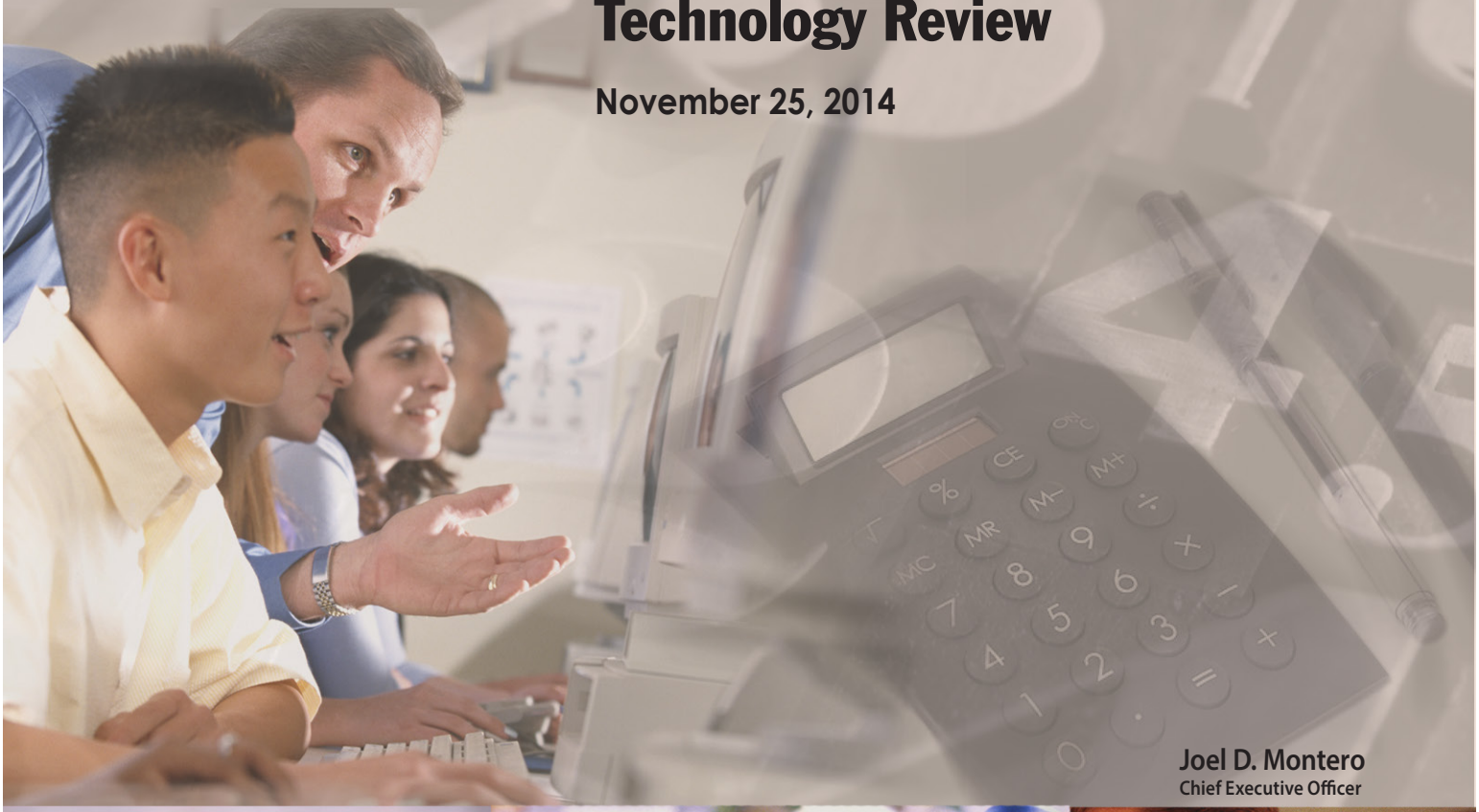
FCMAT
FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
CSIS California School Information Services

Scott Valley Unified School District

Technology Review

November 25, 2014



Joel D. Montero
Chief Executive Officer

November 25, 2014

Allan Carver, Superintendent
Scott Valley Unified School District
11918 Main St.
Fort Jones, CA 96032

Dear Superintendent Carver:

In February 2014, the Scott Valley Unified School District and the Fiscal Crisis and Management Assistance Team (FCMAT) entered into an agreement for a review of the district's technology support services. Specifically, the agreement states that FCMAT will perform the following:

1. Review the district's board policies, administrative regulations, equipment replacement plans and technology master plans to ensure that technology is effectively integrated into the schools. The evaluation will include the district's plan for using technology to support education reform by acquiring new hardware.

2. Review innovative or emerging technologies and make recommendations to standardize the purchase of technology hardware. Evaluate the district's procurement practices to determine whether performance and reliability are maximized to help increase student learning.

3. Evaluate the district's method of establishing hardware and software standards for devices and the process used to communicate this information throughout the district.

4. Review the district's technology asset inventory process including receiving, tagging, logging, assignment and disposal. Review the district's board policies and administrative regulations related to mandated inventory and reporting of such assets. Make recommendations for improvements to the process, policies, and regulations to increase efficiencies and the accuracy of the data.

5. Evaluate the district's core network infrastructure, focusing on the suitability of the installed equipment. Perform an analysis of infrastructure maintenance and support costs, and make recommendations for any needed changes.

6. Evaluate the organizational structure, staffing, workflow, efficiency and duties of the technology department personnel. This will include a comparison of operational practices with board policies and administrative procedures. The team will evaluate the workflow and distribution of technology duties and make recommendations for improved efficiency if needed.

7. Review all technology-related job descriptions, interview staff, and make recommendations for improvements. All recommendations will include the estimated cost or savings of any proposed reductions or increases in positions to improve the organizational structure. In addition, the team may interview other staff including, but not limited to, site principals, department directors, and certificated and classified personnel to determine the efficiency and effectiveness of services to school sites or other departments.

8. Analyze staffing and organizational support for the following:

    a) User and desktop support
    b) Network administration
    c) Website development and support
    d) Email support for district and site staff
    e) Hardware installation and setup
    f) Support of technology in the classrooms

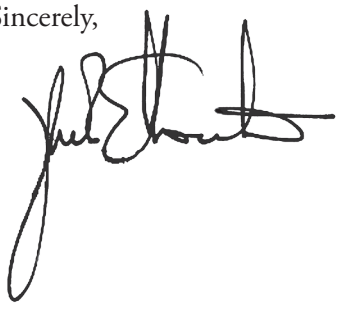
9. Review technology support for the district classrooms, focusing on response times, help desk processes, and prioritization. Evaluation will be based on staff interviews and documents the district provides. The team will provide recommendations for improved quality and efficiency.

10. Evaluate the technology department's readiness for online student assessments for the new Common Core State Standards. This will include examination of data bandwidth to school sites, network infrastructure and professional development to support testing, and the district's plans regarding testing devices. The team will provide recommendations to improve implementation and support.

This report contains the study team's findings and recommendations.

We appreciate the opportunity to serve you and extend our thanks to all the staff of the Scott Valley Unified School District for their cooperation and assistance during fieldwork.

Sincerely,



Joel D. Montero

Chief Executive Officer

Table of Contents

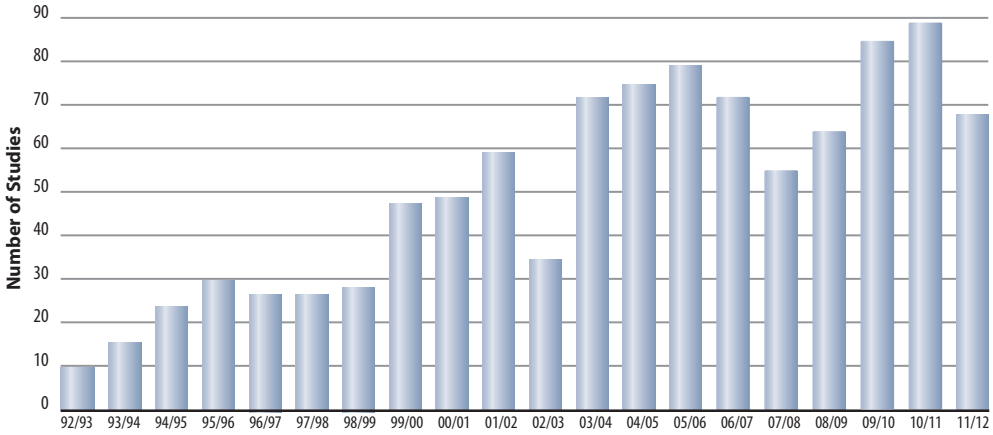
About FCMAT

FCMAT's primary mission is to assist California's local K-14 educational agencies to identify, prevent, and resolve financial and data management challenges. FCMAT provides fiscal and data management assistance, professional development training, product development and other related school business and data services. FCMAT's fiscal and management assistance services are used not just to help avert fiscal crisis, but to promote sound financial practices and efficient operations. FCMAT's data management services are used to help local educational agencies (LEAs) meet state reporting responsibilities, improve data quality, and share information.

FCMAT may be requested to provide fiscal crisis or management assistance by a school district, charter school, community college, county office of education, the state Superintendent of Public Instruction, or the Legislature.

When a request or assignment is received, FCMAT assembles a study team that works closely with the local education agency to define the scope of work, conduct on-site fieldwork and provide a written report with findings and recommendations to help resolve issues, overcome challenges and plan for the future.

Studies by Fiscal Year



FCMAT also develops and provides numerous publications, software tools, workshops and professional development opportunities to help local educational agencies operate more effectively and fulfill their fiscal oversight and data management responsibilities. The California School Information Services (CSIS) arm of FCMAT assists the California Department of Education with the implementation of the California Longitudinal Pupil Achievement Data System (CALPADS) and also maintains DataGate, the FCMAT/CSIS software LEAs use for CSIS services. FCMAT was created by Assembly Bill 1200 in 1992 to assist LEAs to meet and sustain their financial obligations. Assembly Bill 107 in 1997 charged FCMAT with responsibility for CSIS and its statewide data management work. Assembly Bill 1115 in 1999 codified CSIS' mission.

AB 1200 is also a statewide plan for county offices of education and school districts to work together locally to improve fiscal procedures and accountability standards. Assembly Bill 2756 (2004) provides specific responsibilities to FCMAT with regard to districts that have received emergency state loans.

In January 2006, SB 430 (charter schools) and AB 1366 (community colleges) became law and expanded FCMAT's services to those types of LEAs.

Since 1992, FCMAT has been engaged to perform more than 1,000 reviews for LEAs, including school districts, county offices of education, charter schools and community colleges. The Kern County Superintendent of Schools is the administrative agent for FCMAT. The team is led by Joel D. Montero, Chief Executive Officer, with funding derived through appropriations in the state budget and a modest fee schedule for charges to requesting agencies.

