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

Lake Elsinore Unified School District

Technology Review

December 21, 2015

Joel D. Montero
Chief Executive Officer



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FISCAL CRISIS & MANAGEMENT
ASSISTANCE TEAM
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Doug Kimberly, Ed.D., Superintendent
Lake Elsinore Unified School District
545 Chaney Street
Lake Elsinore, CA 92530

Dear Superintendent Kimberly:

In October 2014, the Lake Elsinore 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. Conduct a comprehensive analysis of the district's state of technology including hardware, software, department staffing, and technology use. Interview principals, department directors and classified staff to gather data on the software applications and hardware utilized. Review and analyze the district's technology master plan.

2. Analyze the status of the following:

a. Project management
b. Infrastructure planning, deployment, and maintenance
c. Network administration
d. Website development and support
e. Hardware installation and setup
f. Application software used at district and site levels
g. Technology in the classrooms

3. Review the job descriptions, skill level, and staffing of the Technology Department, including any site level support. The Technology Department consists of one director, two managers and six technicians.

4. Review district board policies on the use and integration of technology for district-level and site-based instruction.

5. Make staffing recommendations based on the support level necessary to meet the district's technology requirements.

6. Review the network design for systems data safeguards against a catastrophic event or security breach.

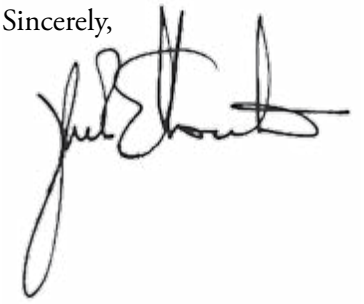
7. Review the processes or planning in place for ensuring that hardware and software assets are up to date.

8. Review staffing levels, infrastructure, and professional development related to support of online assessment testing.

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 Lake Elsinore Unified School District for their cooperation and assistance during fieldwork.

Sincerely,



Joel D. Montero

Chief Executive Officer

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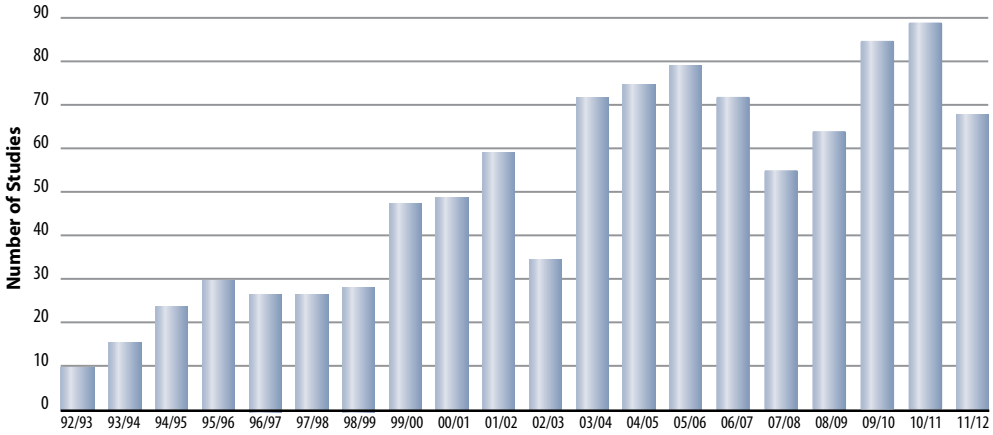
About FCMAT

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 Lake Elsinore Unified School District is located in western Riverside County and provides educational services to students in the city of Lake Elsinore, home to more than 57,000 residents. The district was formed in 1988, when a unification vote was approved to combine the Elsinore Elementary District and the Elsinore Union High School District into one district with a single governing body. The district serves an ethnically diverse student population of more than 22,000 at 25 schools including one alternative school, one continuation school, 15 elementary schools, three high schools, one K-12 school, and four middle schools. Two of these schools are charter schools, with enrollment that has grown from 259 in 2009-10 to 665 in 2013-14. The district's general fund budget in 2013-14 was approximately $171 million.

Study Team

The study team was composed of the following members:

Scott Sexsmith
FCMAT Management Analyst
Bakersfield, CA

John Lotze
FCMAT Technical Writer
Bakersfield, CA

Craig Blackburn*
Director, Technology Programs and Instructional Support Center
Santa Clara County Office of Education
San Jose, CA

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Director of Information Technology
Kings County Office of Education
Hanford, 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 its accuracy and to achieve consensus on the final recommendations.

Study Guidelines

In October 2014 the Lake Elsinore Unified School District requested that FCMAT review its technology support services. FCMAT visited the district on December 4-5, 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 Staffing Overview
- Technology Planning, Leadership and Vision
- Technology in the Classroom

- Services
- Network Administration and Infrastructure
- Disaster Recovery and Data Center
- Technology Support Staffing and Organization
- 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

K-12 education continues to change rapidly as technology becomes more interwoven in the curriculum and in learning. Districts are spending large amounts of human and financial resources to help improve student learning using technology. The use of technology needs to be carefully guided using best practices and researched-based methods. The effort to use technology effectively in the classroom must be led by a qualified certificated employee, often referred to as a director of educational technology.

Working together with an astute technology professional such as a chief technology officer (CTO), a district can create plans to select products, train staff, implement software and hardware, and review effectiveness. The CTO can ensure that the technical resources are in place to support technologies and training plans through careful use of financial and human resources.

The state recently approved major changes to the K-12 curriculum with the addition of the Common Core State Standards (CCSS) 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

The district's technology support is provided by 13 full-time staff including a director, a systems and network administrator, a database administrator, two computer technician II positions, seven computer technician I positions, and a secretary III.

Technology Planning, Leadership and Vision

The district's technology plan expires in June 2016. With the creation of the Local Control Accountability Plan (LCAP), the technology plan should be rewritten to ensure that it aligns with the goals set in the LCAP. To ensure accurate feedback from teachers and administrators, a high percentage of these staff need to be engaged in developing and participating in professional development. Equity of student access to technology at different schools should also be addressed. The district should hire a CTO to oversee all technology initiatives, develop a unified plan for technology, develop a strategic plan to accomplish the vision, and implement systems that support and guide the strategic plan.

Technology in the Classroom

Board Policy 6163.4 and the supporting administrative regulation state that the principal shall oversee the school's technological resources. The interpretation of this policy resulted in technology acquisition being delegated to each school using site funding. During site visits, FCMAT confirmed that applying this interpretation of the policy has led to schools with widely varying levels of student access to up-to-date computers and digital resources. This creates a disparity of access to a resource the district considers integral to the curriculum. There are instances of technology used successfully for learning, but these are the result of initiatives by individual teachers rather than a comprehensive and well-supported district plan. The district's strategy of site-based funding for technology has already led to disparities in access for students, and continuing this strategy will likely increase the disparities, thus denying some students equitable access to the core curriculum.

Services

The district maintains its official website and associated Web pages on the School Fusion system, which appears to meet the district's needs. However, many Web pages are outdated, and other related Web pages are not hosted on the School Fusion system. Board Policy and the accompanying Administrative Regulation 4040 state, "Employees shall not develop any …. websites…. without permission of the Superintendent or designee." This administrative regulation is not enforced, and many sites are hosted elsewhere. Those responsible for Web content receive little or no district training on best practices for publishing pages on the Web.

The district's Internet filter should be reconfigured to block all inappropriate sites from anywhere on the network and to allow school staff to temporarily override the filter locally for educational appropriate material.

Network Administration and Infrastructure

No employee is cross-trained and designated to serve as a backup for the systems/network administrator, who is responsible for both the network and server infrastructure. As the district continues to increase its use of online resources, the demand for bandwidth will continue to increase and may quickly exceed the capacity of the currently one gigabit per second (1 Gbps) connection provided by Time Warner Cable. The network requires all schools to share this 1 Gbps connection, so there is the potential for bandwidth restriction. The current bandwidth meets the minimum requirement of 20 kilobits per second (20kbps) per student for the California Assessment of Student Performance and Progress (CAASPP) but falls short of the recommendation of 100Kbps per student as outlined on the Smarter Balanced Assessment Consortium (SBAC) website. The district is increasing the number of wireless access points and overall wireless coverage but is doing so without a published plan for deployment and coverage.

Disaster Recovery and Data Center

Backup data is stored at offsite electronic storage located at Lakeside High School. However, staff have not performed a disaster recovery test to determine how long it would take to get critical systems back online after a failure and the district does not have enough hardware at Lakeside High School to restore critical systems if the main data center sustained a catastrophic failure.

The current configuration of the data center may not adequately protect the district from a catastrophic disruption in service. The center has no fire suppression, and the fiber used for network connectivity enters the data center through a junction box attached to the exterior of the building at the back. Opening the junction box allows access to all fiber optic cable that connects the schools as well as the district's fiber optic connection to the Internet. Unauthorized access to the junction box could easily allow damage to the wide area network, causing all sites to lose connectivity and Internet access.

Technology Support Staffing and Organization

The district should create a CTO position to oversee a comprehensive technology department consisting of an information technology services group and an educational technology group. This position should report to the superintendent.

Information Technology Services

Primary responsibilities for network and systems administration are performed by a single position with the title of network and systems administrator; however, the job description for this position is titled "Network Administrator." In a district of this size, the duties and responsibilities of a network administrator and systems administrator should be performed by two separate positions.

The network/systems administrator position should be eliminated and its duties split between a new network administrator position and a new systems administrator position. A help desk technician position should be created to perform the technical support duties performed by the secretary III. The computer technician I and computer technician II positions should be eliminated and replaced by a series of technology support specialist I, technology support specialist II, and technology support specialist III positions. A support services manager position should be created to oversee the help desk technician and all technology support specialist positions.

Educational Technology

To meet the district's educational technology needs, a director of educational technology position should be created who reports to the CTO. The teacher on special assignment (TOSA) should report to the director of educational technology.

