantity of traffic on the primary circuits, downtime of the network or portions thereof, quantity of traffic on redundant circuits, whether node sites are appropriately serving other “down-line” clients, usage trend analyses, and identification of circuits that should be upgraded or downgraded, as needed. This independent analysis will provide critical information that will be required to develop a well-specified RFP for a high speed network alternative to CENIC. This study will be conducted later this fiscal year or early next fiscal year.

Other Considerations in Securing High Speed Network Services

- ***E-Rate and CTF Revenues***—ICOE projects revenues realized through E-Rate/CTF discounts at \$3,300,000 annually. It is important to be aware that any change in network providers may potentially jeopardize these revenues if applications are not coordinated and closely aligned with discount program rules and filing timelines. For example, to transition from CENIC to another provider commencing in 2006-07 and protect K-12’s

share of discount revenues, a final decision to make such a change must be made no later than November 2005 in order to submit applications for changes to be effective by July of the following year. Any changes made outside of this cycle would jeopardize E-Rate discounts.

- ***CENIC Board Representation***—One potential option is to have K-12 representatives join CENIC as a full Charter Associate, similar to the University of California, California State University, and Community College systems. This option could provide the following potential benefits for the K12HSN:
 - It may resolve asset ownership issues identified in the MGT report
 - It may provide the K12HSN with equal representation on the CENIC Board, thus having influence on decision making
 - It may provide for stability and continued operation of the network and services to the K12HSN
 - It may support continued K-20 collaboration

A detailed analysis of the relationship and issues would need to be conducted.

- ***Disposition of Balances, Prepays, and Equipment Reserves***—Any change to the network infrastructure and/or network provider will likely generate significant start-up costs through equipment, circuit installations, or other related transition expenses. For these reasons, the balances of K-12 funds appropriated for the DCP and currently held by CENIC should be considered a significant factor in determining the future of the network. If these funds remain with CENIC or are returned to the state, it may be difficult for the K12HSN to reasonably pursue certain options due to start-up and transition costs. In addition, equipment will have to be replaced in the near future. The equipment replacement reserves currently held by CENIC are an important part of the network's sustainability. As detailed in the MGT report, the \$6 million prepay for backbone services expensed by CENIC now results in a \$1.2 million decrease in the cost of services from CENIC for each of the next four years. If the accounting treatment is determined inappropriate and CENIC is compelled to return these funds to the state, K12HSN will likely face a direct cost increase of \$1.2 million each of the next four years.
- ***Fiscal Impact on Other Segments***—Any decision by the K12HSN may have a fiscal impact on the CENIC higher education segments. While this impact is not the K12HSN's primary concern, these other segments represent public institutions relying on state

funding. If the K12HSN were to cease contributing to CENIC's operation, the revenue shortfall may have to be made up by increased charges to the remaining institutions.

- ***Cost Effectiveness in Future Years***—While there may be alternative service providers to CENIC whose charges would offer an equal or better value than CENIC based on today's utilization, it is unclear whether these advantages will continue as demand and network usage grow. As K12HSN traffic continues to increase, other service delivery models may become cost prohibitive. This relationship between value and usage growth will be evaluated in the scope of the Utilization and Design Analysis (see page 12 for more detail).
- ***Other Models of K-20 Collaboration***—CENIC currently coordinates the K-20 networking initiative in California. Significant public funding from the various higher education segments and K12HSN appropriations are passed to CENIC, a California nonprofit corporation. K12HSN may seek to work with the higher education segments to evaluate the effectiveness and appropriateness of this model as opposed to other models that may effectuate the vision of a public networking initiative, possibly to include other state and/or public agencies.

Whether to continue K12HSN's relationship with CENIC or to secure network connectivity from another provider is a complicated issue. A thorough analysis of the significant issues outlined, as well as others that surface during the next few months, will assist in making a prudent, informed decision about service providers. ICOE will be working with policymakers to review these issues and provide guidance for next steps.

INNOVATION PROJECTS

ICOE has identified several Innovation Projects that would further the broad goal of leveraging K-12 high speed network access to improve teaching and learning. These projects will be supported with one-time funds made available from the federal E-Rate program and the CTF. In addition, savings from a renegotiated contract with CENIC or from a new contract with an alternate service provider may be redirected to support these projects. Currently, five project areas have been identified:

Last Mile Grants—The Last Mile Grant project is designed to extend network connectivity to districts and school sites that are not yet connected to the K12HSN's node sites, typically a county office of education. There are many schools across the state, particularly in small and rural communities, that have not yet connected to the network or are connected at such slow speeds that they cannot take full advantage of the benefits of the network.

This project will provide financial assistance through project awards to local education agencies based on criteria that will include socio-economic factors, district capacity, existing connections, cost of the proposed project, and the ability of the recipient to sustain the connectivity after funding ends. Priority for awards will be given to school districts that are not currently connected to the network.

The grant project is currently budgeted at \$1.2 million. The project intends to release Requests for Applications by April 2005, with award announcements expected May 31, 2005. Members of both the NIC and the ACC will evaluate the proposals and make recommendations on the awards to the EMT.

The total \$1.2 million is to be divided into the following three categories of awards:

- \$600,000 to fund connections to the K12HSN for school sites and school districts where no connection or a connection of less than a T-1 previously existed
- \$300,000 to school districts to support innovative strategies that address impediments to last mile connections
- \$300,000 to school districts to upgrade the bandwidth connecting them to the K12HSN

Payments to grant recipients are expected to be made in June 2005 and each grant recipient will be responsible for submitting an end-of-grant report by July 2006.

The K12HSN plans to specifically evaluate the projects funded under the Last Mile Grant program. During the first six months of the 2005-06 fiscal year, node sites will report to the K12HSN any implementation problems or issues, and, by December 2005, the K12HSN will make informal contact with each grant recipient on the status of its projects. By September 2006, a random selection of 10% of the successful grant recipients will have been identified for visitation to evaluate the implementation of their proposals. Any project found to be out of compliance will be notified and a corrective plan will be provided by February 2007.

Last Mile Analysis—In addition to the grant program, the K12HSN developed a database to collect, store, and analyze information on the status and type of Internet connections of California's public schools. The information in the database is required to provide data for the annual Last Mile Report and the consortium E-Rate application. The report summarizes the status of Internet connectivity. The database is sufficiently robust to allow analysis of K12HSN connectivity with regard to a variety of socio-economic and educational factors, such as poverty, English Language Learners, ethnicity, geographic location, and urban/rural characteristics. Subsequent analysis will help to identify factors that prevent high speed access to the Internet and the K12HSN. In addition, the Last Mile Report will provide information on the readiness of

county offices of education, school districts, and schools to effectively use the K12HSN as an educational tool. This project is budgeted at \$90,000 for database and web development (\$80,000), printing and distribution (\$1,000), a dedicated file/web server (\$6,000), and staff travel (\$3,000).