Introduction

Background

The Scott Valley Unified School District is located in western Siskiyou County on the northern border of California. The rural district has campuses in the communities of Fort Jones and Etna and serves approximately 700 students at two preschools, two K-5 schools, a junior high school, a comprehensive high school, a continuation high school and one community day school. The district resulted from the 2007 unification of four separate districts.

Study Team

The study team was composed of the following members:

Scott Sexsmith
FCMAT Management Analyst
Bakersfield, CA

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FCMAT Technical Writer
Bakersfield, CA

Andrew Schwab*
Chief Technology Officer
Union School District
San Jose, CA

Mike Vincelli*
Director of Information Technology
Shasta Union High School District
Redding, CA

*As members of this study team, these consultants were not representing their respective employers but were working solely as independent contractors for FCMAT. Each team member reviewed the draft report to confirm the accuracy and to achieve consensus on the final recommendations.

Study Guidelines

In February 2014 the Scott Valley Unified School District requested that FCMAT review its technology support services. FCMAT visited the district on May 8-9, 2014 to conduct interviews, collect data and review documents. This report is the result of those activities and is divided into the following sections:

- Executive Summary
- Technology Support Staffing Overview
- Technology Planning and Standards
- Online Assessment Readiness
- Professional Development
- Services

- Network Infrastructure and Administration
- Technology Related Policies and Regulations
- Technology Support Organization, Staffing, and Reorganization
- Appendices

In writing its reports, FCMAT uses the Associated Press Stylebook, a comprehensive guide to usage and accepted style that emphasizes conciseness and clarity. In addition, this guide emphasizes plain language, discourages the use of jargon and capitalizes relatively few terms.

Executive Summary

Over the next few years, K-12 education will continue a rapid transformation of how technology is used and integrated into the classroom. Many school districts will need to modify grade-specific curriculum to include utilizing technology to develop strategic thinking and "bring your own device (BYOD)" initiatives to keep pace with the increased amount of multimedia used in K-12 classrooms. Even the most progressive technology use plans could be considered obsolete in less than two years. Compounding the demand for technology, the state recently approved major changes to the K-12 curriculum with the addition of the Common Core State Standards and online Smarter Balanced Assessments, both of which will require considerable efforts to properly integrate technology into the curriculum and classroom.

Technology Support Staffing Overview

At the Scott Valley Unified School District, technical support is provided by four part-time positions; the technology coordinator (.5 full-time equivalent (FTE)), two technology specialists (.4375 FTE and .75 FTE) and a computer repair technician (.25 FTE) for a total of 1.9375 FTE. Each position is assigned to specific school sites and reports to a different position in the district. The technology support structure appears to have been inherited from district unification seven years ago. Therefore, the district lacks a cohesive "Technology Department" that provides districtwide comprehensive technical support.

Technology Planning and Standards

The district's technology plan is not fully aligned to its actual direction or practices. The technology plan is in the addendum format and is not comprehensive enough to provide a clear direction for technology use. The district also lacks a unified concept of the classroom technology that should be used for instruction.

Each school establishes its own preference for technology influenced by the preferences of the principal and the site technology specialist. As a result, a third grader's experience with technology at Etna Elementary could be substantially different from that of a third grader at Fort Jones Elementary.

District purchases seem to follow no set standard, with some schools buying Apple products and others obtaining PCs and laptops. Different types of printers are purchased without clear standardization. Various productivity and academic software is used throughout the district.

Online Assessment Readiness

The district utilized a number of different technology platforms to conduct pilot testing for the California Assessment of Student Performance and Progress (CAASPP) system. The online assessments had few problems related to technology; however, the number of available devices was insufficient for regularly scheduled classes during testing.

The district does not have an adequate number of technology staff for the increasing use of technology in the classroom. The district has added Chromebooks and iPads and is adding additional mobile devices; however the current support staff struggles to provide technical assistance for the existing devices. During online testing windows, it will be difficult for the staff to provide adequate and timely testing assistance throughout the district while supporting regular instructional technology use in the classroom.

Professional Development

Opportunities for technology training are limited. The district has started a transition to Google Apps for Education, but technology support staff have received minimal professional development in this area.

The introduction of Chromebooks and iPads has increased access to technology, but the devices were provided to teachers with minimal instruction in using them for teaching. As a result, the integration of these devices into instruction has been inconsistent.

The district technology plan addendum includes the need for professional development for technology and specifies how it will be delivered yet little training has been provided for education technology. Also lacking is a comprehensive and integrated education technology professional development plan for teachers and administrators.

Services

The district does not use an electronic ticketing system for technology support requests, instead utilizing direct email or paper work orders to submit and track support requests. As a result, the technology coordinator and technology specialists have little understanding of districtwide support issues. The district also does not perform an inventory count of assets every other year as required by Administrative Regulation 3440.

The appearance of websites used by the district and school sites is inconsistent, and many different types of software are used to establish and maintain the Web content.

Network Infrastructure and Administration

With the increasing number of student devices used in the classroom, the district should address the timely support of technology for instruction. Because of the district's needs and available resources, network administration, wireless support and Novell/Microsoft server support should be outsourced to the Siskiyou County Office of Education or a regional school organization. This will help free technical resources that can focus on providing assistance in the classroom.

The district does not have a comprehensive maintenance plan for network infrastructure or for scheduled upgrades of core infrastructure including servers, routers, and switches. Most of the network switching and routing equipment is not covered by any support plan.

Technology Related Policies and Regulations

District board policies and administrative regulations do not appropriately address areas related to the integration of technology into instruction. FCMAT reviewed board policies on employee use of technology (BP 4040, March 2007), media relations (BP 1000, February 2009), student use of technology (BP 6163.4, November 2009) and staff development (BP 4131, November 2009).

Policy does not adequately address student cyberbullying and use of social media. In addition, the student Internet use agreement does not adequately address cyberbullying, digital citizenship, or appropriate use of mobile devices. While the district technology plan discusses a bring your own device (BYOD) initiative for students, the district does not have a board policy for such an initiative.

Technology Support Organization, Staffing, and Reorganization

Because the technology coordinator position is part-time and permanently assigned to the high school, leadership is lacking districtwide in this area. This results in a lack of technology cohesiveness, common direction for technology, and effective technical support.

It is no longer practical to fill this critical function with a part-time position performing duties that are divided between working in the classroom and providing technical support. Therefore, the district should establish a technology department headed by a full-time leader. This full-time technology manager position would work closely with the superintendent, technology staff, leadership team, technology steering committee and other affected parties to implement a common direction for technology and support these operations districtwide. The technology manager would also focus on developing a technology plan that aligns with the district's instructional goals. The technology manager should be assigned to implement the technology plan and ensure that timely support is available where needed.

Findings and Recommendations

Technology Support Staffing Overview

The Scott Valley Unified School District's technology support is provided by four part-time positions including a technology coordinator, two technology specialists and a computer repair technician. Each position is assigned to specific school sites, and each reports to a different position in the district. Staffing is discussed throughout this report and in detail in the Technology Support Organization, Staffing, and Reorganization section.

Technology Planning and Standards

Planning

The current district technology plan reviewed by FCMAT is an addendum to the comprehensive plan and was created with the stated purpose of maintaining eligibility for E-Rate funding. The district is in the second year of the plan, which is state-approved and valid from 2013-14 through 2015-2016. The plan includes the following sections:

- Curricular goals
- Professional development
- Existing resources
- Evaluation

The plan is not fully aligned to the technology direction or practices of the district. It calls for a transition from mobile devices and laptops to thin-client computers. However, staff interviews indicated that the district is instead moving toward using more mobile student devices such as laptops, Chromebooks, and iPads and away from fixed computers such as thin clients. The plan also describes the need for students to receive cyberbullying instruction, but this is not evident in board policy or districtwide practice. The document briefly discusses the need to replace hardware every five years, but does not provide a budget or schedule.

Overall the technology plan in the addendum format is not comprehensive enough to provide a clear direction for technology use or a unified concept of the classroom technology that should be used for instruction.

The district should have a plan that supports its curricular and instructional goals and includes a clear direction for technology use. Because of rapid changes in this area, the district technology plan should be reviewed and annually amended to reflect current trends, new technology, and changing directions. As an example, the use of interactive whiteboards in elementary classrooms was mentioned several times during interviews; however, this technology has not been distributed as a standard throughout the district and is not mentioned in the technology plan.

Furthermore, each school seems to set its own preference for technology, influenced by the preferences of the principal and site technology specialist. This approach makes it possible for a third grader's experience with technology at Etna Elementary to be substantially different from that of a third grader at Fort Jones Elementary.

To mitigate this, the district should have a clear direction for classroom technology use that can be used to evaluate technology based on how well it aligns with the instructional goals and objectives and how teachers and students will use it in the classroom. The Common Core State Standards include specific technology components, which the Fresno County Office of Education has posted at http://commoncore.fcoe.org/subject/technology. Additionally, the International Society for Technology in Education has established technology standards for teachers and students at http://www.iste.org/STANDARDS. As a fundamental part of the technology plan, the district should establish expected outcomes for student and teacher technology use and align them to the Common Core State Standards and the district's instructional goals.

Because technology changes quickly, decisions made five years ago may no longer be relevant. Over the past several years, for example, many districts have found tablet-style devices with wireless display connectivity such as the Apple TV and iPad or Microsoft Surface Pro to be more cost-efficient and effective than interactive whiteboards. The district should include standards for classroom technology in the technology plan and continuously evaluate the standards to ensure they meet instructional needs, are cost-effective, and remain sustainable. Further information on standards is included in the following section.

The technology plan also calls for the creation of a district technology steering committee to annually evaluate the district's progress in plan implementation. While the district has such a committee, the membership does not include representatives of some key groups. The technology committee's intent should be to provide input on the district's direction and needs and ensure all those affected are heard before making technology decisions. Without proper representation, important concerns may not be considered. The technology committee's purpose should not be to make day-to-day decisions, but act as a sounding board on strategic alignment and direction-related areas. Therefore, the district should consider adding to the committee representatives from key areas, including teachers, parents and students.

Recommendations

The district should:

1. Develop a comprehensive technology plan that aligns to the district's direction, goals and objectives and includes the following components:
    - Budgets
    - Hardware replacement schedules
    - Technology standards
    - Student and teacher technology standards (outcomes)
2. Establish a process for continuously evaluating technology standards to ensure they meet instructional needs and are cost-effective and sustainable.
3. Expand the technology committee to include representatives of key additional groups such as teachers, parents and students.

Hardware and Software Standards

The purchases made in the district seem to follow no set standard, with some schools buying Apple products and others obtaining PCs and laptops. Different types of printers are purchased without clear standardization, and various productivity and academic software is used. Hardware

purchase is discussed in the technology steering committee meetings held once a month, and information about decisions is communicated via the minutes.