Findings and Recommendations

Technology Staffing Overview

The district's technology support is provided by 13 full-time positions including a director, a systems and network administrator, a database administrator, two computer technician II positions, seven computer technician I positions, and a secretary III position. Staffing is discussed throughout this report and in detail in the Technology Support Staffing and Organization section.

Technology Planning, Leadership and Vision

Planning

The district's technology plan is dated May 2013 and expires in June 2016. The plan follows the template that was required when it was created and that was based on federal E-Rate and Enhancing Education through Technology (EETT) requirements. These requirements are no longer in effect. The technology master plan should support the district's mission statement, which states:

> Through a shared commitment with our community, we ensure rigorous, relevant, and globally competitive opportunities for each student in a supportive learning environment.

The plan acknowledges that technology is no longer a supplement to the curriculum but an integral part of it. The plan sets an appropriate purpose for technology: it states that hardware and software can be used to present curriculum in engaging ways, including the use of student intervention programs, and to share student progress with parents and administrators.

According to the technology plan, the district believes in and is expanding access for all students, including ensuring that each student has access to a technology device for learning; this strategy includes the use of iPads. The plan calls for an appropriate level of access for all students to support classroom learning and instruction; thus iPads are to be used for Internet access, research, and cloud and Web-based applications. Staff indicated strong support for this goal.

District support to achieve the curricular goals listed in the plan includes ensuring the use of technology to maximize learning for students and staff; recruiting and retaining the highest caliber staff; continuing to build trust through collaborative relationships; aligning district and school site budgets to meet the needs of students and staff; providing appropriate professional development to all staff; and monitoring and evaluating the effectiveness of district educational programs.

The plan states the district's belief that instructional technology should be accessible to all students 24 hours a day, seven days a week, and it notes the goal of providing 1-to-1 access to devices for all students. This goal supports the district's desire to implement blended learning districtwide that "incorporates use of technology within the classroom and online learning that can be accessed at home." In section 5b (p. 57), the hardware acquisition plan sets a goal of one computing device less than 48 months old for every 6.4 students. This would move the district from its 2013 ratio of 10.9 students per device but still be far short of the 1-to-1 goal stated in the plan.

According to the technology plan, the district technology advisory committee (DTAC) consists of the directors of curriculum and instruction, the director of information technology services (ITS), the instructional technology specialist, instructional technology teachers on special assignment (TOSAs), the career technical education advisory committee, representatives from the special education and English learner departments, and additional school technology leaders. Page 22 of the plan states, "These stakeholders are continuously involved in decision-making and technology plan evaluation through monthly meetings." Interviews with staff indicated that the composition of the DTAC has changed, notably with the director of ITS attending by invitation only. Outcomes of the DTAC meetings are communicated to the director of ITS and include direction for the director to implement.

The professional development section of the plan used a technology survey of teachers and administrators. Teacher survey data was based on 169 responses. According to the DataQuest website (dq.cde.ca.gov), the district employed 934 teachers during the 2012-2013 school year. It is significant that the technology plan did not include feedback from nearly 82% of the district's teachers or from slightly more than half (52%) of administrators.

Since the creation of the technology plan, the district has implemented a Local Control Accountability Plan (LCAP). The LCAP indicates how the district intends to use the money received from the Local Control Funding Formula (LCFF), which the state uses to determine school district funding. The district's LCAP goals for student achievement do not correlate with the student goals in its technology plan. For example, the technology plan states that by June 2016, 50% of graduating students will have met the course requirements for admittance to the University of California and California State University systems (known as A-G requirements); however, the district's LCAP states that 42% of students will either have completed or be enrolled in A-G courses by June 2016.

School districts are required to use the LCAP to guide their education programs, and LCAPs are subject to county office of education approval and oversight. Therefore, all subordinate plans, including the technology plan, should be aligned with the district's LCAP. The district's technology plan goals do not match those in its LCAP, which leads to confusion regarding which parts of the technology plan remain valid. The district's commitment to install wireless networks to serve all classrooms and study areas on every campus is supported in the LCAP. Although complex, installing a wireless network is only the first of several steps needed to achieve the district's goal of using technology for student learning.

The technology plan acknowledges that technology is an integral part of the Common Core State Standards (CCSS); however, interviews with staff found the district lacks a coordinated professional development plan to help ensure all instructional staff and administrators are ready for the standards that explicitly require technology. The section of this report titled Certificated Professional Development provides more detail on this subject.

The district's belief that instructional technology should be accessible to students 24 hours a day, seven days a week is commendable. This issue is significant because of the need to provide a free appropriate public education to *all* students. The district's plan does not address equitable access to learning resources during nonschool hours other than at the public library and community centers. Although the plan states that 97.8% of students have computers with Internet access at home, it is not clear if that percentage is calculated solely from families that responded to the survey or is representative of all students' families. In addition, the plan includes percentages of students with cell phones that have Internet access; however, it should not be assumed that schoolwork can or should be completed using a cell phone.

Equally concerning is the disparity in students' access to up-to-date devices on campus. The technology plan (p. 12) cites the ratio of up-to-date computers per student at each campus. The table below shows this data and highlights the disparity among campuses:

Level	Lowest Ratio	Highest Ratio
Elementary Schools	10.5-to-1	21.2-to-1
Middle Schools	6.3-to-1	10.3-to-1
Comprehensive High Schools	8.9-to-1	22.3-to-1
Continuation School	2-to-1	N/A
So. Cal. Online	1.8-to-1	N/A

Funding for computers and other devices has been delegated to individual schools. As the table above indicates, this strategy has led to disparities in providing students access to an integral part of the curriculum. Recent iPad purchases are not included in the above ratios because at the time of FCMAT's fieldwork, iPad access to a reliable wireless network existed only in limited areas on each campus and therefore could not provide students with consistent access to all learning resources.

Districts implementing best practices are revising or rewriting technology plans using their approved LCAP as the guiding document and using reliable research data including data on frequency of access to technology and related online resources in addition to skills. These revised plans consider equitable access to technology for all students, and they include professional development strategies for instructional staff and administrators on how to implement the Common Core State Standards that require students to use technology.

Recommendations

The district should:

1. Implement a research-based survey having features similar to BrightBytes Clarity that provides statistically reliable data about technology access and use in classrooms and at home. Develop and implement a strategy to ensure that 80% or more of teachers and administrators participate in the survey.
2. Rewrite the technology plan using the district's approved LCAP as the guiding document as well as data gathered through the survey instrument in the recommendation above.
3. Develop and implement a funding plan that provides all students with equitable access to digital learning tools and resources.
4. Continue to make installing robust wireless networks that cover all classrooms and other learning areas a top priority.

Leadership and Vision

The Information Technology Services (ITS) Department is led by a director and includes 12 staff members, all of whom report to the director. The director reports to the assistant superintendent, facilities and operations; this reporting structure is uncommon, especially in districts of similar size.

Non-ITS staff at all levels consistently indicated that the district philosophy is for the Technology Department to operate "behind the scenes" and therefore not be visible. The district has made this philosophy part of its operations through its reporting structure and through leadership roles on important committees. For example, the technology director attends DTAC meetings by invitation only. When not invited, the director is provided with a briefing of discussion points and decisions from the meeting.

Staff reported many different visions for technology; there was no consistent expression of a unified vision for technology as a component of learning and instruction. The most consistent responses when asked about the vision for technology were regarding iPad implementation and wireless networks. Staff also do not clearly understand who is responsible for creating a unified vision for technology. For example, many staff members indicated that the DTAC is responsible for the task, while many others identified the superintendent or the ITS director as having this responsibility. When asked about the leadership responsibilities of DTAC, responses ranged from the belief that the DTAC tells the ITS department what to do, to the belief that the DTAC is only an advisory committee for educational technology. Those who indicated that the DTAC was an advisory committee were unable to identify who the committee advises: some stated it was the ITS director, and others stated it was the superintendent and cabinet.

Technology in school systems, as in other sectors, has transformed from an operational function to a strategic asset. The district's philosophy that technology should not be visible ignores the strategic importance of technology in fulfilling all aspects of the district's mission. Adherence to this philosophy has resulted in technology leaders being provided with piecemeal information regarding desired outcomes and thus has hindered effective long-range strategic planning for technology. This in turn has resulted in poorly planned and executed projects, such as the first attempt at building a wireless infrastructure; projects that have been allowed to become outdated, such as the digital high school at Temescal Canyon; and staff at all levels being frustrated with technology access, service, and support. This approach has led to reduced operational efficiency and weakened customer service.

The lack of a unified vision has resulted in the district investing time and money to acquire and support disparate projects that individual schools had the resources to purchase and implement. Individual schools had been allowed to create their own de facto visions for technology based on available funding and the desire of individual school administrators and faculty. This distributed approach to funding and to setting the educational vision has resulted in students at different campuses having different access to technology resources, and thus different educational opportunities and programs. The lack of a unified vision for technology has also allowed programs to languish as computer assets aged without an established replacement cycle. For example, the desktop computers in one computer lab FCMAT visited were more than 10 years old.

Non-ITS staff articulated the vision for technology in terms of infrastructure (wireless access) and devices (iPads). This is evidence of the need for a clearly articulated, common vision for technology in all areas including instruction and learning, administration, operations, and business. The vision needs to focus on productivity and learning outcomes rather than how these are accomplished.

The DTAC's purpose is not well defined and has led to confusion about the direction for technology in general and educational technology in particular. Staff reported common agreement that the DTAC is charged with creating the roadmap for professional development and activities and is focused strictly on the learning and instructional applications of technology. The DTAC is co-chaired by the principal of the Southern California Online Academy and a representative

from the teachers' association, but its meetings have not included the technology director, who is the district's senior technology leader.

The district's philosophy that technology should remain behind the scenes and not be visible, combined with the lack of a clear, unified vision for technology, has resulted in isolation of ITS from the district's strategic mission. As a result, the department can only react to issues as they are predefined and presented rather than being proactive in determining well researched and informed strategies for technology solutions, service and delivery.