Video Conferencing—A major initiative of the K12HSN is the enhancement of video conferencing capabilities statewide. K-12, through coordination with several county offices of education in California, has developed an increasing need for reliable and cost-effective videoconferencing capabilities since early 2001. In 2003-04 in Imperial County alone, there were 12,487 video calls on the network and an average monthly usage rate of nearly 512 hours.⁵

In April of 2003, CENIC embarked on a Video over IP project for the network. The immediate goal of the project was to support the current (H.320) environment for existing rooms and technology involved in Video Conferencing while integrating Video over IP into the environment.⁶ While K-12 participated in the planning of this project, it was determined that the project focused on the needs of higher education and was not sensitive to the significant scope and scale of implementation across K-12. According to the MGT report, CENIC charged K-12 a total of \$1,119,022 for services in 2003-04, or 27.5% of the total cost of the video services provided to all segments by CENIC. However, minimal services were provided to K-12 during this time.

For 2004-05, CENIC assessed a fee of \$420,000 in order for K-12 to continue to participate in its model of implementation. K-12, under the leadership of ICOE/KI12HSN, formed a Video Technical Advisory Committee (VTAC) to evaluate the services and implementation model against other options. It was the recommendation of this group to move forward with a compatible model that provides functionality, support, and scalability for K-12.

The K12HSN has developed its own multi-phased implementation plan to secure more cost-effective and reliable video conferencing via the network. The phases include (1) Development and planning; (2) Hardware/Software Research; (3) RFP Development, Review, and Procurement; (4) Installation and Training; and (5) Ongoing Support. A first-year budget of \$420,000 has been developed, which includes funding for video bridges, regional gatekeepers, network recorders, and materials and supplies. In addition, the project is utilizing up to \$925,000 of current year equipment replacement funds to purchase and distribute necessary hardware previously in the DCP plan but eliminated due to budget reductions in prior years. This equipment includes node gatekeepers, directory servers, and node site monitoring and management tools. The current timeline anticipates the placement of three sets of hardware for

⁵ Data for other counties is available; however, it is not collected in a manner to allow aggregate data to be presented. A system is being developed through K12HSN to collect statewide usage data for reporting.

⁶ Information from CENIC's website is available at <http://www.cenic.org/services/cvs/about.htm>.

centralized services (to include a Multiport Control Unit (MCU), Network Recorder, and Video on Demand server) on the network by June 2005.

The first-year budget is being used primarily for equipment as ICOE is contributing one full FTE Video Conferencing Specialist (per application to CDE) as in-kind to implement the project. In Year 2 and beyond, the \$420,000 project allocation is to provide support staff, training, and maintenance on equipment.

Development and Coordination of Applications and Content—The development and coordination of applications to be used on the network is largely the responsibility of the ACC. This committee and the NIC constitute the two standing advisory committees of the K12HSN. The ACC has primary responsibility for promoting the effective use of the K12HSN to improve teaching and learning. This focus brings the impact of the K12HSN into the classroom, where teaching, learning, and academic achievement are enhanced. The ACC is collecting and disseminating “Snapshots of Innovation,” an effort to depict the best practices and uses of technology and the network. The ACC is also supporting the development of demonstration projects by funding activities in a competitive process that will enhance applications of the K12HSN. The projects developed with this funding will be made available at no charge to K-12 agencies during the grant period. The Request for Applications in the Advanced Network Uses Program are expected to be released by the end of April, with awards made by the end of May, and funds distributed in June 2005. The committee has budgeted \$87,000 for the current year, which supports certificated management salaries (\$57,000), printing and distribution (\$3,000), meeting expenses (\$20,000), and travel expenses (\$7,000).

E-Rate—Working in conjunction with CCSESA, the K12HSN has secured Letters of Agency from 670 districts connected to the network that form a consortium to leverage E-Rate discounts. The K12HSN is working in collaboration with the Department of Education to provide technical assistance and support to school districts. These efforts are intended to help districts afford network connections and maximize the participation in the federal E-Rate program for California schools.

“ROUND 2” IMPLEMENTATION AND FUNDING

The first phase in securing high speed connectivity for K-12 education was accomplished through the Digital California Project (DCP) executed by CENIC. The DCP plan contained five components: network development, applications coordination, communications program, project management, and ongoing network management, operations, and support. CENIC was responsible for each of these areas. The phase one node sites were determined through a study conducted for CENIC by Science Applications International Corporation of San Diego. These

nodes serve as the “connector” locations for schools and districts to join the network and constitute “Round 1” of the connectivity plan.

Based on input from counties, CENIC established a second series of grant awards known as “Round 2” to support Network implementation needs. Funding awards for this second round generally ranged from \$20,000 to \$80,000. Of the 38 counties that submitted plans and requests for funding, some upgraded circuits, many focused on improving capacity for connectivity at node sites, many funded “last mile” connections, and some impacted both node capacity and last mile connections.

After being selected as the lead county office of education to implement K-12 connectivity, the ICOE consortium staff began to evaluate the process and implementation of the Round 2 program. This review revealed some program and administrative shortcomings, including:

- Lack of consistent understanding regarding the purpose and intent of the program
- Varying interpretations of the expectations of the program
- Special consideration provided to some counties/regions
- Significant differences in project scope and funding
- Inconsistent treatment of CTF and E-Rate discounts among the applications

These issues prompted the ICOE team to work with stakeholders to make appropriate changes to the program. Utilizing input provided from several focus group meetings, the NIC will be reviewing the feedback to present a recommendation to the EMT for action in April 2005. The ICOE consortium is contemplating discontinuing funding for Round 2 as a line item in the core operational budget in 2006-07. However, funding commitments to earlier successful grant applicants require that the Round 2 funds continue through 2005-06.

The termination of the Round 2 program, however, should not be interpreted as a sign that school site connections to the network are complete. The ICOE survey finds that 11% of the districts are still not connected to the network and it is likely that these districts are very much in need of technical and financial assistance to secure this connection. Moreover, the Utilization and Design Analysis that will be undertaken by a contractor this spring will provide information on the current and future capacity constraints of the network and areas of the network that will require additional funding. In addition, this analysis should shed light on the cost of connecting all remaining school sites to the network. Therefore, the ICOE budget contemplates the continued need to support connectivity, with the Last Mile Grant Program funded at the current-year level

through the next three years. Depending upon the need, funding that would have supported Round 2 grants in 2006-07 may be redirected to the Last Mile Grant program.