Hardware and software standards are important because they allow for standardized distribution, configuration and support. The support requirements increase with multiple platforms because of the specialized skills required for each, and the district has multiple operating systems and hardware across the school sites. The district should develop technology device standards based on instructional goals and objectives and not on individual preference or familiarity. Because of the different devices used across the district, the technology support staff should receive a solid foundation in supporting the various platforms used and receive additional training as new technologies are adopted.

Recommendation

The district should:

1. Establish hardware and software standards for software applications, computers printers, and other devices. Review these standards quarterly and update them as needed.
2. Ensure that the purchase of nonstandard technology products is first reviewed and approved by the information technology manager.

Online Assessment Readiness

The district utilized a number of different technology platforms to conduct pilot testing for the California Assessment of Student Performance and Progress (CAASPP) system. Staff indicated that the online assessments had few problems related to technology; however, the number of available devices was insufficient for regularly scheduled classes during testing. Another concern was general student familiarity with computers and their access to technology throughout the school year. Students share devices all year. During testing, devices were dedicated for this purpose with limited availability for regular curricular activities.

Support

The district has an insufficient number of technology staff members to handle the increasing use of technology in the classroom. The district has added Chromebooks and iPads and is discussing adding additional mobile devices; however, the support staff struggles to keep up with the existing devices. The technology support staff has schedules of service at various sites and provides support based on these schedules. The staff also works around technicians' other part-time duties, which leads to inconsistent technical assistance across school sites. During online testing windows, it is difficult for the technicians to provide adequate and timely testing assistance throughout the district while supporting regular instructional technology use in the classroom.

Because of increases in the number of student computing devices and testing occurring simultaneously at several schools on multiple platforms, the district is beginning to realize the need for increased technology support to ensure reliable access for teaching, learning and assessments like many throughout the state. Many California school districts have understaffed technology departments. This was manageable when lessons could not be interrupted by the loss of Internet access or a malfunctioning device; however, as technology becomes more integrated into the curriculum, technical interruptions affect learning. It will be difficult for the district if it does not re-evaluate its technical support staffing to provide reliable online testing for students. The district will need to evaluate its technology staffing levels and consider adding additional technology support hours to provide more consistent assistance as outlined in the Technology Support Organization, Staffing, and Reorganization section of this report.

Network Infrastructure and Devices

Bandwidth appears to be insufficient to meet the CAASPP online assessment requirements or instructional technology needs. The district first connects with a 20Mbps data circuit provided by the Siskiyou Telephone Company, which then connects to the Internet through the Siskiyou County Office of Education. The district has transferred email and the collaboration system to the cloud with Google Apps for Education. Therefore, it greatly depends on Internet access and adequate bandwidth.

With student assessments moving to an online platform, it is important to provide students with regular access to computers that are integrated into learning. This will ensure they are comfortable and knowledgeable with the technology before online assessment testing. Otherwise, the lack of simple computer navigation skills could impede the completion of online assessment. It is also important to have an adequate number of devices to ensure educational programs will continue during testing. The California Department of Education Technology Blueprint (http://www.cde.ca.gov/nr/ne/yr14/yr14rel39.asp) calls for providing every student with a mobile Internet-connected device. A 1-to-1 ratio of devices to students resolves many problems related

to conducting online testing without affecting educational programs as well as providing students with routine access and the opportunity to use technology in the classroom. The district should begin to develop a multiyear phased plan to provide an Internet-connected device for each student.

Bandwidth

The district's 20Mbps Internet connection may not be sufficient to support CAASPP assessments and regular Internet use during testing. The bandwidth recommendation is 1Mbps for every 100 students testing. The district may need approximately 30-40Mbps just for online testing, depending on test schedules and device availability. To assess the district's readiness for online testing and determine if additional bandwidth will be needed, it should use the information and websites provided by the Smarter Balanced Assessment Consortium (SBAC) at the following website:

http://www.smarterbalanced.org/smarter-balanced-assessments/technology/

To support the increasing reliance on Internet connections for instruction and learning, a guideline for Internet bandwidth for schools is 1Gbps of bandwidth per 1,000 students. With a student population of approximately 700, the bandwidth goal for Scott Valley Unified should be a minimum of 700Mbps within the next one to three years. Rural bandwidth may not be able to deliver speeds of more than 100Mbps; however, the district should continuously review ways of upgrading bandwidth to meet increasing technology needs in the classroom. There are many online sources of information and assessments for students and teachers, but the district must have sufficient bandwidth to reliably provide access. Because of the district's stated goals of increasing student access to devices and the limited bandwidth available, it should assess the ability to increase bandwidth to 100Mbps as soon as possible and 500-700Mbps within the next three years.

Recommendations

The district should:

1. Evaluate the available technology support to school sites and consider increasing technical assistance hours to keep pace with the increased number of student devices.
2. Develop a multiyear plan to increase student computer access in support of instruction and assessment with the possibility of a device for each student.
3. Investigate the Smarter Balanced Assessment Consortium requirements to determine how bandwidth may affect scheduling and device requirements.
4. Increase Internet bandwidth from 20Mbps to 100Mbps as soon as possible.
5. Assess the possibility of increasing bandwidth with a goal of 500-700Mbps within the next three years.

Professional Development

The district has a limited number of technology training opportunities. It is located far from most educational technology training offered in the state and in a county with limited educational opportunities in this area. Yet teachers need a range of professional development focused on technology integration in the classroom. The district has started transitioning to Google Apps for Education; however, users have been provided with minimal training.

The district has also experienced an increase in access to technology with the introduction of Chromebooks and iPads. However, the devices have been provided to teachers with minimal instruction on using them for teaching. As a result, the integration of these devices into instruction has been inconsistent.

The district technology plan addendum includes the need for professional development for technology and specifies how it will be delivered, but training is lacking. There is also no comprehensive and integrated education technology professional development plan that includes educational technology training for teachers and administrators.

It is critical for these positions to receive professional development in education technology. To effectively use technology in the classroom, teachers must have basic technology skills, an understanding of the available technology's capabilities, and effective methods and workflows. Administrators must recognize the importance of technology for instruction. The district must find opportunities for teachers and administrators to learn and share best practices for technology integration.

Several annual regional, state and national educational technology conferences can provide educators with this information. These can also be opportunities for educators to begin using social networking to continue their learning after the conferences. The district should consider sending educators and the district technology leader to conferences such as Computer Using Educators (CUE), International Society for Technology in Education (ISTE) and Google Apps Summits.

Because sending educators to outside events may be more expensive than contracting for on-site training, the district should consider collaborating with nearby districts or the county office to host on-site training and share costs. Online training options are also available and can be a way to develop a "train the trainer" cadre of educational technology teacher leaders. One online program is the Leading Edge Certification for teachers and administrators (http://www.leadingedgecertification.org/).

Many free online professional development options are available, for example, EdCamp Home which is a volunteer-run training day offering teachers online sessions on technology education in the classroom. Educators also host a free Twitter chat every week using the #caedchat hashtag that covers topics related to integrating technology into the classroom. Free online platforms such as Gooru provide teachers the ability to create and share common core aligned lessons. Commercial offerings for "just in time" training for Google Apps for Education, such as the service from synergyse.com, can give teachers and students step by step instruction on basic tasks when and where they need it.

Rapid changes in technology can also be a problem in providing educational technology training. The skills learned at a professional development event last year may no longer be relevant. Therefore, it is important for the district to develop a continuous professional development plan that recognizes the need to keep up to date on these changes.

It is important to provide training that meets the needs of every individual, no matter the level of technology proficiency. This requires a differentiated approach. Therefore, the district should develop several opportunities for teachers and administrators to learn at their individual levels and paces.

Because of the district's remote location, it should also consider developing a plan to build a core group of instructional educational technology leaders who are assigned to research the growing number of Web resources, participate in online educational technology groups, and communicate practices and ideas to their schools. The technology leader should work closely with this group to implement the district's direction for technology.

Recommendations

The district should:

1. Explore ways to provide teachers and administrators with professional development including the following:
    - Sending educators and appropriate technology staff to regional, state and national educational technology conferences (for example Computing Using Educators and International Society for Technology in Education).
    - Bringing educational technology training to the district.
    - Co-hosting educational technology events with the county office or other local districts.
    - Utilizing online communities, resources and certification programs (such as Leading Edge, twitter #caedchat and Gooru).
2. Develop a district professional development plan for education technology integration that is differentiated and ongoing.
3. Consider developing a group of educational technology leaders to build a "train the trainer" model of professional development throughout the district.
4. Ensure that the technology leader works closely with the teachers to implement the district's direction for technology

Services

Technology Support Requests

The district's technology support structure has contributed to an ineffective system of providing technical assistance. The district does not use an electronic ticketing system, instead utilizing direct email or a paper work order to submit and track support requests, leaving the technology coordinator and technology specialists with little understanding of districtwide support patterns. The technology coordinator and the technology specialists do not meet regularly to discuss support issues.

Coordinating support requests is an important part of providing timely support. Without a system to track requests, coordinating resources can be difficult. The current practice of direct email or paper-based work orders should be addressed. Online support ticketing systems, such as the free MyTechDesk (www.mytechdesk.org) from the Imperial County Office of Education, provide an entry-level platform for submitting and tracking work order requests.

Recommendations

The district should:

1. Implement an online help-desk ticketing system, and standardize the submission and tracking of support requests.
2. Ensure that the technology leader meets regularly with support staff to discuss support issues.

Google Apps for Education Administration

The district recently transferred its email to Google Apps for Education, but technology staff members have been insufficiently trained on managing and supporting this system, and there appears to be some confusion about who is responsible for managing the Google Apps domain. The technology coordinator and the technology specialists have super-level administrator permissions in the domain; however, a lack of communication regarding domain settings may be causing confusion about certain configuration settings.

Google Apps for Education is a powerful collaboration and messaging platform, but it can easily be set up without a thorough understanding of its administration. Technology support staff must be trained in supporting any new system implemented. With administrative access but no training, improper configurations could lead to adverse and unforeseen effects. Google offers online training for systems administrators (http://certification.googleapps.com/admin) and Google Education Summits often feature presummit administrator workshops for technology professionals. The district should provide training for appropriate technology staff on the proper setup and administration of a Google Apps for Education domain.

Google Apps for Education administrator roles can be defined with specific permissions, for example, a user could be assigned the password-reset permission. Further, permissions can be restricted to specific suborganizations. If student accounts were grouped under a school specific suborganization, a teacher could be given permissions to reset student account passwords but not access to reset staff passwords. The district should evaluate the use of super administrator permissions and consider using administrator roles to set administrator permissions appropriate to the position and job function of the administrator user.