School districts that use technology as a vital strategic asset have a knowledgeable and well-rounded technology leader, who in most cases reports directly to the superintendent, serves as a member of the superintendent's cabinet, and therefore is well informed about all the district's strategic issues. These technology leaders often have a title of chief technology officer (CTO) and are well versed in all functions of school systems including business, human resources, administration and support, and learning and instruction. Most important, the CTO is an expert in technology systems, data security and privacy, and applicable laws, and is a skilled executive leader. The CTO is responsible for working directly with other district administrators and their teams to develop a unified vision for technology, develop a strategic plan to accomplish the vision, and implement systems that support and guide the strategic plan. Although the CTO position can be classified or certificated, the district's immediate needs are in the area of instructional technology and might be best met by a credentialed administrator.

A skilled CTO ensures that the district has infrastructures and systems that allow technology to function consistently with minimal effort.

Districts that have highly functioning technology services have a comprehensive plan for gathering feedback from users and communicating clearly to all sectors of the organization. These districts often have a comprehensive technology advisory committee, which can include standing subcommittees that focus on a specific area of technology use, such as the current DTAC's focus on technology for learning and instructional applications of technology The comprehensive technology advisory committee could also create temporary ad-hoc committees to focus on specific areas of need or explore emerging technologies. A best practice is for the CTO to chair the comprehensive technology advisory committee.

Recommendations

The district should:

1. Create a position of CTO that reports directly to the superintendent, and under his or her leadership develop a unified vision for technology and a supporting strategic plan to achieve the vision. Consider filling this position with a credentialed administrator (A sample job description is attached as Appendix A to this report).

2. Create a comprehensive technology advisory committee chaired by the CTO. Make the current DTAC a standing subcommittee of the comprehensive technology advisory committee. Consider giving the DTAC a name that better indicates its educational technology focus.

Technology in the Classroom

In the recent past, the district's educational technology use focused on preparing for the upcoming computer-adaptive testing, but there is widespread agreement that new administrative leaders have been proactive in shifting the focus to classroom instruction. Staff indicated a desire to use technology as part of daily instruction and expressed a belief that the obstacle to full implementation is the lack of a robust wireless network accessible from every classroom and common learning area. Interviews found a lack of a clear vision for learning technologies and iPads in general. For example, staff from some sites stated that new iPads were to be used exclusively for assessment, not as part of the daily learning environment.

Board Policy 6163.4 and the supporting administrative regulation state that the principal shall oversee the school's technological resources. The district's past interpretation delegated resources for acquiring technology to each school using school site funding. FCMAT's site visits confirmed that applying this interpretation of the policy has led to schools with widely varying student access to up-to-date computers and digital resources. This creates a disparity in access to a resource the district considers integral to the curriculum.

Successful uses of technology for learning in the district are the result of individual teachers' initiatives rather than districtwide vision and planning. These notable instances are restricted to the few classrooms with either newer wireless access or wired network access using aging hardware.

This limited pattern of successful technology use only as a result of relatively isolated and exceptional individual efforts, and the resulting disparity of access for students, will continue unless the district develops a unified vision and common goals for learning technologies. Without change, only some students will continue to have access to digital learning resources and all tools necessary to master all CCSS standards.

The district has not clearly defined its reasoning for or the guiding vision behind its goal of providing every student with a device that connects to digital learning resources 24 hours a day, seven days a week. As a result, some staff stated that the ultimate goal for learning technologies is for every student to have a personalized learning plan that makes full use of blended learning strategies to extend the classroom beyond the four walls and the traditional school hours; and other staff members' vision is to have students use the Internet for research. Although both may be appropriate, researching, developing and communicating a single unified vision for learning technologies would better serve all staff and students.

The district's strategy of school site-based funding for technology resources has already lead to disparities of access for students, and continuing this strategy will likely widen the disparity and thus deny some students equitable access to the core curriculum.

The district has no system for housing or archiving student-created work that can be used to demonstrate mastery of the Common Core State Standards. As students increase their use of technology in their daily work and create digital projects (including multimedia), it will be important to have a secure digital locker and electronic portfolio system for storing, publishing, and presenting their digital products.

Innovative districts use electronic portfolio systems that allow students to archive selected work samples, set goals, and publish portfolios for various audiences such as parent-teacher conferences, community educational showcases, college admission officers, and prospective employers.

Recommendations

The district should:

1. Develop a plan for funding device acquisition and digital resources that provides all students with equitable access to the core curriculum, including the standards in the CCSS that explicitly require the use of technology and digital resources.
2. Develop a vision for how students will use technology and digital learning resources, and a detailed plan for accomplishing that vision. Ensure that the detailed plan includes device and digital resource acquisition, how access to online resources will be provided, professional development for teachers, infrastructure requirements, professional development for technology staff, and ongoing support.
3. Establish a replacement plan for critical equipment and classroom devices that ensures all students have access to devices and resources that meet district standards.
4. Clarify Board Policy 6163.4 to make clear the principals' role in overseeing technology resources, specifically device acquisition.
5. Develop and implement a student portfolio system that will allow students to digitally archive work that they produce and use it to demonstrate their mastery of standards, create reflections, set learning goals, and report on progress toward learning goals.

Certificated Professional Development

Overall, teachers are not adequately prepared to implement the technology components of the CCSS. Teachers received training on the CCSS; however, it did not include a specific focus on the technology components. Interviews with staff indicated a general understanding of the importance of learning technologies and some excitement regarding iPads, but also a nearly complete lack of awareness of the explicit and implicit technology components in the CCSS. Last summer, the district offered 36 professional development sessions for teachers. Most sessions focused on the use of the grade book module in Infinite Campus, Google Drive, and Weebly website creation. Two focused on iPad apps that teachers and students can use for content creation. The professional development section of the district's technology plan notes that training is focused on integrating technology into daily curriculum, yet the action plan is mostly focused on how to use devices and applications. Staff expressed frustration at the lack of direction for integrating technology into the daily curriculum and the lack of a clear professional development plan to train teachers and administrators how to use technology as an integral part of the daily curriculum.

Without a basic awareness of the technology components in the CCSS, the district cannot expect a successful implementation of the technology components or full implementation of the CCSS in general. Professional development that focuses on how to use a particular device, application or website is a starting point, but will not lead to the thorough integration the district desires. Without a comprehensive plan for implementation of the technology components of CCSS and

an accompanying plan for professional development, the district can expect limited success for learning technologies that contribute to student mastery of the CCSS.

Districts using best practices for implementing the CCSS, including its technology components, focus on student learning via instruction and curriculum that leads to student mastery of the standards, which are in turn assessed. This approach puts the emphasis on student learning. Assessment then measures the degree to which students mastered the curriculum. Successful districts have also made the technology components of CCSS explicit and have identified how those components will be addressed. The most successful districts regularly assess teachers' and students' technology skills and their access to technology-dependent resources, and measure the degree to which students regularly use technology for learning. Data from this assessment are used to plan and deliver timely and differentiated professional development.

A major factor that has led to the lack of teacher preparedness to implement the technology components of CCSS is that teacher professional development in the district is mostly voluntary. Despite the best efforts of staff, including site-based technology coaches, the voluntary professional development has reached relatively few teachers; the district cannot expect to successfully implement the technology components of the CCSS using voluntary teacher professional development. As noted above, the CCSS cannot be fully implemented unless teachers have adequate technology knowledge and skills. In addition, FCMAT found no evidence of a specific professional development plan or strategy to equip school administrators to successfully lead, coach, and evaluate successful learning technology implementations and practices.

Best practices for school districts include multiple strategies for involving teachers in professional development, with the goal that every teacher receive appropriate training and support. Many districts use teacher incentive programs that offer equipment for their classroom, or continuing education units for salary schedule advancement, or hourly stipends. Other districts use substitutes so that teachers can attend training during the instructional day. More innovative districts use blended-learning professional development that includes an online component for knowledge acquisition and ongoing coaching. The most successful districts include administrators in the teacher training, and offer additional training and support specific to leadership and evaluation of learning technologies.

Recommendations

The district should:

1. Implement a research-based data survey with features similar to BrightBytes Clarity that provides statistically reliable data about technology access and use in classrooms and at home.
2. Based on data gathered from the survey, develop a comprehensive and differentiated professional development plan that focuses on academic content and student attainment of CCSS.
3. Develop a method to deliver professional development that ensures every teacher and administrator is trained and provided with ongoing coaching until the district determines that learning and instruction is making optimal use of technological and digital resources for every student.

4. Explore instructional technology certification courses such as those provided through Leading Edge Certification, and consider granting continuing education units or some other incentive for successful completion of a course. Information on Leading Edge Certification can be found at http://www.leadingedgecertification.org/.

Computer Devices

The district is transitioning from desktop computers and computer labs hardwired to the network to mobile devices for students and teachers.

The current desktop computers and lab computers are aging; many are eight to 10 years old. School staff reported that these computers no longer meet the schools' needs and need to be replaced. The technology staff members responsible for repairing and maintaining these devices are finding it difficult to repair many of them because of their age and a lack of parts. As computers fail, the cost of repair is evaluated, and systems are removed from service if the cost is higher than the value of the computer or if parts are not available. No replacement computer is provided when a computer is removed from a lab. If a teacher's desktop computer fails, it is replaced with a mobile device. School site staff indicated that the replacement devices do not always meet their needs. For example some teachers have DVDs they use in class, but the mobile devices provided do not include a DVD player. The alternative they are offered is to use online material.

The district selected the Apple iPad for students to use for the California Assessment of Student Performance and Progress (CAASSP) test. The district has also purchased iPad carts for the schools; these are used primarily for online testing, with only limited use in the daily curriculum. The district has contracted with outside vendors to help with the initial setup of the iPads; ongoing maintenance and installation of applications are the responsibility of the technology department.

Many districts have begun to integrate mobile devices with student learning. Many start with a plan and move to a pilot program before full implementation. During these early phases, these districts maintain their current hardware and software so teachers can continue to use them. As districts move to full implementation they help teachers transition to the new technology. This includes providing a support system to train teachers in using the new technology and selecting applications and online resources to replace previously used learning tools.