DATABASE DEVELOPMENT

The consortium team embarked on the development of a newly designed Last Mile Database that closely tracks the linkages between sites on the network. The K12HSN staff has been successful in establishing appropriate connections among data files to analyze numerous relationships. For example, schools and districts throughout the state use unique County-District-School (CDS) codes. These CDS codes link to other databases collected and managed by the California Department of Education. By connecting the Last Mile Database information to CDS codes, K12HSN staff, the NIC liaisons, and node site staff have developed a database that can be reviewed for accuracy and can be tied by CDS code to other data sets. The result is the capacity to query any combination of school data elements. As an example, the Last Mile Database can link school sites connected to the network to their Academic Performance Index or to their participation in the Free and Reduced-Price Lunch Program. The potential for other uses of the data is expansive and can potentially benefit the K-12 community in many ways.

K12HSN WEBSITE

As highlighted in its application to manage the K12HSN, ICOE and its partners are dedicated to transparency, inclusion, responsiveness, and good stewardship. The K12HSN website is one means by which staff conducts outreach, provides information, and meets the “transparency” promise. Interested parties can track the progress and accomplishments of the NIC and the ACC by reviewing the committees’ monthly activity reports on the website. The K12HSN budget is also available for review on the site, and Frequently Asked Questions provide answers to the inquiries that come up often. Mailing lists have been created and any interested person can ask to be included so that he or she receives an update whenever program announcements are made.

ANNUAL EVALUATION PLAN

The lead agency is currently conducting a comprehensive independent evaluation to monitor and measure all dimensions of the program and provide this information to CDE and all interested stakeholders. The evaluation is being led by Dr. Marcie J. Bober of San Diego State University, a nationally respected authority on evaluations of technology projects. While a formal interim or progress report will be submitted in April 2005, the team has already prepared and distributed several operational reports. These and other key evaluation documents are available for public review on the K12HSN website (<http://www.k12hsn.org/>). The year-end evaluation report, scheduled for completion on August 15, 2005, will also be available for public review on the K12HSN website.

The evaluation model—the Provus’ Discrepancy Evaluation Model—engages program staff in a continuous improvement process using findings to approach discrepancies and resolve issues. This model involves internal staff, external evaluators, stakeholders, and key partners, allowing all parties to provide input on program improvement. The table below displays the primary goals and their corresponding objectives against which the ICOE consortium’s performance will be evaluated.

Goal 1: An adequately designed network infrastructure supported and managed to serve K-12 needs today, tomorrow, and into the future.
<ul style="list-style-type: none"> • Objective 1.1: By June 30, 2005, a complete profile of current connectivity and levels of use will be established.
<ul style="list-style-type: none"> • Objective 1.2: By June 30, 2005, a viable timetable and plan will be developed for transitioning infrastructure control to the LEA.
Goal 2: Provide an open, inclusive process to nurture a culture of effective collaboration among all stakeholders.
<ul style="list-style-type: none"> • Objective 2.1: By June 30, 2005, input from stakeholders will be solicited, using multiple methods, and used in the planning process.
<ul style="list-style-type: none"> • Objective 2.2: By March 1, 2005, transition and planning activities will utilize the expertise of key partners to the benefit of the program’s current position.
Goal 3: The California K-12 High Speed Network will be effectively and efficiently administered using good stewardship and responsive management.
<ul style="list-style-type: none"> • Objective 3.1: By March 1, 2005, a complete audit of fiscal and programmatic factors will be completed and provided to the State Legislature.
<ul style="list-style-type: none"> • Objective 3.2: By November 15, 2004, the interim governance structure, including the Executive Management Team and any operations committees, will be functioning to carry out program administration.
<ul style="list-style-type: none"> • Objective 3.3: By June 30, 2005, a comprehensive planning process will address audit findings and requirements for transition and transfer of full administrative responsibilities for the Network infrastructure to the LEA.
<ul style="list-style-type: none"> • Objective 3.4: By June 30, 2005, transparency will be achieved using mechanisms for stakeholders to access program information, progress reports, and accountability updates online at the program’s website.
Goal 4: The effective use of the California K-12 High Speed Network will improve teaching and learning.
<ul style="list-style-type: none"> • Objective 4.1: By June 30, 2005, a plan and fiscal resources will be developed and allocated to distribute high quality educational resources and advanced uses of the network.

Case Studies—In order to provide greater understanding and insight into the utility of the K12HSN in advancing teaching and learning (Goal 4), the evaluation will undertake four to six case studies that will examine how technology has been applied in the classroom. These case studies are expected to be completed by mid-July 2005. To date, three case studies have been preliminarily identified, with one study fully underway:

Lemon Grove School District (case study in progress). This case study examines districtwide uses of technology, showcasing how a district can be transformed when technology is fully integrated into day-to-day operations. There are numerous projects and programs in place at Lemon Grove, including initiatives that allow each student or pairs of students to have ready access to laptops or Internet-connected appliances. The team is examining the kinds of decisions administrators have faced over the years to ensure that (1) technology access is equitable—and involves the *entire* community, (2) technology access is dedicated to improving academic performance and socialization, (3) teachers are well prepared to use technology, and (4) data about the district’s processes and outcomes are continuously collected, analyzed, and reported to key constituents.

Los Angeles Virtual Academy (LAVA). LAVA (<http://lava.lausd.net/>) provides high school students in Los Angeles Unified School District with alternative course-completion strategies. While the program leverages the capacity of the K12HSN, it is currently heavily reliant on the commercial Internet, since many enrollees connect from homes with only dial-up connectivity. The evaluation team has interviewed key personnel and has an emerging understanding of the academy’s student demographics, the service menu (primarily Advanced Placement and credit recovery courses), how teachers are selected and then trained for online delivery, future directions/anticipated growth trajectory, and strategies for countering student attrition.

New Technology High (Napa). Since 1996, New Technology High (<http://newtechnigh.org>) has offered students an instructional setting that resembles the industries in which they are likely to work. Each student has his/her own personal computer work station and focuses on projects rather than “worksheets” or other rote assignments. The student-teacher ratio is relatively low, and the school day is organized around a flexible schedule that encourages students to complete the tasks at hand rather than a preordained number of seat-time minutes. The curriculum meets all state standards, but allows teachers to use creative teaching techniques to help students achieve their learning goals.

Apart from case studies, the evaluation team is investigating common threads—if any—between and among nonK12HSN users. Access to the Last Mile Database has allowed the team to quickly

sort and stratify nonconnected districts into types, ensuring that the sample on which the team ultimately focuses will appropriately represent the population from which it is drawn.

White Paper—Finally, the self-evaluation will include a white paper to be completed in May 2005. Because of the complexities of the K12HSN (including its high-profile nature and performance expectations), the evaluators concluded that there was a need for a document to inform (conceptually, technically, operationally, and fiscally) all interested parties about the nature of this endeavor. The white paper will draw on thoughtfully conducted research and lessons learned from creative thinkers and risk takers.