Third-party applications often require access via the OAuth authentication protocol to function properly. OAuth allows third-party applications to be authenticated with a user's Google Apps for Education account. Without clear communication between multiple super administrators, one administrator may install applications using OAuth access without the knowledge of the others. This can lead to confusion when reviewing access and installed applications. The best practice is to maintain communication among administrators when installing or changing settings in a service, especially one with multiple administrators. The district should audit the list of OAuth-authorized applications to ensure only approved client applications have access to the domain.

Recommendations

The district should:

1. Provide Google Apps for Education administrator training for appropriate technology staff.
2. Evaluate the use of super administrator permissions in Google Apps for Education.
3. Use delegated administrator roles to set appropriate administrator permissions per administration user.
4. Audit OAuth-authorized applications and ensure only approved client applications have been granted access.
5. Improve communication among technology staff Google administrators on changes in Google Apps for Education settings.

iPad Management

The district has purchased many Apple iPads and plans to buy additional devices. End users indicated that technology support staff have taken a considerable amount of time, sometimes months to install software applications on these units. The district has no mobile device management system (MDM) for iPad software management.

Manually managing iPads can be difficult and time-consuming. Districts that successfully utilize hundreds or thousands of these units in education normally use an MDM to help automate applications, including upgrading the operating system. This type of system can also help in producing automated inventory reports of devices and installed applications. Many effective MDM products are available for the iPad platform. A properly implemented MDM will shorten software installation timelines, provide inventory data, and reduce the amount of time necessary for the technology support staff to maintain these devices.

Recommendation

The district should:

1. Evaluate and purchase an MDM system for the district's growing number of Apple iPads.

Inventory and Asset Tagging

The district is currently handling inventory control and tagging in a noncentralized manner. The district office tags and inventories any purchased asset with a value of more than $5,000, and site personnel do the same for assets worth $500 to $5,000. Technicians at each site use a spreadsheet to track technology of more than $500. While these spreadsheets seem up to date, the inventory received by FCMAT lacks an assigned district asset tagging number. The district does not perform an inventory count of fixed assets every other year as prescribed by Administrative Regulation 3440.

Another area of concern is the movement of technology assets between sites without any formal written inventory control paperwork. When teaching staff members are reassigned to a new site, they often take their mobile technology device (e.g., an iPad, laptop). While this is not uncommon in small districts, the district should consider a more formal process of asset movement.

The district uses the Quintessential School Systems (QSS) financial software system provided by the county office. While QSS has an asset control module available, none of the districts in the county use this inventory control software. The district would benefit from purchasing an online inventory control system. The QSS software module and other software packages should be considered. The district should take steps to improve control of its real property, including inventory counts, asset tagging, and asset movement between sites, and eventual disposal.

Recommendations

The district should:

1. Purchase and implement an online, centralized inventory control system.
2. Record all assets in the new centralized inventory control system, and discontinue spreadsheet inventories.
3. Develop procedures for entering information on assets and their disposal into the inventory control system.
4. Develop a new written procedure for asset movement between sites.
5. Conduct biannual inventories counts according to AR 3440.

Aeries Student Information System

Many staff members assigned to enter information into the Aeries student information system have had little or no training, and few have attended the annual Aeries conference in Sacramento. The district lacks formal procedures on how information should be entered into Aeries or when particular data must be entered. Only one technician has been trained to install Aeries CS, install the weekly updates, or support the required Aeries back-end functions. Communication between district staff and the school sites on changes in Aeries and California Longitudinal Pupil Achievement Data System (CALPADS) data is inconsistent and may result in erroneous data being entered.

The district should consider having Aeries or another entity such as the county office host the Aeries system. This would further minimize the technical support required to properly maintain the Aeries system and related data and help ensure system availability.

Many districts hold a meeting with the appropriate school site staff at the start of each school year to discuss changes in student information systems and other data systems such as CALPADS. This includes changes and new features in the software and is an opportunity to ensure that all site staff appropriately use and code the data.

Because of CALPADS's data collection requirements, ensuring data integrity is a common task for school office staff, and maintaining Aeries student information is critical. CALPADS is becoming more and more complex, and the information it requires is being reviewed and validated at an exponential rate. This information is cross-checked with other state and federal systems to ensure the information is valid. Appropriate training of staff and protocols are necessary to ensure proper data integrity. Conferences such as the Sacramento Aeries conference provide hands-on training and peer group discussions so that participants may learn from others with similar issues. Many districts have procedures and protocols that can be used as templates for Aeries procedures. Enrolling in the group email list for CALPADS and Aeries is a means of staying current on CALPADS and Aeries issues. It can be helpful to be able to ask questions of peers throughout the state.

Recommendations

The district should:

1. Send the appropriate staff members to the annual Aeries conference in Sacramento.
2. Ask other districts for their Aeries procedures concerning data entry, discipline and other CALPADS-related issues, and develop written district procedures.
3. Ensure that staff members subscribe to the CALPADS and Aeries user support group email list, if they do not already participate.
4. Hold at least one meeting with office staff before the school year begins to communicate CALPADS and the Aeries changes necessary to ensure data integrity and state compliance.
5. Evaluate the possibility of hosting the Aeries data with Aeries, outsourcing server functions to another entity, or training additional district personnel to provide support.

School Websites

The appearance of websites used by the district and school sites is inconsistent, and many different types of software are used to establish and maintain Web content. Some websites are hosted locally while others are hosted by off-site entities such as Google. Teachers maintain some of the district's websites while office staff maintain others. Because of the variety of platforms, staff receives little training in supporting these websites.

A school website should make it easy for parents to obtain the information they need. Having a common Web page style for the entire district also makes it easier for parents to navigate Web pages when their children progress from school to school. Colors, mascots, and other "branding" can be changed, but the core information about a school should be consistent. Contact information, school calendars, bus schedules, and student assignments or grades should be easily accessible to a parent.

Recommendations

The district should:

1. Use a template style for website content, such as the free version offered by School Loop, to ensure commonality.
2. Develop a common template that conveys the same message and information in the same place on each site. Arrange for adequate training for staff who maintain the websites.

Internet Filtering

The district uses Internet Web filtering hosted by the Siskiyou County Office of Education. Several staff commented that the Web filtering setting restricts sites that are often used in the classroom. Access to the staff override function does not function regularly, and staff often have to gain access by first navigating to a blocked site to provide them with the ability to log into the filtering system.

It is difficult for the technology staff and technology vendors to maintain the proper settings for Web filtering because the Internet constantly changes. They must protect students and staff while providing access to the websites necessary for classroom activities. The ability for teachers to override some filtering settings, while the filtering system logs this override, can be a useful tool in the classroom. Many districts utilize an existing electronic directory of teachers and their associated passwords, such as Microsoft's Active Directory, to allow teachers to use a single username and password to access multiple systems including Web filtering appliances.

Recommendations

The district should:

1. Work with the county office to fix the override login access for teaching staff.
2. Coordinate with the county office technical staff when implementing the district's newly proposed Microsoft Active Directory domain, which may allow the county office to automatically assign Web filtering based on group membership, reducing user account and password management tasks.

Network Infrastructure and Administration

Network Administration

The district has only one part-time technology coordinator providing network administration. The assignment of switch routing protocols, Internet protocol (IP) address ranges, virtual local area network (VLAN) assignment, server management, SQL administration, login script programming, group policy management, and other items is accomplished only sporadically. During interviews, staff members indicated that several new servers were purchased but not installed for production service nor was there a timeline for installation. Several different versions of VMware virtual server technologies are used throughout the district.

Using different versions of VMware can cause compatibility problems affecting areas such as system performance, backup, and recovery. The lack of a clear timeline for server installations and the installation of inconsistent software on critical systems indicate that an insufficient amount of time is spent on network administration.

Administration is a complex task where both server software and end-user applications must co-exist and work properly together. Server performance must be constantly monitored for potential problems before an outage of the server and associated applications. This requires a high level of technical knowledge as well as the appropriate amount of time to monitor and maintain the software and hardware. It is insufficient to have a single staff member without the appropriate training and background working part-time to provide this high-end technical server and network support. Network administration cannot go unattended, and keeping servers and group policy management up to date are crucial to the network's smooth operation. Users expect the network to be available so they can perform their job, and teachers expect sufficient reliability and resources to deliver instruction. It is essential to keep all these complex network components available and performing properly.

With the increase in the number of student devices in the classroom, the district must address the timely support of technology for instruction. Because of the district's needs and available resources, a combination of strategies is necessary. Network administration, wireless support and Novell/Microsoft server support should be outsourced to the county office or regional school organization that has the expertise and knowledge to properly support district operations. This will also help free existing technical resources to focus on supporting the classroom.

Recommendations

The district should:

1. Outsource the technical back-end functions of the network including network, server, and wireless support to the county office or another school district that has adequate levels of technical support. This would allow the limited number of district technology staff to concentrate on desktop and user support
2. Update all VMware hosts to version 5.5 before installing any new servers.

NComputing Thin-Client Usage

Several school sites use NComputing thin-client technology for lab PCs. This technology was developed many years ago, and while it showed promise as an inexpensive alternative to purchasing full PC desktops, it sometimes falls short of full PC desktop performance, specifically in the area of full motion video and sound. The NComputing technology uses one PC running a specialized server operating system to provide video and sound to four other stations with monitors, keyboards, and mice. One full PC usually cannot accommodate simultaneously running full video and sound to all four stations, and sound is an integral part of the new SBAC Common Core State Standards assessment testing requirements. SBAC testing will likely require greater technical resources and could include full-motion video and questions in the future.

Full desktop or laptop systems are the best option. These systems can run almost any academic software application and operate without interruptions while watching a video with sound. Thin-client technology has its place but does not function well under these conditions. The district should consider full desktops or laptops for labs that will be used for SBAC testing.

Recommendations

The district should:

1. Evaluate the purchase of full desktop/laptop systems for labs.
2. Evaluate the possibility of moving the NComputing machines to grades K-2 if possible.

Data Wiring

The data wiring at the schools sites was installed over many years by different installers, resulting in different materials being used. The wiring is likely not performing at an optimal level because of the age and quality of the materials. These problems will only be amplified by efforts to increase the network speed with the introduction of higher bandwidth at the sites.

Many districts have contracted with independent consultants to evaluate the performance of their wiring plants, testing each data line and producing a detailed report on the wiring's condition. This data can then be used to make decisions on repair or replacement.

Recommendation

The district should:

1. Contract with a qualified data wiring contractor to test and evaluate the physical cable plant at each site. Based on this information, the district should develop a plan to hire a qualified contractor to repair or replace wiring as needed.