Recommendations

The district should:

1. Provide teachers with help finding replacements on the new technology for the learning tools they currently use.
2. Evaluate the software currently used in the labs and provide teachers with alternative applications and online resources.
3. Include teachers in the development of the standards for the equipment they use.
4. Evaluate the current condition of the desktop computers and lab computers. Communicate and implement a plan to address any needed replacements or upgrades.

Services

Website Development and Support

The district's Board Policy 4040 and its accompanying administrative regulation govern websites and other online material. Administrative Regulation 4040 states, in part, the following:

> Employees shall not develop any classroom or work-related web sites, blogs, forums, or similar online communications representing the district or using district equipment without permission of the Superintendent or designee.

The district maintains its official website and associated Web pages using a content management system hosted by School Fusion. This allows content to be updated by various users, most often site-based web administrators. A review of random school Web pages found that outdated content is common. Staff reported there is no formal content approval process prior to publishing content live to the website. Interviews with staff revealed that site-based Web administrators receive little or no district-provided training on best practices for publishing web content, district communication protocols, or basic communication strategies. Web administrators are usually self-taught or sought training from nondistrict sources. All websites viewed were able to render appropriately on a mobile device.

Despite Board Policy and Administrative Regulation 4040, many district staff acknowledged the existence of independent websites outside the district's approved channels. Sites such as Facebook, Weebly, and BigTeams.com host district-related content. The district does not have a formal approval process for such sites and could not immediately identify if any such sites were district-approved. Social media platforms such as Twitter are also used to inform and promote district activities, but staff indicated they have not received formal training regarding appropriate use of social media for district-related content.

Websites are the main communication method for schools and districts. Outdated content is often a concern when Web administrator duties are assigned as a teacher's adjunct duty or volunteers are relied on to update a website. Outdated content distracts and frustrates website visitors, discouraging return visits. Content that is constantly updated allows the viewers to find information more easily, encouraging return visits. Having information easily available on a website reduces the number of telephone calls and emails to school and district staff, which allows staff to focus on other important tasks with less interruption.

Untrained or undertrained Web administrators often lack confidence in updating websites and spend excessive time and energy doing so. In such cases, the website is less likely to be updated as often as needed, resulting in the same user frustrations and staff interruptions as indicated above. In addition, websites that do not have a second level of approval for changes are more likely to contain spelling and grammatical mistakes and less likely to have clear key messages from school or district representatives.

Websites that represent the district should be known to and monitored by appropriate district staff. Unofficial and unmonitored websites are usually the result of good intentions; however, they increase the district's risk of misinformation, loss of security controls, vulnerability to hacking attacks, and legal exposure. To ensure best practices in this area and verify compliance with Administrative Regulation 4040, the district needs to have a database of all websites that represent the district or that were created using district equipment or resources.

Having a website content approval process is a best practice. Most modern content management systems allow for automated workflow approval, which typically allows a site Web administrator to create or revise content to be published on the website, but gives a principal or district office administrator with final publishing authority the ability to review the content before allowing it to be published.

Districts using best practices for website management also have a training plan for all Web content administrators, and a published style guide that specifies communication protocols, logo usage, font requirements, colors and other such items. It is also a best practice to provide teachers with professional development on appropriate use of websites, content creation and curating, and district policies on social media use and digital content.

Recommendations

The district should:

1. Provide mandatory training to appropriate staff on acceptable and effective uses of websites and social media. Training should include a review of Board Policy and Administrative Regulation 4040 as well as the district style guide. Training may be offered in a variety of formats including online, in person, or combination of the two.
2. Survey staff to identify all nondistrict-hosted websites that represent any district-related entity, activity or function. Develop a plan to move all nondistrict-approved websites onto the district's platform. Develop an approval and monitoring process for any site that is to remain on a non-district platform.
3. Establish a Web page content workflow and approval process to ensure all published content meets district standards for accuracy, clarity and style.
4. Develop and implement a training program for site Web administrators that includes Web design, publishing and communication basics.
5. Develop a district publication style guide.

Firewall

The district uses a FortiGate firewall controlled by the network/systems administrator. This appliance faces out of the district's network, scanning inbound traffic and protects the district from Internet attacks. This is a complex and flexible product used widely in both education and private industry.

Content Filter

The district uses a Lightspeed Systems appliance to filter access to the Internet for all network users. Technology staff reported this is tied to Microsoft Active Directory, which is a database that includes a list of users and their associated access rights. All staff and students are required to log in to access the Internet. This is not a simple process for users connected to the wireless network: it requires each person to log in a second time to the content filter after logging in to the wireless network.

Requests to bypass the filter are submitted electronically to the director of information technology services, who unblocks the site if appropriate. Technology staff reported this process may

take time, so teachers are encouraged to check the sites they would like to use prior to class so the site can be opened if needed.

Requiring all filter override requests to go to the school site administrator and then to the technology department may reduce the use of technology in the classroom. One advantage to using content from the Internet is the ability to research a topic as it arises during a lesson. If teachers have to wait a long time to complete the research, the relevance of the material may be reduced.

Many districts of similar size use the Lightspeed Systems appliance to filter access to the Internet and configure the system to automatically authenticate users based on their Active Directory access rights without the need to re-enter their credentials. These districts also give teachers the ability to temporarily override the content filter to conduct educational research without having to wait for someone in the technology department to unblock a site. This override is often logged so that use of the feature can be reviewed if needed.

When testing the content filter from the district office, FCMAT was able to access inappropriate material on the Internet. The director of information technology services was unaware the filter was allowing access to inappropriate material but stated he had been requested to only place basic filtering on the guest network available at the district office. The director of information technology immediately changed the filtering configuration to block this type of access from this location.

Recommendations

The district should:

1. Immediately review the configuration of the content filter to block access to inappropriate sites from anywhere on the district network.
2. Work with the content filter vendor to determine if it can be configured to provide access to the Internet without requiring users to re-authenticate. Consider replacing the content filter if this cannot be resolved.
3. Provide the ability for school site staff to temporarily override the filter locally for educational appropriate material.

Network Administration and Infrastructure

Network Administration

The systems/network administrator is the primary staff member assigned to network administration; however, the director of information technology services has been administering the wireless system. No staff member is assigned and trained as a backup for the systems/network administrator.

As school districts rely more on network resources in the classroom, it is vital to have both a primary and backup staff member assigned to network administration. This allows a district to have staff available to meet users' needs when the primary staff member is not available. Most districts do not assign the department director as one of those technicians because network administration may consume a significant amount of time. Additional staff training for both primary and backup technicians on the specific systems and equipment installed in the district can reduce the time needed to resolve network problems. Many districts will analyze staff members' job duties, compare them to the individuals' knowledge, and use training to fill the gap.

The district was unable to provide detailed documents showing the layout and design of the network or an inventory of equipment that details make, model, age and location of equipment installed. Technology staff reported Hewlett-Packard (HP) equipment is installed at all sites, and all switches have been replaced in the last three years except for 35, which are scheduled for upgrade in 2015-16. The HP switches being installed come with a lifetime warranty, and no additional support agreement has been purchased. If a switch fails, technology staff will test the device and submit a support ticket to HP; if a replacement is needed, HP will send one to the district. No spare equipment is available, so any hardware failure may result in a network outage until the equipment is replaced. Technology staff reported that HP can normally provide a replacement device within one day.

Proper network documentation and an equipment inventory allow a district's staff or outside personnel to quickly isolate the source of a problem, reducing the time and cost to resolve an issue. Documentation can include network drawings that detail the network layout, and the make, model, location and age of equipment in use, as well as the IP address needed to access and manage each device. Many districts document passwords to access the network devices separately and keep these in a locked and secure location accessible to district administrators.

The district uses SolarWinds network traffic analysis tool to monitor the performance of both the wide area network (WAN) and the local area network (LAN), and the Aruba wireless system provides information on the performance of the wireless network. These systems allow the network administrator to isolate network problems and monitor networks for issues before they lead to a complete outage.

The district uses Microsoft's Active Directory Services to authenticate users on the network. Staff accounts are created by the technology department secretary and then activated by the network administrator. Student accounts are created by extracting the student data from the Infinite Campus student information system. No email accounts are set up for students. Passwords for Active Directory accounts are configured not to expire. In the current configuration, users are required to log in through security twice to gain access to the Internet. The first login is to the wireless network, and the second is to the content filter. School staff reported they sometimes have difficulty logging in to both systems.

To maintain better network security, many districts are configuring passwords to expire periodically. They are also sometimes increasing the complexity required for passwords to make it more difficult to guess a password. When passwords are set to expire, users are prompted to create a new password after a predetermined amount of time. This may reduce the risk of unauthorized access to the network and to district data. Passwords can be configured to expire at different intervals for different users depending on the district's needs and the sensitivity of the data on the network. For example, users with access to sensitive data may be required to change their password every 90 days, while students may be required to do so at the end of each school year.

Some network hardware suppliers offer lifetime warranties on the equipment they provide. When this is the case, equipment is usually returned to a repair facility when it fails. The supplier may include advanced replacement of the faulty equipment, which will speed up the time for repair and reduce the time the network is down. Many districts take advantage of the cost savings offered by a lifetime warranty. However, after determining allowable network downtime, these districts often also purchase spare equipment for critical network components so the network can be repaired quickly without waiting for a replacement device. This reduces the impact on users.

Recommendations

The district should:

1. Assign a technician as a backup for the network administrator (see the Technology Support Staffing and Organization section for more information).
2. Ensure that primary and backup network administration staff receive adequate and ongoing professional development on design, installation, monitoring and support of network equipment.
3. Create accurate network documentation for all sites.
4. Implement a password expiration policy to reduce the risk of unauthorized access.
5. After determining allowable network downtime, purchase spare equipment for critical components.