The white paper will include four parts: Part 1 defines a high speed network and emphasizes its components or elements; Part 2 illustrates how statewide high speed networks have been/may be built (including funding sources) and deployed; Part 3 addresses why high-end access “matters” to/affects such areas within K-12 education as professional development, teacher/administrator preparation and licensing, curricular planning/instruction, school operations, and community outreach; and Part 4 targets the standards by which network “success” may be measured—as well as potential measurement areas.

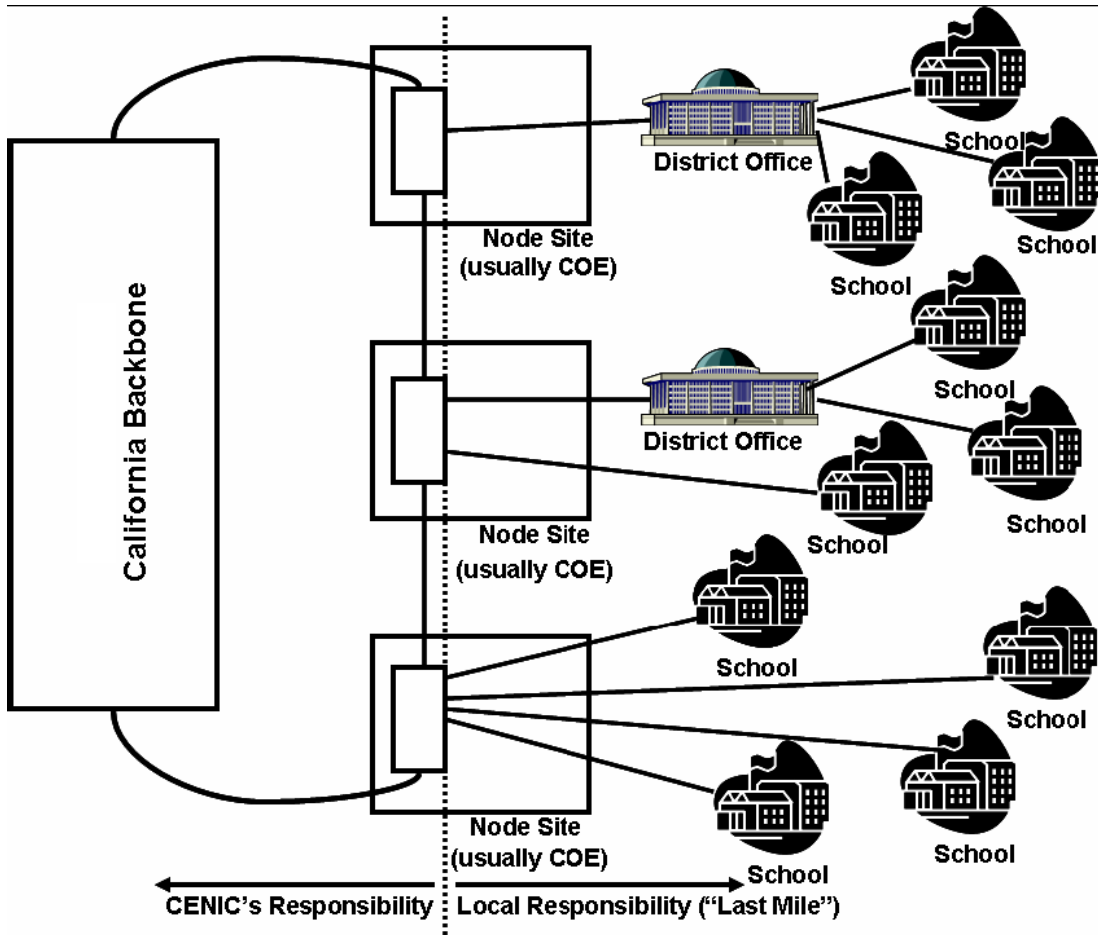
Cost Analysis of Connecting Additional Schools

COST TO CONNECT SCHOOLS NOT CURRENTLY CONNECTED

The DCP Network was envisioned and built to bring high speed network services to node sites, typically located at a county office of education. Once a node site is established, it can accept connections to districts or schools. Neither CENIC nor the DCP had responsibility for connecting schools and districts to node sites. The connection between local jurisdictions (schools, districts, and, in some cases, counties) and node sites—also referred to as “last mile connectivity”—has been relegated as a local responsibility. Figure 1 on the next page illustrates the model for school connectivity to the high speed network.

Recognizing that there may be financial barriers for schools and districts to establish linkages to the node sites, CENIC allocated approximately \$1.8 million of DCP funds from 2001-02 to 2003-04 for last mile connectivity. Under ICOE, the last mile connectivity grants are continuing. However, ICOE is working to restructure the process and management of such grants to ensure fairness, effectiveness, and improved leverage of other funding sources such as E-Rate discounts. Two new categories of grants have already been added to meet needs in the K-12 community.

Figure 1
Model of School Connectivity to High Speed Network



While most K-12 education agencies have access to the Internet, not all education agencies have access to the High Speed Network. According to the California School Technology Survey (CSTS) in 2003, 98% of schools in California and 90% of classrooms were connected to the Internet by some means (including high speed and dial-up).⁷ According to the most recent figures collected by the K12HSN, approximately 74% of schools and 89% of districts were connected to the K12HSN. In other words, as of spring 2004, approximately 7,039 schools and 945 districts and county offices are connected to the K12HSN. While most of the remaining districts and schools have Internet access, they must generally rely on lower speed connections, such as dial-up service.

⁷ California Technology Assistance Project and CDE. *Summary of Year 2003 School Technology Survey Findings* (October 2003). Principal Investigator: Donald R. Tetreault.

CENIC has estimated in the past that it would cost approximately \$4 million to upgrade connectivity at the school sites that are not currently connected to the K12HSN or utilizing a commercial Internet Service Provider (ISP).⁸ This summer, ICOE plans to complete an independent analysis of the K12HSN that will include an updated assessment of the cost to upgrade connectivity of schools that are not currently connected to the K12HSN. Once the results of this study are available, ICOE will prepare a detailed implementation plan and proposed budget for the multi-year approach to achieve 100% connectivity to the K12HSN.

Annual Revenues for Project

The Governor's January 10, 2005, budget includes a line item of \$21,025,000 for the K12HSN. The language states that funds appropriated in this item are for allocation to ICOE to continue management and operation of the K12HSN during the 2005-06 fiscal year. If the current language remains the same throughout the budget process, the funds will be directly allocated to ICOE.

The program budget for the K12HSN is operated by ICOE's internal fiscal support team. The budget is currently managed in accordance with all applicable state and federal regulations and governed by the California School Accounting Manual. ICOE is utilizing leading edge technologies to administer the budget, specifically the ICOE's financial budget system. The system was developed in a statewide consortium of five county offices of education (Imperial, Tulare, Fresno, Monterey, and Kings), and is programmed and maintained by ICOE staff. This allows ICOE flexibility to make the modifications necessary to implement special projects and reports for the K12HSN.