Wireless Network

The wireless network has been patched together from several different systems as a result of district unification. The two systems used are Aerohive and Aruba, with the Aruba equipment being more prevalent. While the district has wireless coverage almost everywhere, it will be insufficient to handle additional devices like those used in a "bring your own device (BYOD)"

program or any heavy laptop and Chromebook use at each site in the future. With only three or four wireless access points at a school site, a wireless signal must travel the length of two or three classrooms. Many new wireless devices use the 5 GHz and the new 802.11ac communication protocols. While new protocols provide much faster communication speed between the wireless device and the wireless access point on the network, they often lack reach and penetration through classroom walls. More access points will be needed as the use of devices increases.

An optimal configuration is a single comprehensive wireless network controlled by one network controller providing conductivity to all school sites. This would allow for the standardized setup and configuration of all wireless access points at all school sites. An additional benefit would be that any wireless user device moved between one school site and another would automatically connect when the device was within range of the school's wireless network. This would allow teachers from one site to attend trainings or meetings at another site and not change their login information for the local wireless network. A central controller would also allow for a single place of logging and diagnostics, providing for easier support for technical personnel.

Recommendations

The district should:

1. Standardize on the existing Aerohive wireless network and start planning to install more access points in classrooms and common areas at each school site.
2. Evaluate the following two options for the Aruba wireless network controller and access points.
    - Move all Aruba equipment to a single school site and use the equipment until it is no longer of any value, replacing it with Aerohive.
    - Remove and surplus the Aruba equipment and replace it with Aerohive. This would provide a common standardized wireless network across the district.

IP Address Assignment

A review of Internet protocol (IP) range assignments found that IP addresses are assigned by dynamic host configuration protocol (DHCP) via switches at the school site. This was confirmed during interviews. DHCP is a standardized networking protocol used on IP networks for dynamically distributing network configuration parameters such as IP addresses for interfaces and services. This is not a best practice for DHCP assignment.

Public 198.189.x.x addresses are used for DHCP IP number leases. This was a common practice many years ago when the network was first configured, but it is no longer necessary to assign public Internet addresses to computers and other network devices. This practice can also be considered dangerous without proper firewall rules. The county office provides firewall services for the district.

Using a single server to provide DHCP services to all services is a common practice in many districts. Individual scope options and ranges could be set for each network segment and wireless network from one location. Having one device issuing DHCP addresses would make it easier to troubleshoot and configure IP number leases.

Recommendations

The district should:

1. Set up and configure a new Microsoft Windows 2012 server to provide DHCP services to all sites.
2. Ask county office technical staff members if they have a new IP master plan that uses private 10.x.x.x addresses that can be used for IP assignment.
3. Configure all site switches to use IP helper to forward IP requests to the new DHCP server.
4. Configure scope options and IP number leases to support wireless and network operations.
5. Assign new IP ranges to school sites, giving each site their own 10.x.x.x range.

Network Routing

Several different network switch types from several different manufacturers were used during FCMAT's visit to each school site. Staff interviews also indicated that the network is designed to route all networking traffic first to the county office for proper routing in the network. For example if an elementary school PC wants to communicate to a high-school server, the PC request would travel to the county office first then be routed to the high school. While this configuration functions, routing network traffic locally might be more advantageous to the users and provide a quicker response time when communicating with servers.

Routing is an essential part of any large network and can make the difference between a fast network and one that seems to run slowly for no reason. It is preferable to route traffic closer to the source rather than first passing it over data lines.

Using switching equipment that interoperates without problems is essential. To ensure interoperability, ease of troubleshooting, and streamlined management, it is often best to standardize on a single manufacturer for switching. This will result in simplified training of technology support staff on a single platform and easier diagnostics.

Recommendations

The district should:

1. Evaluate whether routing locally would help reduce bandwidth usage between the county office and the school sites. Reducing the data line usage would allow for more Internet traffic from students and staff.
2. Evaluate standardizing on one switch manufacturer.

Device Naming Standards

There is no consistent naming standard for the district's network devices and computers.

A device-naming scheme is essential to troubleshoot and track network-attached equipment. Networks have many wireless access points, end-user devices, servers, heating, ventilating and air conditioning (HVAC) controls, cameras, phones, printers, copiers, scanners and numerous other

devices. Most logging of diagnostics by servers, switches and other network controlling devices are accomplished by device name. Having a standard device-naming standard that can help identify the location and type of device can be helpful when troubleshooting problems. A sample of a device-naming scheme is attached as Appendix B to this report.

Recommendation

The district should:

1. Develop and implement a device-naming standard that identifies the site, equipment type, and device. This will allow for improved monitoring of equipment, improved remote technical assistance, and troubleshooting of devices on the network.

Servers and Desktop Management

Servers

The district uses Novell as its primary data server platform and has VMware vSphere server virtualization installed on several new HP server hardware platforms. vSphere allows for the creation of many virtual servers on a single physical server. This in turn allows for quick configuration and implementation of new servers, often without having to purchase additional hardware.

While Novell was a popular operating system in the past, it is no longer common in schools. Many districts use vSphere to host Microsoft server platforms with the ability to run Microsoft's Active Directory services. Generally, greater technical support is available for Microsoft's server environment compared with Novell's. New technology support staff entering the district will more likely be familiar with Microsoft server platforms.

Desktop Management

The district has limited licensing for Novell's ZENworks, a product for computer systems management; however, technology support staff does not have the training or expertise to properly use this product to perform many of the everyday tasks involved in keeping computers centrally managed.

Many nontechnology staff complained of restricted access to administrator rights for their personal computers and stated that they could not install simple software updates or more complex updates for smart boards. There is no standard procedure for granting administrative rights to staff or equipment. As a result, some sites and staff have these for their personal computers and others do not. There is no central management control of user administrative rights on personal computers.

Network servers often integrate with the desktop operating systems they support. The 2012 Windows Server operating system supports the Windows 7 and Windows 8 personal computing desktop operating systems. Windows Server has built-in group policy objects that allow for the automated configuration of the desktop and other operating system functions. These built-in functions save valuable technician time in configuring PCs and keep every PC in the domain running in a similar manner with the same operating values and configurations. Microsoft also provides at no cost the Windows Deployment Services product, which allows for the configuration and use of desktop software to existing hardware and new hardware. With the proper setup and preconfiguration, desktop software and configurations can be imaged remotely to dissimilar hardware, saving the technology support staff time and reducing end-user downtime.

Many districts also use the VMware/Microsoft server platform with Microsoft's Active Directory services installed to better integrate with Windows desktops. The ability to centrally manage computers from a server is essential to keeping technology support costs down. Valuable technical personnel time can be wasted when many of the small everyday functions have to be performed manually on each individual computer.

With a properly set up management system, staff could be given administration rights by assigning them to a group within Microsoft's Active Directory system. Operating system patches could also be delivered and installed, and printers could be dynamically assigned to users depending on which computer a user logs in on.

Recommendations

The district should:

1. Install Microsoft Windows Server 2012 to better support the Windows computers used in the district.
2. Set up Windows Deployment Services for improved computer imaging and to reduce labor.
3. Install a new Microsoft Active Directory services system to provide for improved management of all windows computers.
4. Set up user accounts in Active Directory for all network logon access.
5. Join all computers and printers to the new Active Directory.
6. Create an Active Directory organizational structure that will support all school sites, administrative offices, classrooms, students and all devices. An example is attached as Appendix C to this report.
7. Set up group policy objects to automate computer and user settings.
8. Set up login scripts to help inventory computers and other devices.
9. Set up groups within Active Directory to aid in assigning administrative rights for staff and students differently.

Infrastructure Analysis and Maintenance

The district does not have a comprehensive network infrastructure maintenance plan. There is also no plan for scheduled upgrades of core infrastructure including servers, routers, and switches. While the district has maintenance agreements on various software platforms such as Aeries, Novell, VMware and others, support for hardware items is limited to the Aerohive and Aruba wireless systems. Most network switching and routing equipment is not covered by any support plan. Key components such as core routers, servers and switches should be covered by some type of support plan, or spare equipment should be kept in inventory. The source of this spare equipment could include the county office or another district via a shared spare equipment pool.

Planning for possible failure of key network infrastructure components such as routers, servers and core switches is essential in technology management. To control budgets and ensure reliable equipment, a replacement schedule of key equipment should be planned and budgeted. Critical pieces of equipment that could fail and result in the failure of an entire network should have some type of maintenance plan or replacement plan.

Recommendations

The district should:

1. Prepare a 3- to 7-year plan to replace routers, switches, servers, wireless access points, backup systems and other key infrastructure components.
2. Evaluate key network infrastructure and determine if the equipment is covered by a maintenance plan or spare equipment is available. If neither option exists, perform a cost comparison of the two options and select the one that is the most cost-effective.
3. Determine whether the county office or other nearby districts have spare equipment in case an emergency replacement is necessary, and estimate the cost of a sharing agreement.

Technology-Related Policies and Regulations

District board policies and administrative regulations do not appropriately cover the integration of technology into instruction. FCMAT reviewed board policies on employee use of technology (BP 4040, March 2007), media relations (BP 1000, February 2009), student use of technology (BP 6163.4, November 2009) and staff development (BP 4131, November 2009) and found that student cyberbullying and use of social media are not adequately addressed. In addition, the student Internet use agreement does not adequately address cyberbullying, digital citizenship or appropriate use of mobile devices. While the district technology plan discusses a "bring your own device (BYOD)" initiative for students, there is no board policy on such an initiative.

It is important to review and update board policy to align with the district's increasing day-to-day use of technology in the classroom. As of July 2012, districts receiving E-Rate funding must have a process to educate students about cyberbullying, appropriate online behavior and safety. Several districts have adopted free curriculum, such as that offered by Common Sense Media (https://www.commonsensemedia.org/educators) and integrated it into classroom instruction. The district should adopt an appropriate Internet safety policy and implement a program that ensures students are educated in cyberbullying and online appropriate use and safety.

Technology has changed student and staff use of social media in the classroom. Use and policies in this area vary from district to district based on local views. While some districts are beginning to define the appropriate use of social media platforms in education, others have decided to restrict or limit access during school hours. Districts are also adopting rules governing the use of smartphones and personal devices on district-provided wireless networks. Determining the appropriate use of social media, personal devices and the district's wireless network must balance the educational benefit of student access with the possibility of disruption and inappropriate behavior without clear policy and regulations. The district should develop policies in these areas and update the student Internet use agreement to reflect policy changes.

The student acceptable use policy should be updated to reflect new technology trends such as social media, cyberbullying, and cellular-phone use of photographs/videos.

The staff acceptable use policy, AR 4040(a) is outdated and should also be updated to include these issues. The staff policy is signed only once when the district first hires the employee. However, students and staff should review and sign these policies every year.

Recommendations

The district should:

1. Adopt a policy governing student education on cyberbullying, online behavior and safety to ensure E-Rate compliance, and implement a program for students in these areas.
2. Develop policies for student device use, social media and the use of personal devices (BYOD) on the district's wireless network.
3. Update the student and staff acceptable use policies to include any needed policy changes.