Wide Area Network Equipment and Design

The district contracts with Sunesys, LLC for its WAN services. The system's design includes fiber to each site and is contracted and configured to run at one gigabit per second (1 Gbps) to each site. The district purchases 1 Gbps Internet access from Time Warner Cable. This is a single Internet connection with no alternate path in case of failure.

The technology staff provided wireless network statistics for October 1 through December 31, 2014. The statistics show average and peak network traffic accessing the Internet, and the report shows peak use exceeded 350 Mbps during this time. This includes all access to the Internet from all sites on both the wired and wireless network.

As the district continues to increase its use of online resources, the demand for bandwidth will continue to increase and may quickly exceed current capacity. All the district's schools share its 1 Gbps connection, making it a potential bottleneck. Although the current bandwidth meets the minimum requirement of 20kbps per student for the California Assessment of Student Performance

and Progress (CAASPP), it falls short of the recommendation of 100Kbps per student outlined on the Smarter Balanced Assessment Consortium (SBAC) website. These recommendations can be found at http://www.smarterbalanced.org/smarter-balanced-assessments/technology/.

The current WAN design does not protect the district in case of an outage. With only a single link to the Internet, a failure would disrupt online services to the entire district. If this occurred during the instructional day or during the administration of the CAASPP, it could cause significant disruption. An alternate connection to the Internet, preferably from a different location and using a different vendor, would allow the district to continue using online resources while the primary connection is repaired. The K-12 High Speed Network (K-12HSN) administers the statewide network for schools. Connecting to this network may provide the district with a cost-effective alternate connection to the Internet. Information for the K12HSN can be found at http://www.k12hsn.org.

Recommendations

The district should:

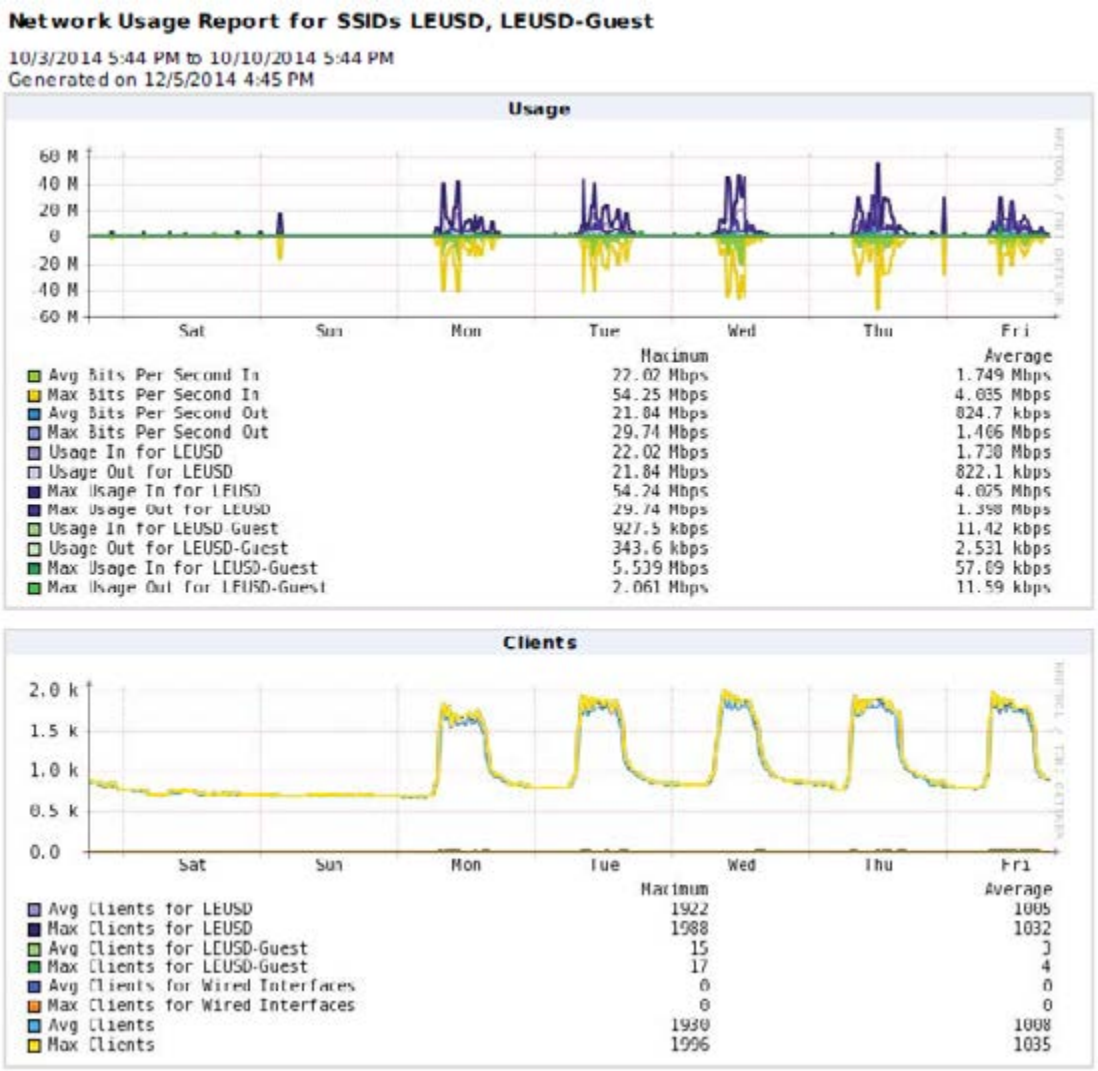
1. Evaluate its projected network usage for the next three to five years to determine its bandwidth needs, and increase the connection speed as needed.
2. Evaluate the feasibility of purchasing a second Internet connection and locating it at one of its school sites to be used as an alternate connection to the Internet.

Wireless Access

At the time of FCMAT's fieldwork, the district was in the first year of a three-year plan to cover all sites with wireless access. Year one of the project was designed to provide enough wireless access to conduct the CAASPP at each school. The plan for years two and three is to expand the wireless capability to completely cover each school. The district has standardized on Aurba Networks' wireless access points and controllers. The technology staff indicated that before the start of the project, a wireless coverage plan was not developed showing the placement of access points and projected coverage, and there is no current documentation of the wireless network. Originally, one of the Technology Department's technical staff managed the wireless network, but the director of information technology manages it at present.

Technology staff reported that the wireless network's original design did not meet the schools' needs. The design did not segment the wireless network, which resulted in one large and saturated virtual local area network (VLAN) that caused significant network problems. School staff reported the wireless network had so many issues that it was unusable. To address the complaints from school staff, an outside vendor was brought in and the wireless network was reconfigured and additional access points were added. School staff reported that the wireless network works better than at the beginning of the school year, but they still have problems.

Most of the current wireless network problems reported can be grouped into two areas: a lack of wireless coverage, and access problems in areas where wireless coverage is available. The system is designed to require the user to first log on to the wireless network and then log on to the content filter to gain access to the Internet. The district uses only two service set identifiers (SSID) on the wireless network: one is for students and staff and has stricter security and content filtering rules; the other is a guest network with less strict filtering rules. The guest network is configured only on access points in less secure locations.



The wireless network statistics provided by technology staff for October 3-10, 2014 show average and peak use of the wireless network and number of users on the network. Though data was provided through December 2014, the data shown below is representative of average utilization. During this time the maximum number of wireless devices on the network was 1,996 and the peak use was 54.25Mbps.

As districts install wireless networks, the use of these systems may vary. Some will allow students and staff to connect personal devices to the network; some will provide open guest access; and others will lock down their network to be used only by devices purchased by the district. Many districts with a successful wireless network start with a network plan that details how the network will be used, the number of devices it will need to support over the next three to five years and its purpose. In successful districts, this usually starts with an instructional plan that guides network design and installation. Distributing this plan to each school may help address some of the issues staff have experienced by making them aware of where they can expect wireless access.

No single design for wireless access will fit all situations. Many factors will affect wireless access, such as the type of materials used in the building construction, electronic interference, and the number of projected users. To provide the best and most reliable wireless coverage, many school districts will either conduct or have a vendor conduct a wireless site survey at each location. This is a study to determine the correct number and optimal placement of wireless access points to provide the best wireless coverage.

Recommendations

The district should:

1. Develop an overall plan for the wireless network, based on a needs assessment. Ensure that the plan includes instructional and noninstructional use of the network and that it is created in collaboration with representatives from the technology department and all departments that will use the wireless network.
2. Conduct or have a vendor conduct a wireless site survey to determine the correct quantity and placement of wireless access points at each site.
3. Assign primary and backup technology staff to administer the wireless network and provide adequate and ongoing training on design, support and installation of wireless equipment.
4. Communicate the wireless plan and timelines for implementation to staff so teachers and principals can plan appropriately.

Disaster Recovery and Data Center

Server and Data Backup

The district uses a Hewlett-Packard (HP) virtual server infrastructure connected to a storage area network (SAN). A virtual server infrastructure is a combination of hardware and software that allows multiple operating systems and applications to run on one or more physical servers. This design more efficiently uses the physical resources and is more cost effective than purchasing separate physical servers for each service on the network. The district runs approximately 84 virtualized servers using this infrastructure. Backups are performed by creating a snapshot of each server that preserves the state of the system and the data at the time the snapshot is taken. The snapshots are then stored on the local SAN and copied to offsite storage at Lakeside High School. Technology staff reported they have not performed a disaster recovery test to determine how long it would take to get critical systems back online after a failure, and they do not have enough hardware at Lakeside High School to bring up critical systems if the main data center sustains a catastrophic failure. In addition to this method of backup, the student information system, Infinite Campus, is backed up to the vendor's cloud storage. The vendor maintains equipment that can get Infinite Campus back online quickly.

Completing automatic backups regularly allows the district to recover quickly from a failure of its virtual server environment with limited loss of data. However, the district is not protected in case of a catastrophic event at the main data center that results in physical damage to the virtual environment. If this occurred, the district would need to rebuild its systems from the last backup stored at Lakeside High School; however, there is insufficient equipment to accomplish this. This may delay system restoration longer than users expect. With the exception of the student data system, the district could be without critical systems until it was able to purchase and install additional hardware.