As the grant LEA, ICOE has sole responsibility for the fiscal integrity of the K12HSN. All new K12HSN contracts are being let through ICOE. The ICOE system operates remotely over a secure Internet connection using VPN technologies that allow staff to provide immediate and remote access to financial data for the partners and reviewing agency.

ICOE assumed immediate responsibility for all components of the CENIC budget that were transferable. To the extent that commitments had already been made, the ICOE has honored those commitments to ensure a smooth transition for network users. ICOE has also ensured the quality and control of existing CENIC commitments via a comprehensive contract with the agency.

⁸ CENIC, *Broadband Networks in K-12 Public Education: Achieving Last Mile Connectivity to California Schools* (June 2003).

One main budgetary goal is to maximize the returns on circuits eligible for federal E-Rate discounts and to maximize the discounts on circuits eligible for the California Teleconnect Fund (CTF). To the extent the budget can realize such savings, additional funds will be become available for allocation. However, since both the E-Rate and CTF are subject to a considerable lack of predictability, conservative budgeting practices do not permit budgeting any savings from these circuits for ongoing expenses. To the extent that any savings are realized, those savings will be targeted and spent on expenditures of a one-time nature. These one-time expenditures will often be directed to fund Innovation Projects.

Project Expenditures to Date

The following is a schedule of the projected revenues and expenditures for the 2004-05 K12HSN budget. It is projected that approximately \$440,000 will be unspent at the end of this fiscal year. While this is for a variety of reasons, most of the savings are related to not having had all positions filled for the entire fiscal year. The Three-Year Budget Narrative on page 30 provides greater detail.

California K-12 High Speed Network 2004-2005 Budget Expenditures					
<i>As of March 22, 2005</i>					
Category	Current FY04-05 Budget	Expended / Encumbered to Date	Projected Expenditures FY04-05	Remaining Balance	% Remaining
Revenues					
Appropriation	\$21,025,000	\$17,616,250	\$3,408,750	\$0	0%
E-Rate and CTF Income	\$3,300,000	\$2,475,000	\$825,000	\$0	0%
Totals	\$24,325,000	\$20,091,250	\$4,233,750	\$0	0%
Certificated Salaries					
	\$111,500	\$47,565	\$37,888	\$26,047	23%
Classified Salaries					
Classified Salaries (Supervisor)	\$95,000	\$7,810	\$32,126	\$55,064	58%
Classified Salaries (Clerical, other)	\$137,400	\$31,763	\$23,318	\$82,319	60%
Classified Salaries Subtotal	\$232,400	\$39,573	\$55,444	\$137,383	59%
Employee Benefits					
Benefits	\$108,717	\$28,159	\$29,140	\$51,418	47%
Books, Materials and Supplies					
Books, Materials, Supplies	\$28,319	\$8,495	\$18,500	\$1,324	5%
Noncapitalized Equipment	\$40,500	\$29,714	\$10,500	\$286	1%
Books, Materials, Supplies Subtotal	\$68,819	\$38,209	\$29,000	\$1,610	2%
Services/Other Operating Expenditures					
Travel	\$103,500	\$17,033	\$16,000	\$70,467	68%
Rentals and Leases	\$50,000	\$35,055	\$4,000	\$10,945	22%
Direct Costs Transfers	\$10,000	\$493	\$950	\$8,557	86%
Services/Other Operating Expenditures	\$437,655	\$89,115	\$310,000	\$38,540	9%
Backbone and Node Services (Layers 1 and 2)	\$15,173,092	\$11,878,502	\$3,294,590	\$0	0%
Round 2 Circuit Reimbursements	\$1,630,799	\$224,367	\$1,406,432	\$0	0%
Audit Services	\$300,000	\$296,520	\$0	\$3,480	1%

California K-12 High Speed Network 2004-2005 Budget Expenditures					
<i>As of March 22, 2005</i>					
Category	Current FY04-05 Budget	Expended / Encumbered to Date	Projected Expenditures FY04-05	Remaining Balance	% Remaining
School Services of California	\$150,000	\$137,300	\$0	\$12,700	8%
Butte MOU	\$200,000	\$200,000	\$0	\$0	0%
Mendocino MOU	\$200,000	\$200,000	\$0	\$0	0%
Legislative Support	\$50,000	\$39,509	\$0	\$10,491	21%
Evaluation	\$40,000	\$40,000	\$0	\$0	0%
Communications	\$5,345	\$2,324	\$5,100	(\$2,079)	-39%
Services/Other Operating Expenditures					
Subtotal	\$18,350,391	\$13,160,218	\$5,037,072	\$153,101	1%
Capital Outlay					
Capital Outlay / Equipment Replacement	\$1,446,474	\$0	\$1,400,000	\$46,474	3%
Projects					
Project Video	\$420,000	\$0	\$400,000	\$20,000	5%
Project Leadership	\$200,000	\$0	\$200,000	\$0	0%
Project Last Mile Connections	\$1,200,000	\$0	\$1,200,000	\$0	0%
Project Application Dev./Adv Network Use	\$649,322	\$0	\$650,000	(\$678)	0%
Projects Subtotal	\$2,469,322	\$0	\$2,450,000	\$19,322	1%
Indirect Cost					
Indirect (7.31%)	\$1,537,377	\$0	\$1,531,611	\$5,766	0%
Total Expenditures	\$24,325,000	\$13,313,724	\$10,570,155	\$441,121	2%

Three-Year Budget Projections

Multi-year financial projections are a key component of the planning process. These projections are based on current actuals as well as predictions for future years. The assumptions are explained in great detail in the Three-Year Budget Narrative beginning on page 30.