4. Review student and staff acceptable use policies each year and make appropriate changes as needed.
5. Ensure that all students (and parents or guardians) and staff sign the policy each year.

Technology Support Organization, Staffing, and Reorganization

Technical support is provided by four part-time positions; the technology coordinator (.5 FTE), two technology specialists (.4375 FTE and .75 FTE) and a computer repair technician (.25 FTE) for a total of 1.9375 FTE. Each position is assigned to specific school sites and reports to a different position in the district. The technology support structure appears to have been inherited from the district's unification seven years ago. Therefore, the district lacks a cohesive technology department that provides comprehensive technical support.

Technology Coordinator

A certificated staff member serves as a .5 FTE technology coordinator and works a .5 FTE classroom instruction position at the high school, receiving an additional $14,000 annual stipend for technology duties. This is a 10-month position. In addition to providing technical assistance for the high school and technology coordinator duties for the district, the position also supports the back-end functions of the student information system (SIS), Aeries, wireless network access, network administration and the Novell directory services. This position reports to the superintendent for technology coordinator responsibilities and the Etna High School principal for teacher and site tech support responsibilities. The district does not have a job description for this position.

Because the technology coordinator is part-time and is permanently assigned to the high school, there is a lack of districtwide technology leadership that has resulted in little technology cohesiveness, no common direction, and ineffective technical support. Examples include the following:

- The district continues to run Novell (an increasingly marginalized platform) to provide basic network services without a plan for transitioning to a mainstream network service
- Core infrastructure, from network switches, to servers to client hardware, is not standardized, and there is no plan for scheduled upgrades
- The district supports and manages two different wireless networking solutions
- The technology coordinator does not regularly meet with the technology specialists
- The district technology plan is not aligned with its use of technology

With the Common Core State Standards requiring technology to be integrated into instruction, the state's call for a 1-to-1 ratio of devices to students in the California Education Technology Blueprint (http://www.cde.ca.gov/eo/in/edtechbi.asp), and the move towards computer adaptive assessment, many districts are realizing that they need a dedicated position to address these issues. The district should establish a cohesive technology department with a full-time leader. Attempting to fill this critical function with a part-time position is no longer practical. The district should create a full-time position to work closely with the superintendent, technology staff, leadership team, technology steering committee and other affected groups to create and implement a district direction for technology and support technology operations districtwide. This would involve the creation of an information technology manager position to focus on building and supporting a common direction for technology by aligning the technology plan with the district's instructional goals. The technology manager should also be assigned to implement the technology plan and ensure that timely and appropriate support is available where needed.

Without regular communication, individuals often perform tasks in varying manners. This can quickly lead to lack of standardization and difficulty in providing support coverage during employee vacations and absences. Establishing regular communication between the technology leader and the technology support staff should be a priority. The district should establish a regularly scheduled meeting of the technology leader, computer repair technician and the technology specialists.

Technology Specialist

The two technology specialists provide part-time site-level technology support as well as instruction to staff and teachers on technology use. The positions report to their respective site administrators and are also responsible for advising their principals on technology purchases and device selection.

The technology specialist job description, approved in 2008, matches the position's functions and aligns with district needs; however, technical assistance is not always available to end users when and where it is needed because of the position's limited hours. One .75 FTE technology specialist is divided between the Scott Valley Junior High School for .25 FTE and Fort Jones Elementary School for .5 FTE. This position works 11 months per year. The technology specialist assigned to Etna Elementary works .4375 FTE in the technology support role and .5625 FTE as a bus driver for a total of 1.0 FTE for 11 months per year.

The district does not have a sufficient number of technology support staff to effectively support the growing number of devices and end users. During interviews, technical support staff and users indicated that the single most important issue impeding technology use throughout the district is the need for additional technical assistance. Adding more devices will further strain these support positions, and the positions' divided responsibilities also affect their ability to provide adequate assistance.

The district should change the reporting structure so that the technology specialists report to the technology manager instead of a site administrator for a district-focused approach.

Computer Repair Technician

The computer repair technician is a part-time position and provides basic technology support for Etna High School devices and end users. This position also installs software, conducts inventories and coordinates the surplus property and e-waste process. This is a stipend position at approximately 10 hours per week with additional volunteer hours supplemented based on the demand. The computer repair technician works 10 months per year, and the district does not have a job description for this position.

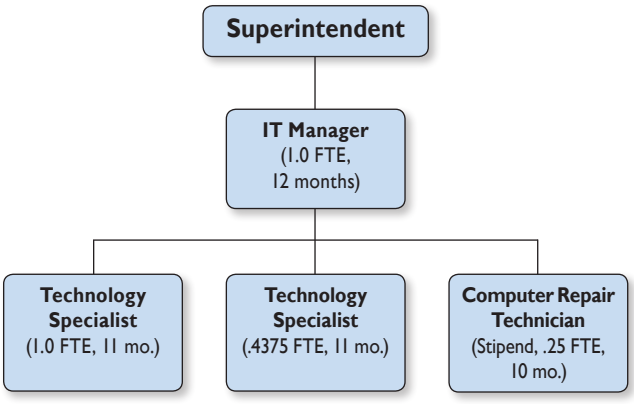
The district should continue to fund the stipend for the computer repair technician because of the need for support at the high school; however, a transition plan should be developed that recognizes the amount of volunteer support hours worked in addition to the stipend hours. A full-time technician may be necessary as additional student devices are introduced in the classrooms. The district should consider transitioning the position to a 1.0 FTE technology specialist in the future.

Reorganization

Reorganizing the technology support model to better assist school sites and classroom technology would help the district resolve site-support problems and organizational obstacles.

The following organizational chart illustrates FCMAT's recommendation to create a new Information Technology (IT) Department.

Proposed Information Technology Department



This structure focuses on technology leadership and additional support for the school sites.

The table below shows current titles and any proposed title changes for technology support positions. The salaries shown do not include the costs for statutory and health and welfare benefits.

Current Title	Proposed Title/Change	Estimated Cost Savings
Technology Coordinator (.5 FTE)	(Position Eliminated)	$30,868 salary plus $14,000 stipend. Total $44,868
Technology Specialist	N/A	N/A
Computer Repair Technician	N/A	N/A

The following table lists the proposed new positions and the estimated salaries for each. This does not include the costs for statutory and health and welfare benefits.

New and Additional Positions	Estimated Annual Salaries
Information Technology Manager	$44,985 (Classified Management and Confidential, Unrepresented, Step 5, Range 6)
Increase one Technology Specialist FTE from .75 to 1.0.	$8,731.53 (2013-14 Classified Salary Schedule , Range 8, Step 5, .25 FTE)

The transition to the new organizational structure shown above can be accomplished by a combination of attrition, reclassification, redefining roles and job descriptions, and/or other means. Changes in positions, titles and salaries may be subject to negotiation and collective bargaining. The proposed reorganized department contains a new position, and representative duties and responsibilities are briefly described in previous sections of this report. A sample job description is attached as Appendix A to this report.

Recommendations

The district should:

1. Eliminate the part-time technology coordinator position and create a full-time classified information technology manager position that works 12 months per year, and focuses on providing leadership, directions, and standards for technology.
2. Increase one technology specialist position from .75 FTE to 1.0 FTE. This along with the change to a full time information technology manager position would increase total technology support from 1.9375 FTE to 2.6875 FTE.
3. Reorganize the reporting structure of the technology specialists and computer repair technician so that they report to the information technology manager, creating a true IT Department.
4. Create a job description for the computer repair technician position. A sample job description is attached as Appendix A to this report.
5. Evaluate the possibility of transitioning the part-time computer repair technician position to a technology specialist position in the future to better meet the district's increasing technical assistance needs.
6. Establish regular technology team meetings.
7. Train the technology support staff in current and future platforms.

Appendices

Appendix A – Sample Job Descriptions

Information Technology Manager

Definition
Under general supervision to oversee and supervise the planning, installation and continuing operation of software, hardware, network, security, and other technology assets; to ensure that hardware and software intended for classroom learning and other district functions are reliable, to encourage increased user skill and knowledge; and to perform related work as assigned.

Distinguishing Characteristics
This class is distinguished from other technologies positions by its focus on coordination of all technology support to ensure appropriate and efficient use of hardware, software and support personnel in the district.

Examples of Duties

- Organizes and coordinates resources needed to solve technical problem, tracking all activities until the problem is solved
- Oversees, in cooperation with the technology support staff, device, network, and software installations
- Coordinates work assignments for all technology support staff
- Ensures that equipment security and inventory procedures are followed;
- Tracks orders for software, oversee its installation and ensure it is being used as requester described;
- Ensures that software supports the curriculum that is in use and is shared with others in the department;
- Assists in developing policies for acquisition and disposal of equipment
- Assists in development of hardware and software standards
- Assists in developing policies for acquisition and disposal of equipment
- Maintains a current inventory of hardware, software, and software licenses
- Assists in the development of a technology plan for the district and school sites
- Ensures that physical and user security is implemented and user policy is workable and implemented

Qualifications

Knowledge of:

Principles, capabilities and operations of computer hardware, networks, software and peripheral devices;
Budget management to ensure results within resources available.
Project management, including planning, organizing, leading and controlling projects or groups.
General office practices and procedures.

Skill in:

Using computers and related software, preferably both PC and MAC.

Establishing and maintaining effective working relationships with a variety of groups, including teachers, students, administrators, co-workers vendors, consultants, community, and others as required.
Planning, organizing, managing, coordinating, implementing and monitoring projects related to site technology use.
Operating within a budget.
Keeping records.

Ability to:

Work independently
Establish work priorities
Read and comprehend technical manuals

Education:

Equivalent to two years college level coursework in computers, electronics or closely related fields and three to five years of increasingly responsible experience in the management of technology projects

Computer Repair Technician

JOB DESCRIPTION:

JOB SUMMARY:

To perform computer user support work at district locations; Install software and modify or make minor enhancements to computer equipment and provides assistance to district staff.

SUPERVISION:

Positions in this classification receive supervision and general direction from the Information Technology Manager. Positions in this classification exercise no supervision.

EXAMPLES OF DUTIES:

ESSENTIAL JOB FUNCTIONS:

Duties may include, but are not limited to, the following:

- Provides a variety of assistance to site staff whose duties involve the operation and use of computers, devices, and software supplied by the district, such as assistance with malfunctioning peripherals with log on problems and other general technical problems
- Performs computer system setup.
- Installs software.
- Makes and tests appropriate connections.
- Tests operation of the various components, and solves minor problems encountered.
- Makes minor hardware modifications/enhancements such as card installation, hard drive replacement, and memory capacity.
- Installs additional software and newer versions as needed.
- Gives computer operation orientations to new users and refresher orientations as needed.
- Provides a variety of advice to site staff to assist their efficient use of computer system in work activities.
- Reports technical problems to appropriate district staff.
- May consult Information Technology staff to ensure/restore data transmission.
- May perform routine activities involving site network.
- May route computer cables.
- May provide assistance in the preparation of informal user instructions and of requisitions for equipment.
- Performs job related duties as assigned.