It is vital to develop and test an effective backup strategy that allows the district to quickly recover from a catastrophic failure in a manner that meets users' expectations. A well-designed backup system considers worst-case scenarios, runs automatically and regularly, and stores backup data at an offsite location.

In addition to basic backup and recovery of data, districts that use virtual server environments often build a second virtual server environment at another school or have agreements with other education agencies or vendors to share equipment so services and data can be restored quickly and run from the secondary location if the primary data center has been physically damaged. Once built, these systems are tested regularly to confirm that critical systems can be recovered in a time frame that meets users' expectations.

Recommendations

The district should:

1. Evaluate the benefits of installing a virtual server environment at a backup location so critical services can be provided from the offsite location.
2. Evaluate its backup procedures and schedules to determine if they adequately meet the data recovery needs of all users. If not, adjust the procedures and schedules to meet users' expectations.

3. Perform regular tests of the backup and recovery system to verify that it meets the district's needs for recovery.

Data Center

The main data center is located at the district office. Access to the data center is through a single keyed door that is not solid and could be forced open. The building is protected by an alarm system and monitored, but there is no separate alarm zone for the data center. The data center also has no fire suppression or emergency power disconnect. It is cooled by both a primary and backup heating, ventilation and air conditioning (HVAC) system, and a backup generator provides power in the event of a power outage. All equipment is connected to uninterruptable power supplies (UPS) to protect the equipment and to provide power until the generator comes online. The HVAC system is not connected to the UPS but receives backup power from the generator.

Fiber cables used for network connectivity enter the data center through a junction box attached to the outside of the back of the building of the data center. Therefore, the junction box can be accessed from outside the building, and can be opened by removing the screws on the cover. This allows access to all fiber optic cable that connects the schools to the district's network, student information system, electronic learning resources, etc. as well as the district's fiber optic connection to the Internet.

The data center may not adequately protect the district from a catastrophic disruption in service. Unauthorized access to the junction box could easily damage the WAN, causing all district sites to lose Internet access. This would cause a significant disruption in services, including access to the Internet through both the wired and wireless networks as well as access to applications such as the student records system and online testing. The lack of fire suppression and monitoring could allow for a complete loss of equipment and data in the event of a fire. The fire suppression technology used in most data centers can extinguish a fire quickly without causing additional damage to the equipment, allowing rapid restoration of services. The physical security of the district's data center could allow unauthorized access to systems, and therefore theft or damage to equipment. The district can improve the physical security of the data center by replacing the door with a solid door, installing a security lock that tracks all access to the room, and setting up a separate alarm zone that allows the data center to be secured separately from the rest of the building.

As districts rely more on technology, it is critical to ensure systems are reliable and secure. Many districts of similar size to the Lake Elsinore Unified School District have a purpose-built data center to meet current and projected future requirements, following industry standards. These designs include physical security, fire suppression including heat and smoke detection, power and HVAC redundancy, and dual entrances for cable.

Recommendations

The district should:

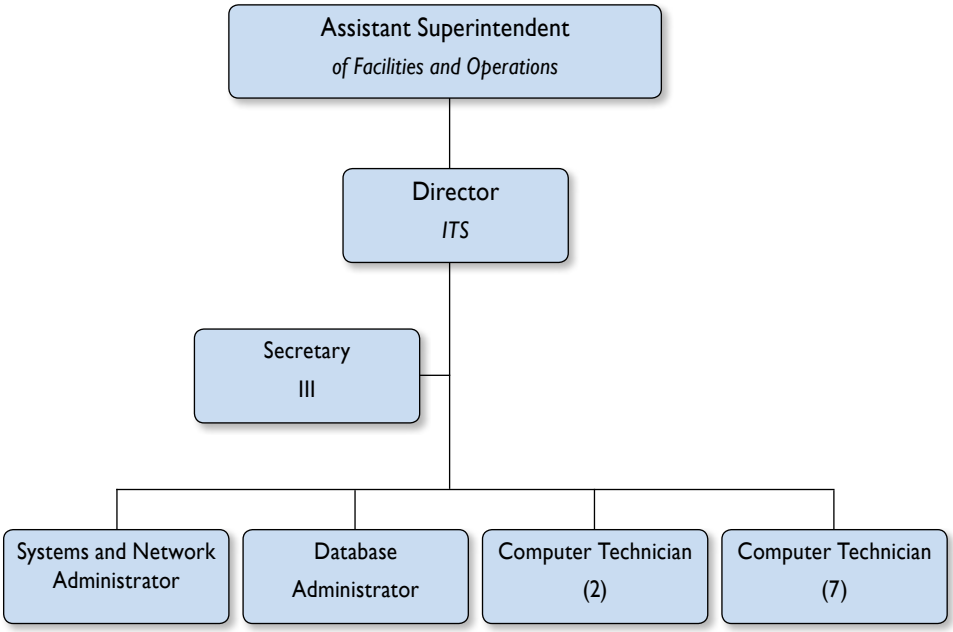
1. Secure the junction box on the outside of the building.
2. Install a fire suppression system designed for a data center.
3. Install a solid door with a security lock that tracks access.

4. Add a separate alarm zone for the data center.
5. Develop a long-term plan to upgrade the data center to meet the growing needs of the district and address network redundancy.

Technology Support Staffing and Organization

Technical support is provided by 13 full-time positions in the Information Technology Services (IT) Department: one director of information technology services, one secretary III, one systems/network administrator, one database administrator, two computer technician II positions and seven computer technician I positions. Two computer technician I positions were vacant at the time of FCMAT's fieldwork. All the technical support positions report directly to the director of information technology position.

The director of information technology services is the leader of this group and reports to the assistant superintendent, facilities and operations. The ITS Department is organized under the director, as depicted in the following organizational chart.



The following information, analyses and recommendations for current and proposed positions are designed to help the district optimize its technology services.

Director of Information Technology Services

The director of information technology services is a senior-level management position responsible for the overall direction of the ITS Department. This includes scheduling work, supervising and evaluating staff, and planning for the district's short- and long-term technology needs. This position reports to the assistant superintendent of facilities and operations.

Leadership

Technology leadership is outlined in the director position's job description, but is not being adequately provided. The current staff member could not articulate the district's instructional technology vision because in the past they were not regularly invited to attend DTAC meetings.

The job description includes knowing the technology plan and being instrumental in defining and supporting the plan. In most districts, the director of information technology works closely with both administrative and academic staff to help develop both short- and long-term technology planning. Without this coordination and leadership, the district may have difficulty meeting its technology needs.

Duties and Responsibilities

The job description characterizes this as a leadership position. This includes providing leadership in technology planning, coordinating resources, implementing performance standards, creating and conducting training for technology staff, and fostering districtwide communication. The duties the director is performing do not closely match those in the job description; rather, they are heavily weighted toward the technical aspects of the department. This includes maintaining and monitoring the wireless system and upgrades, and monitoring the Web filter. These and other technical duties account for approximately half of the daily tasks performed, which leaves limited time for the leadership activities outlined in the job description.

In many small to medium-sized districts, the lead technology position is a working manager, and the position often includes some technical responsibilities. However, those responsibilities are not normally the position's primary function; the primary function focuses on leadership, planning and budget management. When the technical aspects of the job are its primary function, little time is left for research, planning, managing and training technical staff, and other technology leadership functions. This is what has occurred in LEUSD even though the district is much larger in size and should have a lead technology position whose responsibilities are not so technical.

As districts increasingly rely on network resources for teaching and learning, academic needs are becoming a larger portion of a district's total technology needs. As a result, a district's lead technology staff member needs to meet the district's administrative needs and the school sites' increasing technology-related academic needs. Many districts have the lead technology position report either directly to the superintendent or to a senior cabinet member who has an understanding of classroom technology needs.

Many districts are adjusting to the changing role of technology by creating a senior cabinet position of chief technology officer that reports directly to the superintendent, as described in the Leadership and Vision section of this report. Creating such a position may help the district meet both its academic and administrative technology needs.

Recommendations

The district should:

1. Create a new position and job description for a chief technology officer (CTO) (A sample job description is attached as Appendix A to this report).
2. Have the director of ITS position report to the CTO.

3. Evaluate the duties and responsibilities of the director of ITS and reassign some of the technical duties to other staff.

4. Provide the director of ITS with adequate and ongoing professional development in leadership.

5. Consult with the appropriate collective bargaining unit whenever considering adding, eliminating or changing represented positions discussed here and elsewhere in the report.

Computer Technicians

The computer technicians provide hardware and limited software support to the schools. Computer technicians are regularly assigned to specific schools but may visit those schools as little as one day per week.

The job descriptions provided to FCMAT for the computer technician I and computer technician II positions are dated November 12, 2002. The job description for the computer technician I position is for a technical position involving installation, repair and maintenance of computers, peripherals and network components. The position requires a high school diploma or equivalent and two years of experience and reports to the director of information technology.

The tasks that staff members in this position perform include those in the job description and some that are not listed. Among these are mobile device management, directory services, installation and maintenance of specialized assessment software, and support of Web-based educational software.

The computer technician II job description is similar to the job description for the computer technician I but requires additional experience and additional knowledge of operating systems. The position is described as a technical position that includes the installation, repair and maintenance of computers, peripherals, operating systems and network components. The position requires a high school diploma or equivalent and four years of experience and reports to the director of information technology.

Most tasks the staff in this position perform are the same as those performed by the computer technician I staff. The two positions differ significantly only in the assignment of responsibilities, not in the tasks performed. The computer technician II may be assigned as the primary support for a system. For example, the responsibility for the point of sale system for food services is assigned to a specific computer technician II staff member.