California K-12 High Speed Network 3-Year Budget Projections					
	← Fiscal Year 2004-05 →			<u>Fiscal Year</u> 2005-06	<u>Fiscal Year</u> 2006-07
Category	Initial 04-05 Budget Submitted to CDE	Current FY04-05 Budget	**Estimated Actuals	FY05-06 Budget	FY06-07 Budget
Revenues					
CDE Grant Income	\$21,025,000	\$21,025,000	\$21,025,000	\$21,025,000	\$21,025,000
E-Rate and CTF Income	\$3,000,000	\$3,300,000	\$3,300,000	\$3,300,000	\$3,300,000
Totals	\$24,025,000	\$24,325,000	\$24,325,000	\$24,325,000	\$24,325,000
Certificated Salaries					
Certificated Salaries	\$102,000	\$111,500	\$85,453	115,500	118,300
Classified Salaries					
Classified Salaries (Supervisor)	\$95,000	\$95,000	\$39,936	\$97,850	\$100,800
Classified Salaries (Clerical, other)	\$136,000	\$137,400	\$55,081	\$65,500	\$67,500
Classified Salaries Subtotal	\$231,000	\$232,400	\$95,017	\$163,350	\$168,300
Employee Benefits					
Benefits	\$107,140	\$108,717	\$57,299	\$86,444	\$88,846
Books, Materials and Supplies					
Books, Materials, Supplies	\$90,000	\$28,319	\$26,995	\$20,000	\$20,000
Noncapitalized Equipment	\$20,000	\$40,500	\$40,214	\$40,000	\$40,000
Books, Materials, Supplies Subtotal	\$110,000	\$68,819	\$67,209	\$60,000	\$60,000
Services/Other Operating Expenditures					
Travel	\$80,000	\$103,500	\$33,033	\$63,500	\$63,500
Rentals and Leases	\$50,000	\$50,000	\$39,055	\$50,000	\$50,000
Direct Costs Transfers	\$4,563	\$10,000	\$1,443	\$10,000	\$10,000
Services/Other Operating Expenditures	\$500,306	\$437,655	\$399,115	\$397,611	\$300,000
Backbone and Node Services (Layers 1 and 2)	\$15,109,287	\$15,173,092	\$15,173,092	\$15,552,419	\$16,728,334
Round 2 Circuit Reimbursements	\$1,630,799	\$1,630,799	\$1,630,799	\$1,630,799	\$0
Audit Services	\$300,000	\$300,000	\$296,520	\$50,000	\$50,000
School Services of California	\$150,000	\$150,000	\$137,300	\$150,000	\$150,000
Butte MOU	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Mendocino MOU	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000

California K-12 High Speed Network 3-Year Budget Projections					
	← Fiscal Year 2004-05 →			<u>Fiscal Year</u> 2005-06	<u>Fiscal Year</u> 2006-07
Category	Initial 04-05 Budget Submitted to CDE	Current FY04-05 Budget	**Estimated Actuals	FY05-06 Budget	FY06-07 Budget
Legislative Support	\$50,000	\$50,000	\$39,509	\$20,000	\$20,000
Evaluation	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Communications	\$0	\$5,345	\$7,424	\$12,000	\$12,000
Services/Other Operating Expenditures Subtotal	\$18,314,955	\$18,350,391	\$18,197,290	\$18,376,329	\$17,823,834
Capital Outlay					
Capital Outlay / Equipment Replacement	\$1,510,575	\$1,446,474	\$1,400,000	\$1,500,000	\$1,500,000
Projects					
Project Video	\$420,000	\$420,000	\$400,000	\$420,000	\$420,000
Project Leadership	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Project Last Mile Connections	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000
Project Application Dev./Adv Network Use	\$500,000	\$649,322	\$650,000	\$300,000	\$300,000
Projects Subtotal	\$2,320,000	\$2,469,322	\$2,450,000	\$2,120,000	\$2,120,000
Indirect Cost					
Indirect (7.31%)	\$1,329,330	\$1,537,377	\$1,531,611	\$1,529,371	\$1,489,725
Total Expenditures	\$24,025,000	\$24,325,000	\$23,883,879	\$23,950,994	\$23,369,005
Total Expenditures without Projects		\$21,855,678	\$21,433,879	\$21,830,994	\$21,249,005
Less Indirect Costs from Projects		\$180,507	\$179,095	\$154,972	\$154,972
Total Expenditures without Projects		\$21,675,171	\$21,254,784	\$21,676,022	\$21,094,033
Beginning Balance		0	\$0	\$441,121	\$815,127
Ending Balance		\$0	\$441,121	\$815,127	\$1,771,122
** The estimated actuals column is our projection of the revenues and expenditures that we expect will occur in 2004-05					

Three-Year Budget Narrative

ASSUMPTIONS AND BUDGET APPROACH

The K12HSN has adopted an approach to budgeting that identifies core network and operational expenses and attempts to fund these direct costs within the confines of the state appropriation. All other activities and projects are funded by revenues realized through CTF and E-Rate discounts. The K12HSN has adopted a policy of treating these revenues as “one-time” revenues and targeting these additional funds in two priority areas for one-time expenditure:

1. Network Extension—Assisting districts and schools in connecting to the K12HSN.
2. Advancing Network Uses—Supporting the development and utilization of appropriate uses of the Network, including Innovation Projects.

REVENUES

The budget projection assumes an annual state appropriation of \$21,025,000 and projected revenue from CTF/E-Rate discount at \$3,300,000 each year. K12HSN is currently waiting on detailed accounting of 2004-05 CTF/E-Rate figures from CENIC. It is anticipated that these discounts will be slightly higher than originally projected. As described above, any additional revenue received through CTF/E-Rate discounts will be targeted for one-time expenditures for Network Extension and/or Advancing Network Uses.

EXPENDITURES

Certificated Salaries

This line item includes 1.0 Full Time Equivalent (FTE) for the Chief Executive Officer of the K12HSN (with salary adjusted for 3% growth in the projection years). It should be noted that the estimated actual expenditures in this category for 2004-05 will be below the budgeted amount of \$111,500, due to the position not being filled the entire year. We expect that approximately \$26,000 will not be expended this year and will fall to the ending fund balance. In the projection years, it is expected that the budgeted amounts will be fully expended.

Classified Salaries

This line item includes 1.0 FTE for the Director of K-12 Outreach and 2.0 FTE for Support Staff (salaries adjusted for 3% growth). The fiscal year 2004-05 budget reflects anticipated positions that were not filled, as well as current positions not being supported for the entire fiscal year. All positions were filled well into the year. For fiscal year 2005-06 and beyond, this category has

been adjusted to accurately reflect the 3.0 FTE identified above. We expect that approximately \$137,000 will not be expended in 2004-05 and will fall to the ending fund balance. In the projection years, it is expected that the budgeted amounts will be fully expended.

It should be noted that there are 4.5 FTE in salaries devoted to the K12HSN that do not show in this category. These salaries are paid under “Services” as a contract with Butte and Mendocino County Offices of Education.

Employee Benefits

Health and Welfare benefits are budgeted for the Certificated and Classified salaries and are included in this item. We expect that approximately \$50,000 will not be expended in 2004-05 and will fall to the ending fund balance. In the projection years, it is expected that the budgeted amounts will be fully expended, as the goal is to have the positions filled the entire year.

Books, Materials, and Supplies

In the current year, we expect this category to be fully expended. In the projection years, we have reduced this budget category approximately 10% recognizing that expenditures in the initial year 2004-05 included some one-time start-up costs.

Services/Other Operating Expenditures

This budget category represents a significant percentage of the total budget. Most line items continue to be appropriate based on current or expected expenditures. This category of expenditures includes:

- ***Travel***

This line item is used for travel for project staff to attend required meetings in Sacramento and necessary travel related to outreach efforts. This line item is being reduced by \$40,000 in the projection years based on our analysis of the 2004-05 travel requirements when converted to an annualized basis. We expect that approximately \$70,000 will not be expended in 2004-05 and will fall to the ending fund balance.