QUALIFICATIONS:

EXPERIENCE AND EDUCATION/TRAINING:

Two years of fulltime paid experience planning, designing, and administering computers in a computer network environment. High school graduation or the equivalent.

LICENSES/CERTIFICATES/REGISTRATIONS:

A valid California driver's license and auto liability insurance must be presented upon offer of employment and maintained throughout employment in this position.

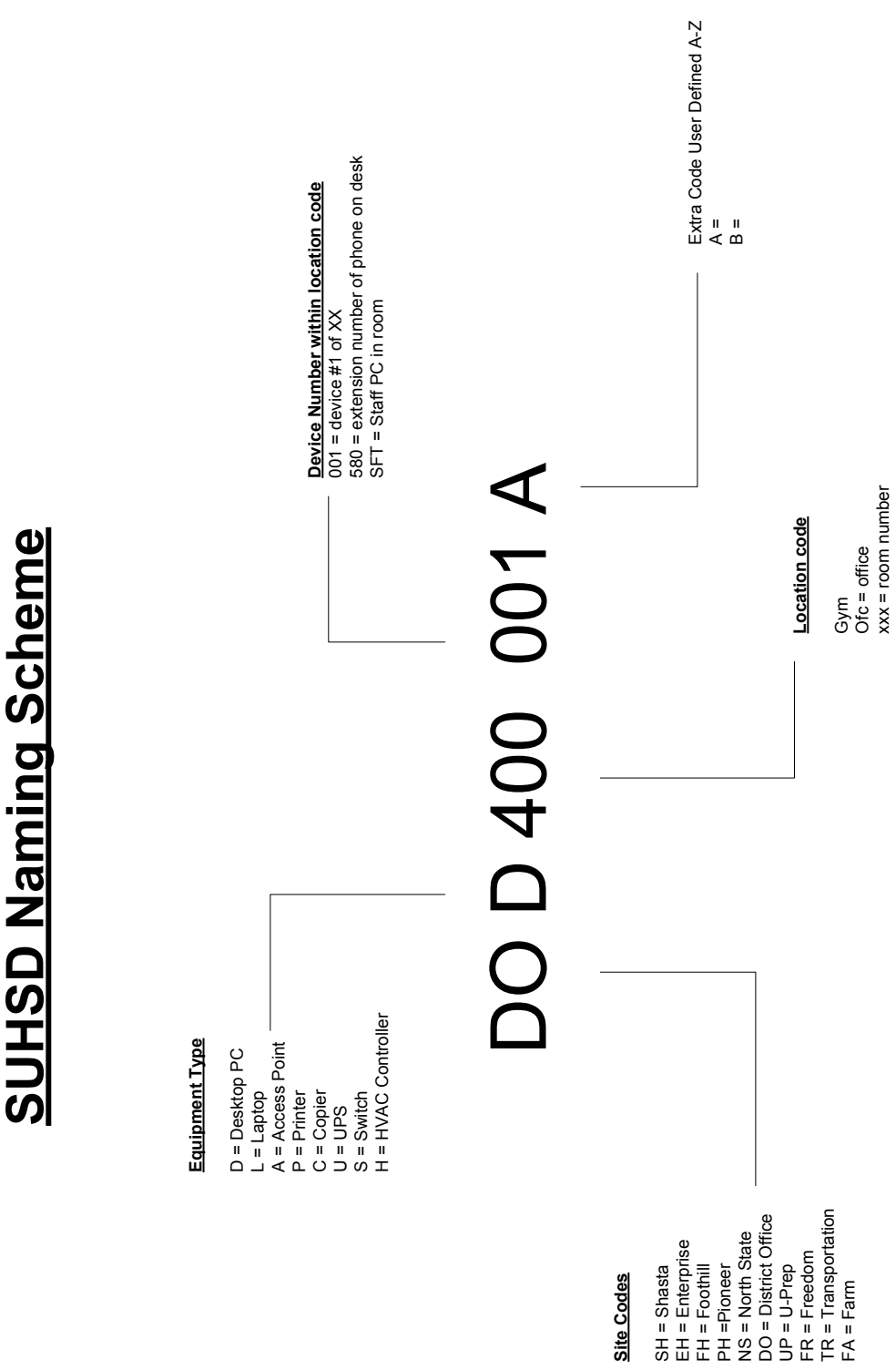
ADDITONAL INFORMATION:

DISTINGUISHING CHARACTRISTICS:

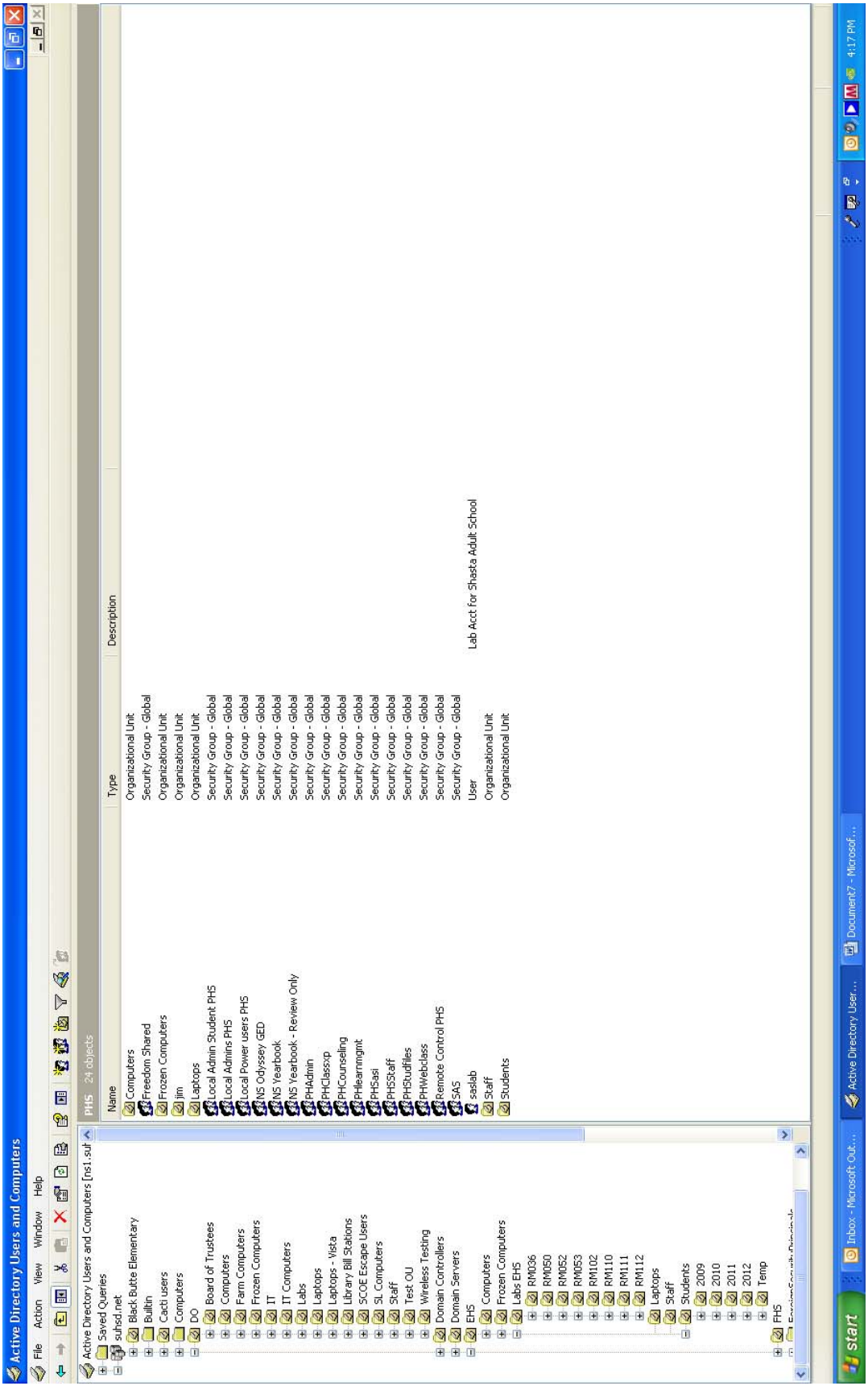
There are no distinguishing characteristics for this classification.

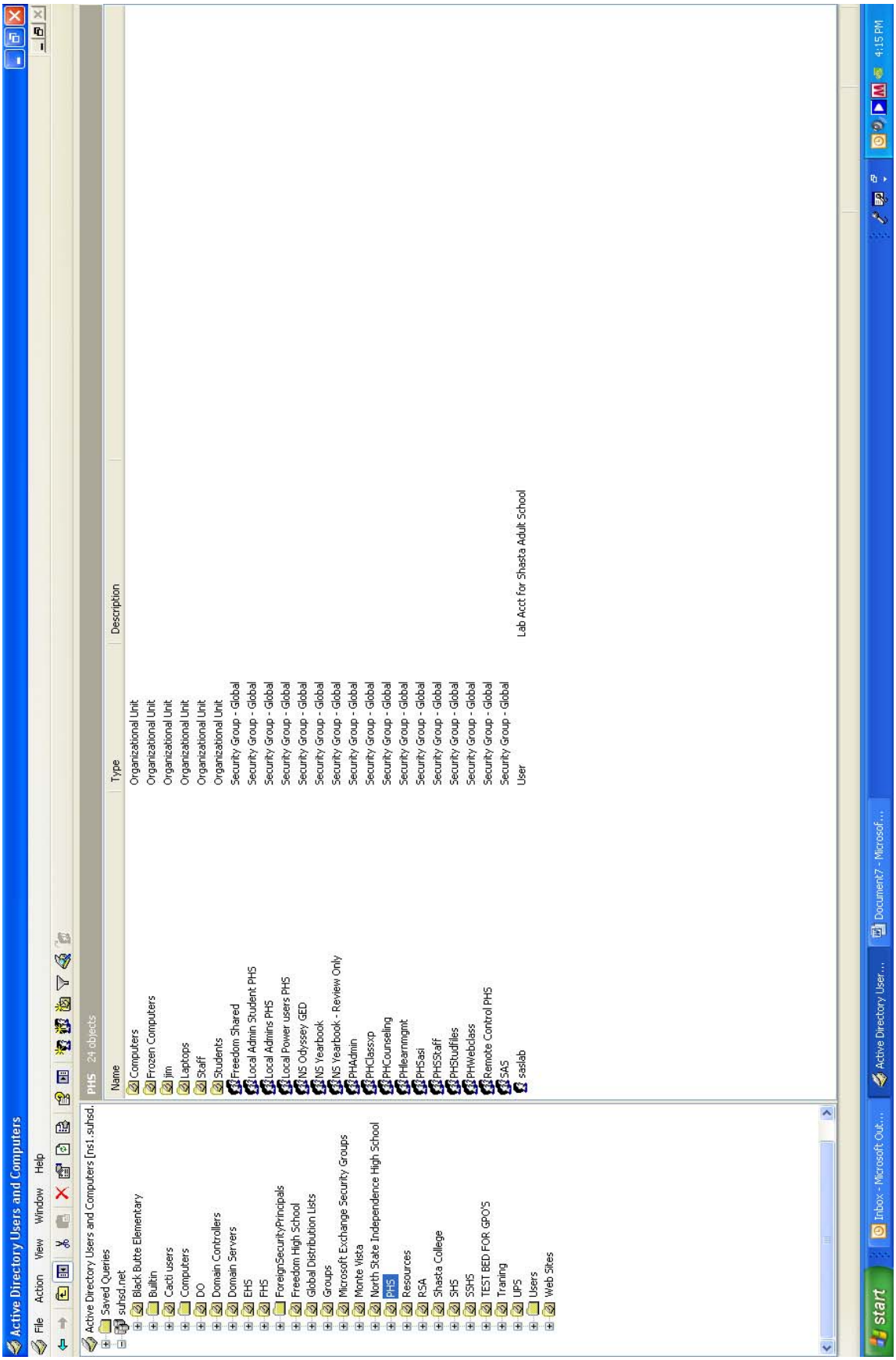
SPECIAL REQUIREMENT: Personal transportation for travel throughout the District.