As students' use of technology in schools increases, many school districts have begun to reevaluate and modify the job descriptions of technology support staff. This includes updating and expanding the duties and responsibilities to include current technology and updating the qualifications needed for the position. Some districts have also changed the title of the position to better indicate the work being performed. For example, some districts use the title of technology support specialist (TSS) and have created different levels of that position based on the complexity of duties and the tasks or systems the position serves.

Creating different levels of support positions allows a district to assign tasks based on the complexity of the work performed and provide a career path for staff to advance as their skills and education increase. Many districts will assign an initial support ticket to a level-one technician, with the ability to escalate the ticket to next level. A tiered approach to support and the ability to escalate a ticket allows the support staff to match the work with the staff member who has the appropriate skill and knowledge.

Examples of duties for each level of technology support specialist include the following:

- Technology Support Specialist I - Assigned basic support tickets that include hardware and software service requests, and basic setup and configuration of devices including mobile devices. Maintain documentation and perform preventive maintenance.
- Technology Support Specialist II - Assigned more complex tickets that may require additional research, redesign and complex configuration. May be assigned as the primary technician for a system. Respond to tickets that have been escalated by a support specialist I. Provide mentoring and training to support specialist I staff members.
- Technology Support Specialist III - Specializes in either network administration or system administration and performs tasks similar to or the same as the technology support specialist II position. Serves as the backup technician for either the network or system administrator. Responsible for completion of projects and coordinates installation of equipment with other support staff. Respond to tickets escalated by technology support specialist II staff. Provide mentoring and training to technology support specialist I and II staff members.

As the use of technology in the classroom increases, so does the need for timely technical support. It is difficult to meet the technology needs of each school when some schools receive only one day of on-site technology support per week.

School staff reported the support is not adequate to meet their needs because not enough time is allocated for the number of repairs requested and support response times are not timely. Assigning additional technical support staff time to each school would help resolve these issues and better meet technology needs.

Because different levels of technology are used at each grade level, the requirement for support varies between schools. For example, high schools may require more staff time and a higher level of technical support than elementary schools.

In many cases technology support equal to 0.5 of a full-time equivalent (FTE) position can meet the needs of an elementary school. This often increases to 0.75 FTE for middle schools and K-8 schools, and rises to 1.0 FTE for high schools. The district's alternative schools and adult school could be served by a 0.5 FTE technology support specialist I.

To provide staffing as outlined above, the district would need 11 technology support specialists I (TSS I) positions and three technology support specialists II (TSS II) positions. However, it would benefit the district to make two of the three TSS II positions into TSS III positions to serve as backups for the network administrator and system administrator positions recommended elsewhere in this report.

The following table outlines the full-time equivalent TSS positions needed by type of school.

School Quantity, Type or Name	FTE needed per school	Subtotal FTE needed	Type of position	Totals by Position Type
12 Elementary Schools	.50	6.0	TSS I	
2 K-8 Schools	.75	1.5	TSS I	
4 Middle Schools	.75	3.0	TSS I	
1 Southern California Online Academy 1 Adult	.5	1.0	TSS I	
TOTAL TSS I POSITONS				11.5
3 High Schools	1.0	3.0	TSS II	
TOTAL TSS II POSITONS*				3.0 (1.0)
*Two of these TSS II's replaced by TSS III's to serve as backups for network and systems administrator positions.				
TOTAL TSS III POSITONS				2.0

One way to assign TSS staff is to have them report to the district office first each morning for a brief meeting with their supervisor to review any critical information about the status of the network and support requests. Districts with effective technology support often view the TSS staff as a pool from which assignments can be made without permanently assigning specific staff to a particular school. This can help ensure continuity of service when a staff member is absent or leaves the district, because other staff will already be familiar with the school that staff member was serving and can take over these responsibilities quickly.

Recommendations

The district should:

1. Eliminate the computer technician I and II positions.
2. Create 11.5 technology support specialist I positions, one technology support specialist II position, and two technology support specialist III positions (Sample job descriptions are attached as Appendix A to this report).
3. Organize and make use of employees at each level of support position (TSS I, TSS II, and TSS III) as a pool from which assignments can be made as needed.

Secretary III and Help Desk Support

The secretary III position performs administrative support functions, and tracks the technology department's budget, expenditures and budget transfers. This position also helps complete and file E-Rate applications and reviews the final applications before submitting the electronic signature certifications to the Federal Communications Commission. In addition the position answers all incoming telephone calls for the technology department and screens calls, routes calls, and takes messages.

The secretary III position also performs a great deal of work that would normally be assigned to a help desk technician. This type of work takes more than half of this employee's working hours and includes troubleshooting problems with computers, printers and software. If the secretary III cannot resolve the problem, she routes the request for service to the computer technicians. This position also helps schedule the work of the computer technician I and computer technician II positions. Other duties include creating Active Directory and email accounts including group distributions, and disabling the accounts of staff members who have terminated employment

with the district. This employee also spends a significant amount of time each day helping reset passwords and unlocking Active Directory accounts. The employee also provides troubleshooting and coordinates installations and repairs for the telephone system.

The help desk functions performed require far more skill, knowledge and abilities than specified in the job description. Many medium-sized and larger school districts have a full-time help desk technician to perform the technical support tasks completed by the district's secretary III position. This allows a trained person to focus on the needs of those requesting services and frees the administrative support staff, in the district's case a secretary III, giving them adequate time to provide administrative support.

Recommendations

The district should:

1. Create a help desk technician position (A sample job description is attached as Appendix A to this report).
2. Move technology support duties from the secretary III position to a help desk technician position.
3. Reassign the secretary III position to report to the chief technology officer to provide additional support to other management positions in the department.

Support Services Manager

Technology must be reliable and readily available to be integrated with daily instruction. When widespread technology problems occur, the Technology Department is responsible for communicating with all affected parties using clear and concise statements about service availability, status and issue resolution. The department needs a strong operational management position to provide daily direction and management of critical operations, including the help desk and daily school site technology management.

In many mid-sized to large school districts, a supervisory position of support services manager is assigned to manage the support team. The support services manager typically manages the technology support specialists and help desk technicians; reviews, prioritizes and assigns support tickets to staff; follows up with users to ensure quality of service; and assigns staff to schools and sites based on current needs.

Recommendation

The district should:

1. Create a support services manager position to coordinate help desk services and responses to technology requests from the schools and other departments (A sample job description is attached as Appendix A to this report).

Systems and Network Administrator

The district's organizational chart for the ITS Department includes a systems and network administrator position. The job description provided to FCMAT is titled "Network Administrator" and states that the position reports to the director of information technology services. The district does not have a job description for a systems and network administrator.

This position is responsible for the wide area network (WAN) and local area networks (LANs) and includes monitoring and upgrading the WAN and LAN infrastructure, developing hardware and software standards, and directing, supervising and evaluating staff.

The job description states that the position includes supervisory skills, but the organizational chart for the ITS department does not list any positions reporting to the systems and network administrator.

The responsibilities in the job description are primarily technical. These include monitoring and upgrading the district network, overseeing the development of networking services, maintaining network security measures, and resolving network communication problems.

This staff member is performing some duties that are not in the job description, such as system administrator duties, software installations and upgrades, system monitoring, hardware and software upgrades, and maintenance. In addition, although wireless network and web filter maintenance are included in the network administrator job description, they are performed by the director of ITS rather than by the systems and network administrator.

In many districts of similar size, the network administrator and systems administrator are separate positions and additional staff are assigned and trained to support and back up these positions. The network administrator is typically responsible for recommending, installing, updating and configuring the LAN and WAN hardware, ensuring the security of the network including firewalls and filtering devices. The systems administrator is typically responsible for many services that run on the network including email, student records and Web services, and the hardware and software to support those services. These are two separate disciplines that require different training and tasks.

These two positions could be combined in a small organization with a small network running a limited number of services. However, combining them in a larger more complex network makes it difficult to meet all of an organization's needs and increases the time it takes to resolve a network or system issue.

In addition to separating the network administrator and systems administrator positions, many districts assign staff in high-level technical positions to support and act as a backup for these. These backup positions require specific skills and training. Without backup staff for each position, a district risks significant down time if the primary staff are not available.

Recommendations

The district should:

1. Eliminate the network/systems administrator position.
2. Create a systems administrator position and job description. (A sample job description is attached as Appendix A to this report).
3. Update its network administrator job description (Appendix A to this report includes a sample job description).
4. Assign a technology support specialist III position to support and act as a backup for the systems administrator.
5. Assign a technology support specialist III position to support and act as a backup for the network administrator.

6. Transfer the responsibility of managing the wireless system and content filter to the network administrator position.

Database Administrator

The database administrator reports to the director of ITS and is responsible for the district's data warehouse. This includes planning for, developing and implementing database systems such as the Educator's Assessment Data Management System (commonly known as EADMS); providing user support; extracting, uploading and backing up data; and producing custom reports for users.

Other duties include supporting the student information system portal used by parents and students, supporting school site and district staff on the student information system, and developing and maintaining automated data transfers between many software applications. The position also works with the data integration related to the School Messenger communications system.

The job description indicates this is a technical position responsible for all aspects of maintaining electronic data; this closely matches the duties this staff member performs. Many systems this position supports are student-focused and require coordination with the district's academic staff.

Director of Educational Technology

The district's organizational structure does not clearly define who provides leadership for educational technology. When employees were asked who was responsible for this leadership, responses varied and included the superintendent, the technology director, the principals, the teachers and, "there is no leadership." Without clear direction, the district can expect disjointed projects and intermittent success in the use of technology for student learning. In addition, a lack of coordinated effort across the district is likely to perpetuate inequalities in learning environments because it will foster independent and unstructured efforts with varied success.

In districts that have this position, the director of educational technology is a credentialed leader who understands instructional practices for transitional kindergarten through grade 12 and is an expert in technologies that support teaching and learning. Functioning under the direction of the CTO, a director of educational technology provides strategic direction for classroom technologies; oversees the technology-related professional learning for instructional and support staff; directs, coaches, and supervises the teachers on special assignment (TOSAs); and recommends innovative learning strategies for inclusion into the instructional program. In the district's case, it would be beneficial to ensure that such a position works closely with the appropriate ITS staff to manage Google Applications for Education.