- ***Services/Other Operating Expenditures***

This line item represents payments to contractors and consultants. In the current year, we expect that approximately \$38,000 will not be expended and will fall to the bottom line. We are reducing this line item by approximately \$40,000 in fiscal year 2005-06, since stipends will no longer be paid to committee members for participation. In 2005-06, the K12HSN will be contracting for a detailed Utilization and Design Analysis, which is a

one-time expenditure. For that reason, this line item is further reduced in 2006-07 by approximately \$100,000, which is the anticipated cost of this one-time study.

- ***Backbone and Node Services***

This line item represents the current cost for these services as provided by CENIC. The amount is adjusted upward by the forecasted Consumer Price Index (CPI) percentages to accommodate cost increases and minor adjustments to services.

- ***Round 2 Circuit Reimbursements***

Consistent with the budget approach outlined above, Round 2 circuit reimbursements have been eliminated from the core budget in 2006-07, as they reflect efforts to extend the network to districts and schools. Pre-existing commitments require that this funding be maintained in 2005-06. The reduction of this line item in 2006-07 is \$1.6 million.

- ***Audit Services***

This line item was used for some one-time audit services as required by the Legislature. This line item has been reduced by \$250,000 to \$50,000 per year in the projection years. We believe strongly that an external audit should be conducted each year to validate the K12HSN financial statements and to test our internal controls. Based on our review of the California State Controller's report to the Superintendent of Public Instruction on school district audits, we believe that \$50,000 will be sufficient to cover an annual audit and any small special audits that are required or desired.

- ***Contracts with Program Partners***

These are service contracts with our program partners, School Services of California, Butte County Office of Education, and Mendocino County Office of Education. In the projection years, we anticipate partners will provide a similar scope of service and have budgeted the status quo with our partners.

- ***Capital Outlay***

In 2005-06, we expect to spend most of this budget line on one-time capital outlay and equipment replacement. We expect approximately \$46,000 to remain expended and fall to the ending balance. We expect capital outlay and equipment replacement to require the full \$1.5 million in the projection years.

Projects

As noted previously in this report, the K12HSN has adopted an approach to budgeting that identifies core network and operational expenses and attempts to fund these costs within the state appropriation. This line item is for all other activities and projects that are funded by revenues realized through CTF/E-Rate discounts. K12HSN has adopted a policy of treating these revenues as “one-time” annual revenues and targeting these additional funds in two priority areas: the first to assist districts and schools in connecting to the K12HSN, and the second to advance network uses by supporting the development and utilization of exemplary uses of the network.

This line item is expected to be fully expended in 2004-05. In the projection years, advanced network use in this item is reduced by approximately \$350,000.

Indirect Costs

Indirect costs are the local education agencies’ (LEAs) costs of agencywide general management (i.e., activities that support the direction and control of the LEA’s activities). General management costs consist of expenditures for administrative activities necessary for the general operation of the LEA, such as accounting, budgeting, payroll preparation, personnel management, purchasing, and data processing. This line item permits the ICOE to recoup these costs. The indirect cost rate applied has been approved by the California Department of Education.

Beginning and Ending Balances

The K12HSN started the year with a beginning balance of zero. It is estimated that approximately \$440,000 in budgeted expenditures will not be spent in 2004-05. The reasons are outlined above in the narrative of each line item. Some additional savings are projected in the future years and are also outlined above.

Annual Savings to Local Agencies

LOCAL AGENCY USES OF NETWORK

Local education agencies have utilized the K12HSN to improve communication and educational services, and to enhance information systems.

Prevalent uses of the K12HSN reported by the K-12 community include the following:

- ***Video Conferencing***—All COEs and many districts have access to each other through a video conferencing network supported by the K12HSN. Among the major benefits of

video conferencing is face-to-face communication without the expense of travel or the loss of productivity due to travel time.

- **Online Learning**—There are several projects that directly support student learning. For example, students access class content online, participate in virtual field trips, access online textbooks, and collaborate with students in other parts of the state.
- **Professional Development**—Students are not the only beneficiaries of the K12HSN. There are several projects in the state that allow teachers to participate in staff development, access teaching resources, and gain assistance.
- **Accountability and Assessment**—The K12HSN supports the usage and handling of large and complex datasets. Projects have emerged that facilitate the handling of data to allow classroom teachers to administer online assessments, review performance with the input of other professionals, and access data that is necessary to make educational decisions.
- **Administration**—K12HSN has made it easier for LEAs to fully utilize management information systems, support data back-up and disaster preparedness, store and transfer data, and hold online events to recruit teachers and conduct meetings.

POSSIBLE SAVINGS TO LOCAL AGENCIES

Many benefits have been realized by LEAs attributable to the K12HSN. Among those most commonly cited are learning enhancements and cost savings. There are two types of cost savings realized by LEAs:

- **Direct Cost Avoidance**—This category includes costs that would have otherwise been experienced by an LEA, but, due to the K12HSN's existence, are either funded with K12HSN resources or are not required.
- **Cost Efficiencies**—As a statewide network, the K12HSN offers an economy of scale that does not exist for LEAs as individuals. Some LEAs have been able to leverage the network investments to reduce their costs for services and equipment.

In our consideration of cost savings to LEAs, we acknowledge that monetary savings are among the real benefits of the K12HSN, but caution that it is inappropriate to consider all cost savings as a direct budget surplus to an LEA. With the significant budget constraints experienced by LEAs over the past several years, the cost savings resulting from the K12HSN helped to offset some of the gap between revenues and expenditures due to faster growth in operating and programmatic costs as compared to revenues. We expect that without the K12HSN some LEAs would be left with no choice but to forego high speed network access because the costs would be

prohibitive. This is the major reason the K12HSN was envisioned and built as a statewide network—to ensure that all LEAs had access to high speed services, regardless of their size or economic situation.

At this time, we do not have statewide data regarding the “savings” attributable to K12HSN, but future evaluations to be conducted by ICOE will target this issue. Below are some of the most common areas where savings are reported:

- ***Reductions in Travel Costs***—Video conferencing capabilities have allowed several LEAs to forego travel to meetings, saving both travel costs and employee time. One LEA reported saving approximately \$50,000 from avoided travel costs due to the video conferencing capability.
- ***Reductions in Internet Service Costs***—In many areas, the K12HSN has replaced costly Internet service provider charges. Large COEs report annual savings on the order of tens to hundreds of thousands of dollars.
- ***Support of Back-up and Disaster Recovery***—The K12HSN has been utilized by COEs to support centralized data back-up and disaster recovery for smaller school districts that otherwise do not have the capacity for this necessary activity. The loss of school district data not only has a monetary cost, but could significantly impact the provision of educational services.
- ***Leverage***—There are a variety of examples of how LEAs have found the existence of K12HSN effective to draw down funding or services that would not otherwise be available. For instance, along the Highway 395 corridor, network services were unavailable by any commercial provider, but K12HSN brought services to this area. Another COE received free support from its local cable company because of the presence of the K12HSN.