Appendix B – Device Naming Example



Appendix C – Active Directory Example




Active Directory Users and Computers
File Action View Window Help
Active Directory Users and Computers [ns1.suhsd.
Saved Queries
suhsd.net
Black Butte Elementary
Builtin
Cacti users
Computers
DO
Domain Controllers
Domain Servers
EHS
FHS
ForeignSecurityPrincipals
Freedom High School
Global Distribution Lists
Groups
Microsoft Exchange Security Groups
Monte Vista
North State Independence High School
PHS
Resources
RSA
Shasta College
SHS
SSHS
TEST BED FOR GPO'S
Training
UPS
Users
Web Sites
PHS 24 objects
Name
Type
Description
Computers
Organizational Unit
Frozen Computers
Organizational Unit
jim
Organizational Unit
Laptops
Organizational Unit
Staff
Organizational Unit
Students
Organizational Unit
Freedom Shared
Security Group - Global
Local Admin Student PHS
Security Group - Global
Local Admins PHS
Security Group - Global
Local Power users PHS
Security Group - Global
NS Odyssey GED
Security Group - Global
NS Yearbook
Security Group - Global
NS Yearbook - Review Only
Security Group - Global
PHAdmin
Security Group - Global
PHClassxp
Security Group - Global
PHCounseling
Security Group - Global
PHlearnmgmt
Security Group - Global
PHSasi
Security Group - Global
PHSStaff
Security Group - Global
PHStudfiles
Security Group - Global
PHWebclass
Security Group - Global
Remote Control PHS
Security Group - Global
SAS
Security Group - Global
saslab
User
Lab Acct for Shasta Adult School
start
Inbox - Microsoft Out...
Active Directory User...
Document7 - Microsof...
4:15 PM

Appendix D – Study Agreement

FCMAT
FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
CSIS California School Information Services

FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
STUDY AGREEMENT
February 21, 2014

The Fiscal Crisis and Management Assistance Team (FCMAT), hereinafter referred to as the team, and the Scott Valley Unified School District, hereinafter referred to as the district, mutually agree as follows:

1. BASIS OF AGREEMENT

The team provides a variety of services to school districts and county offices of education upon request. The district has requested that the team assign professionals to study specific aspects of the district's operations. These professionals may include staff of the team, county offices of education, the California State Department of Education, school districts, or private contractors. All work shall be performed in accordance with the terms and conditions of this agreement.

In keeping with the provisions of Assembly Bill 1200, the county superintendent will be notified of this agreement between the district and FCMAT and will receive a copy of the final report. The final report will also be published on the FCMAT website.

2. SCOPE OF THE WORK

A. Scope and Objectives of the Study

Policies and Plans

1. Review the district's board policies, administrative regulations, equipment replacement plans and technology master plans to ensure that technology is effectively integrated into the schools. The evaluation will include the district's plan for using technology to support education reform by acquiring new hardware.

Hardware and Software Standards, Procurement, Replacement, and Tracking

2. Review innovative or emerging technologies and make recommendations to standardize the purchase of technology hardware. Evaluate the district's procurement practices to determine whether performance and reliability are maximized to help increase student learning.

3. Evaluate the district's method of establishing hardware and software standards for devices and the process used to communicate this information throughout the district.

4. Review the district's technology asset inventory process including receiving, tagging, logging, assignment and disposal. Review the district's board policies and administrative regulations related to mandated inventory and reporting of such assets. Make recommendations for improvements to the process, policies, and regulations to increase efficiencies and the accuracy of the data.

Network Infrastructure

5. Evaluate the district's core network infrastructure, focusing on the suitability of the installed equipment. Perform an analysis of infrastructure maintenance and support costs, and make recommendations for any needed changes.

Staffing, Organization, Service and Support

6. Evaluate the organizational structure, staffing, workflow, efficiency and duties of the technology department personnel. This will include a comparison of operational practices with board policies and administrative procedures. The team will evaluate the workflow and distribution of technology duties and make recommendations for improved efficiency if needed.

7. Review all technology-related job descriptions, interview staff, and make recommendations for improvements. All recommendations will include the estimated cost or savings of any proposed reductions or increases in positions to improve the organizational structure. In addition, the team may interview other staff including, but not limited to, site principals, department directors, and certificated and classified personnel to determine the efficiency and effectiveness of services to school sites or other departments.

8. Analyze staffing and organizational support for the following:
   a) User and desktop support
   b) Network administration
   c) Website development and support
   d) Email support for district and site staff
   e) Hardware installation and setup
   f) Support of technology in the classrooms

9. Review technology support for the district classrooms, focusing on response times, help desk processes, and prioritization. Evaluation will be based on staff interviews and documents the district provides. The team will provide recommendations for improved quality and efficiency.

10. Evaluate the technology department's readiness for online student assessments for the new Common Core State Standards. This will include examination of data bandwidth to school sites, network infrastructure and professional development to support testing, and the district's plans regarding testing devices. The team will provide recommendations to improve implementation and support.

B. Services and Products to be Provided

1. Orientation Meeting - The team will conduct an orientation session at the district to brief district management and supervisory personnel on the team's procedures and the purpose and schedule of the study.
2. On-site Review - The team will conduct an on-site review at the district office and at school sites if necessary.
3. Exit Report - The team will hold an exit meeting at the conclusion of the on-site review to inform the district of significant findings and recommendations to that point.
4. Exit Letter – Approximately 10 days after the exit meeting, the team will issue an exit letter briefly summarizing significant findings and recommendations to date and memorializing the topics discussed in the exit meeting.
5. Draft Reports - Electronic copies of a preliminary draft report will be delivered to the district's administration for review and comment.
6. Final Report - Electronic copies of the final report will be delivered to the district's administration and to the county superintendent following completion of the review. Printed copies are available from FCMAT upon request.
7. Follow-Up Support – If requested, FCMAT will return to the district at no cost six months after completion of the study to assess the district's progress in implementing the recommendations included in the report. Progress in implementing the recommendations will be documented to the district in a FCMAT management letter.

3. PROJECT PERSONNEL

The study team will be supervised by Anthony L. Bridges, CFE, CICA, Deputy Executive Officer, Fiscal Crisis and Management Assistance Team, Kern County Superintendent of Schools Office. The study team may also include:

A.	***Scott Sexsmith***	***FCMAT Management Analyst, Project Lead***
B.	***To be determined***	***FCMAT Consultant***

Other equally qualified staff or consultants will be substituted in the event one of the above individuals is unable to participate in the study.

4. PROJECT COSTS

The cost for studies requested pursuant to E.C. 42127.8(d)(1) shall be as follows:

A. $500 per day for each staff member while on site, conducting fieldwork at other locations, preparing and presenting reports, or participating in meetings. The cost of independent FCMAT consultants will be billed at their actual daily rate.

B. All out-of-pocket expenses, including travel, meals and lodging.

C. The district will be invoiced at actual costs, with 50% of the estimated cost due following the completion of the on-site review and the remaining amount due upon the district's acceptance of the final report.

Based on the elements noted in section 2 A, the total estimated cost of the study will be $12,000.

D. Any change to the scope will affect the estimate of total cost.

Payments for FCMAT's services are payable to Kern County Superintendent of Schools - Administrative Agent.

5. RESPONSIBILITIES OF THE DISTRICT

A. The district will provide office and conference room space during on-site reviews.

B. The district will provide the following if requested:

1. Policies, regulations and prior reports that address the study scope.
2. Current or proposed organizational charts.
3. Current and two prior years' audit reports.

4. Any documents requested on a supplemental list. Documents requested on the supplemental list should be provided to FCMAT only in electronic format; if only hard copies are available, they should be scanned by the district and sent to FCMAT in electronic format.
5. Documents should be provided in advance of field work; any delay in the receipt of the requested documents may affect the start date of the project. Upon approval of the signed study agreement, access will be provided to FCMAT's online SharePoint document repository, to which the district will upload all requested documents.

C. The district's administration will review a preliminary draft copy of the report resulting from the study. Any comments regarding the accuracy of the data presented in the report or the practicability of the recommendations will be reviewed with the team prior to completion of the final report.

Pursuant to EC 45125.1(c), representatives of FCMAT will have limited contact with pupils. The district shall take appropriate steps to comply with EC 45125.1(c).

6. PROJECT SCHEDULE

The following schedule outlines the planned completion dates for different phases of the study:

Orientation:	April/May 2014
Staff Interviews:	to be determined
Exit Meeting:	to be determined
Preliminary Report Submitted:	to be determined
Final Report Submitted:	to be determined
Board Presentation:	to be determined, if requested
Follow-Up Support:	if requested

7. **CONTACT PERSON**

Name: Kerri Hubbard, CBO
Telephone: (530) 468-2727
Fax: (530) 468-2729
E-mail: khubbard@svusd.us

2/21/14

Allen Carver, Superintendent — Date
Scott Valley Unified School District

February 21, 2014

Anthony L. Bridges, CFE, CICA — Date
Deputy Executive Officer
Fiscal Crisis and Management Assistance Team

6