ICOE will continue to track savings and benefits to LEAs attributable to K12HSN, since this is an important measure of effectiveness, efficiency, and relevance for the project. Future reports will include more detail, with the goal of providing a statewide assessment and analysis of this issue.

Multi-Year Commitments and Assets Owned

The MGT report concludes that the K12HSN does not currently hold any multiyear commitments. While CENIC holds several multiyear commitments that relate to the K12HSN,

these commitments do not bind ICOE and are crafted to allow CENIC to terminate the agreement without penalty by June 2005.

There are, however, several contracts held by CENIC that serve all customers, including the K12HSN. Should ICOE renew its contract with CENIC for the period following June 30, 2005, K12HSN would bear a portion of the costs related to the following: (1) the annual maintenance costs of optical fibers, (2) a five-year lease of optical fibers, (3) maintenance costs of equipment used to provide services to CENIC users, and (4) sublease costs. With respect to assets owned by the K12HSN, CENIS believes its contract for the high speed network has been a services agreement which means that this K12HSN does not maintain ownership of any high speed network assets. This is an issue that MGT recommended need legislative clarification. Based on our experience with the K12HSN, we agree with this recommendation.

Response to MGT Findings

The performance evaluation called for in the 2004-05 Budget Act required the lead agency for K-12 high speed connectivity to contract for an independent performance evaluation of the K-12 Internet system administered by CENIC. MGT of America was selected to perform this evaluation. MGT's 99-page report was submitted to the Legislature on March 1, 2005, focusing primarily on the planning, implementation, and management of the Digital California Project by CENIC. This report, however, also offered recommendations for the K-12 lead agency. This section presents the ICOE consortium's response to the MGT recommendations.

MGT Recommendation: Negotiate for increased decision-making power over CENIC's network management, such as membership on the CENIC Board.

ICOE has had preliminary discussions with CENIC to move forward with a request to the CENIC Board that the K12HSN be included on the board. CENIC has indicated that it would be appropriate for K-12 education to have representation similar to the charter member status of the higher education segments, should the ICOE continue to contract with CENIC for K-12's High Speed Network services. A final decision on the K-12 consortium's relationship with CENIC has not yet been made.

MGT Recommendation: Take the lead in organizing the K-12 community as a "customer" of wide area data communication services to more directly represent K-12 interests.

Toward this end, the ICOE and its partners are expanding the involvement of the K-12 community by broadening the avenues of input for decisionmaking regarding the high speed network. For example, the ICOE consortium has established an inclusive process to fill the seats on the ACC and the NIC. The K-12 lead agency has maintained an active outreach program and

has shared program information at conferences for administrators, teachers, and technical experts, as well as directly with node sites. Utilization information, design analysis, and a new view to studying Node Service Areas will be pursued now that the K-12 system is managing the network on its own behalf.

MGT Recommendation: Issue a request for proposal for a VPN to determine whether K-12 should continue with CENIC or pursue a VPN proposal.

ICOE has been advised to issue a request for proposal for a Virtual Private Network (VPN) to gauge the cost effectiveness of CENIC-provided high speed connectivity and determine whether the K12HSN should continue with CENIC or pursue a VPN. Prior to issuing a Request for Proposal for a VPN, ICOE and its partners have determined that an analysis of the utilization and network design is a necessary first step prior to commissioning a proposal for the VPN. The RFP for consulting services for the utilization and design analysis is currently under development and is expected to be released on April 14, 2005. The NIC will review information and develop the “Scope of Project/Statement of Work” to be included in the RFP. This important analysis of network utilization and design will ultimately provide for a more detailed RFP for a VPN, should a decision be made to pursue this option, and reduce the time necessary to release the RFP.

MGT Recommendation: Collaborate with CENIC to develop processes to further define responsibilities and expectations including:

- ***Procedures for the accumulation and use of equipment replacement funds***
- ***Service-level agreements (SLAs) with performance measures and performance sanctions***
- ***Adoption of service management software that provides information relative to CENIC performance with respect to its SLA***
- ***Archiving network and service management data to allow for usage and trend analysis***
- ***A problem management policy focused on resolving problems of the users***

ICOE, should it continue to contract with CENIC, will collaborate with CENIC to develop processes to further define responsibilities and expectations including:

- Procedures for the accumulation and use of equipment replacement funds
- Service-level agreements with performance measures and performance sanctions

- A problem management policy that is focused on resolving problems of the users

Through its negotiations with CENIC, ICOE has been permitted access to CENIC-owned equipment in order to obtain data from the advanced management software system that ICOE uses on different equipment for utilization management. While the agreement does not address SLAs, performance measures or performance sanctions, should ICOE contract with CENIC, terms relative to the SLAs will be included. ICOE has begun the data collection and will archive network and service management data, which will allow for network usage and trend analysis.

MGT Recommendation: Seek an independent review of CENIC cost allocation metrics and costs allocated.

If ICOE contracts with CENIC in the future, ICOE will seek an independent review of CENIC's cost allocation metrics and costs allocated. If information on the costs shared by other segments using the California Research and Education Network (CalREN) and network utilization data are not made available, ICOE will be unable to test the cost allocations to determine whether they are reasonable. Should it become a member of the CENIC board, ICOE can use its authority to secure agreement from the Board for the sharing of such information.

MGT Recommendation: Create or empower a single entity to oversee content-related efforts and responsibilities.

With the establishment of the ACC, the K12HSN has created and empowered a single entity to oversee content-related efforts and responsibilities. This committee has representatives from the regional leaders statewide, as well as from the active organizations with an interest in content and applications. Higher education, the CDE, the Curriculum Development and Supplemental Materials Commission, the Small School Districts Association, Curriculum and Instruction Steering Committee of CCSESA, and the Association of California School Administrators will all have representation on the ACC.

Conclusion

The transition of management of the K12HSN from UC to ICOE and its partners has provided several immediate benefits to the K-12 community. As noted at the beginning of this report, the approach used to manage the K12HSN is based on a commitment to the following core principles:

- ***Stewardship***—The consortium [ICOE and its partners] will act with integrity and efficiency on behalf of and as an agent for all California offices of education, schools, and the education community in general.
- ***Collaboration***—The consortium will work together as a single educational unit toward common goals.
- ***Transparency***—The consortium has a strong commitment to an open process, with information and decisions available for public review.
- ***Agility***—The consortium will respond quickly to both planned and unforeseen forces impacting education and the program.

We believe this report demonstrates the opportunities and progress that can be made as a result of abiding by these principles. We now better understand, and are realizing the full potential of, the K12HSN to support learning, management, and collaboration for the K-12 community. We look forward to what the future holds for the K12HSN.