Recommendation

The district should:

1. Create a director of educational technology position to oversee all educational technology-related operations, including professional development learning and innovative learning strategies (A sample job description is attached as Appendix A to this report). Ensure that the individual in this position works closely with the appropriate ITS staff to manage Google Applications for Education.

Teacher on Special Assignment

The teacher on special assignment position performs many different duties districtwide, including having the primary responsibility for submitting trouble tickets, advocating for technology work order completion, and overseeing the ITS technicians.

The best practice is to have a teacher on special assignment focus on professional development through seminars, team teaching, lunch and learn sessions, and regular conferences, with the goals of integrating technology with the curriculum and ensuring that professional learning goals are met.

The responsibilities and duties of the district's technology-related teacher on special assignment position need to be reevaluated to ensure they are aligned with the district's direction and goals. The position needs to spend more time coordinating and delivering team teaching because this is effective in demonstrating instructional technology. In addition, it would be best for the position not to oversee the ITS technicians or be the primary position responsible for submitting trouble tickets.

Recommendation

The district should:

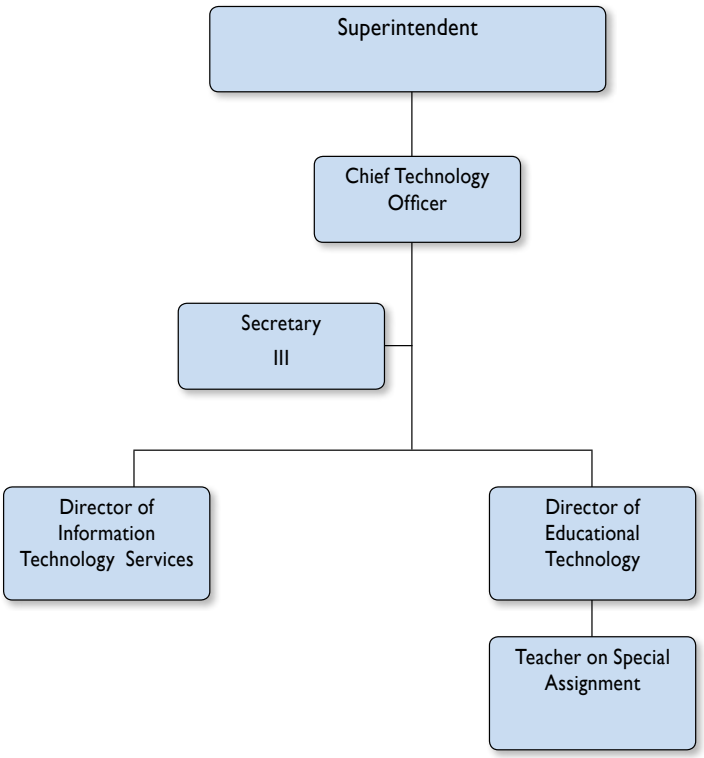
1. Review the teacher on special assignment job descriptions for technology-related positions to ensure they are focused on professional learning for teachers and aligned with the district's strategic direction.

Reorganization Summary

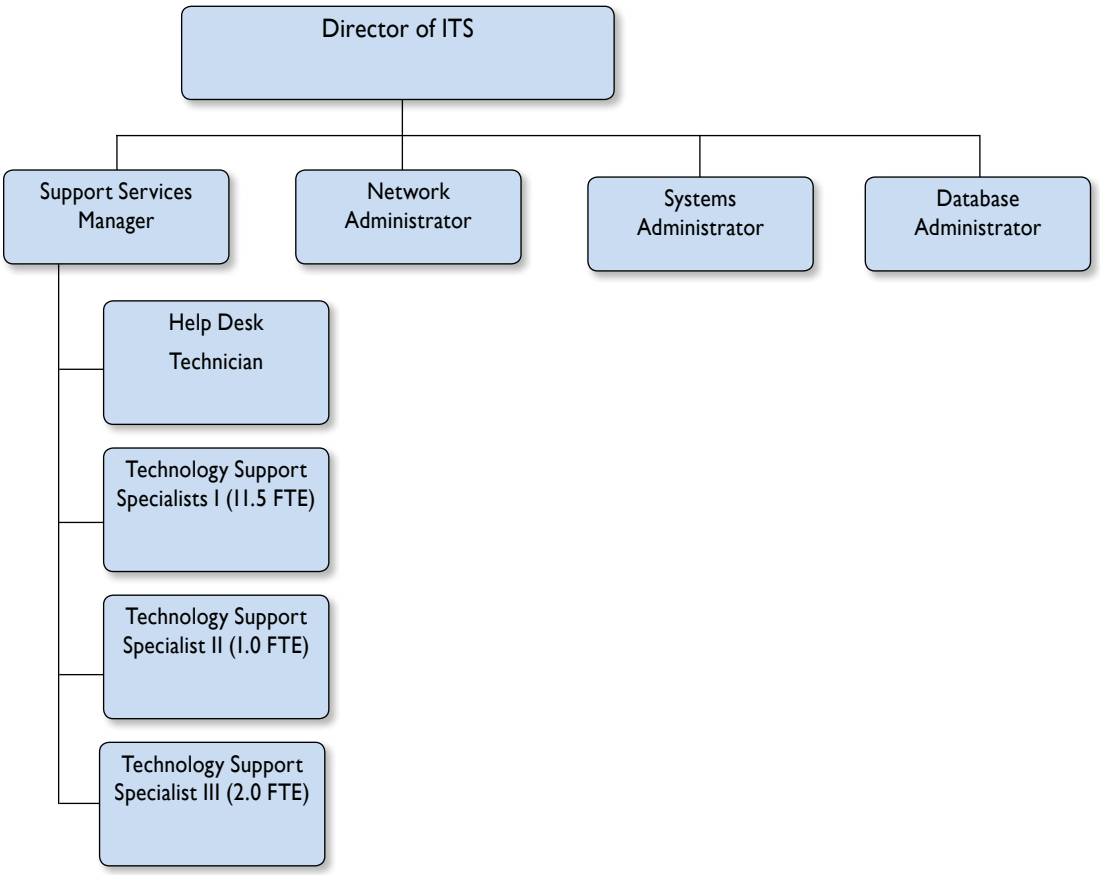
Restructuring technology support staffing to provide more effective services to school sites and classrooms would help the district resolve school site support problems and overcome organizational obstacles.

The following chart indicates the organizational structure FCMAT recommends for the district's ITS department.

Proposed District Technology Support Organizational Chart



Proposed ITS Organizational Chart



This revised structure focuses on creating a new unit in the district that allows unified leadership, support and accountability to be provided to internal departments and school sites.

The table below shows current technology support position titles and any recommended title changes or salary increases. The salaries shown do not include the costs of statutory and health and welfare benefits.

Current Positions and Proposed Changes

Current Title	Proposed Title/Change	Estimated Cost Savings
Director of ITS	N/A	
Secretary III	N/A	
Computer Technician I (7 FTE)	Positions Eliminated	$367,416 ($52,488 each-.)
Computer Technician II (2 FTE)	Positions Eliminated	$108,984 ($54,492 each)
Systems and Network Administrator	Position Eliminated	$82,712
Database Administrator	N/A	

The following table lists the recommended new positions and the estimated salaries for each. This does not include the costs of statutory and health and welfare benefits. The suggested placements on the district's salary schedule are solely for evaluating the organizational restructuring; total costs may be considerably higher once the district's Human Resources Department determines the appropriate salary placement and includes health and welfare and other statutory benefits in the total compensation.

Proposed New Positions and Salaries

New Positions	Estimated Annual Salaries
Chief Technology Officer	$136,410 (Certificated Management/Cabinet Salary Schedule, Step 5/6)
Support Services Manager	$82,712 (Classified Management/Cabinet Salary Schedule, Step 5/6)
Network Administrator	$82,712 (Classified Management/Cabinet Salary Schedule, Step 5/6)
Systems Administrator	$82,712 (Classified Management/Cabinet Salary Schedule, Step 5/6)
Help Desk Technician	$52,488 (Classified Salary Schedule, Range 60, Step 4)
Technology Support Specialist I (11.5 FTE)	$603,612 ($52,488 each (Classified Salary Schedule, Range 60, Step 4))
Technology Support Specialist II	$54,492 (Classified Salary Schedule, Range 63, Step 4)
Technology Support Specialist III (2 FTE)	$111,696 ($55,848 each (Classified Salary Schedule, Range 65, Step 4))
Director of Educational Technology	$116,649 (Certificated Management/Cabinet Salary Schedule, Step 5/6)

The transition to the new organizational structure shown above can be accomplished by a combination of attrition, reclassification, redefining roles and job descriptions, and other means. As indicated earlier, changes in positions, titles and salaries may be subject to collective bargaining. The proposed reorganization includes new positions, the representative duties and responsibilities of which are described earlier in this report.

The district could consider making changes and additions to management positions first. This would allow the management staff to be involved in restructuring and staffing their areas of responsibility.

The following is a summary restatement of the staffing- and reorganization-related recommendations made in this report. Appendix A contains sample job descriptions for all recommended new or revised positions.

Recommendations

The district should:

1. Consult with the appropriate collective bargaining unit whenever considering adding, eliminating, or changing represented positions discussed here and elsewhere in this report.
2. Create a new position and job description for a chief technology officer (CTO).
3. Assign the director of information technology services to report to the CTO.
4. Eliminate the computer technician I and II positions.
5. Create 11.5 new technology support specialist I positions, one new technology support specialist II position, and two new technology support specialist III positions.
6. Create a new position of help desk technician.
7. Reassign the secretary III position to report to the CTO to provide additional support to other management positions in the department.

8. Create a support services manager position to coordinate help desk services and responses to technology requests from the schools and other departments.
9. Eliminate the network and systems administrator position.
10. Create a new position and job description for a systems administrator.
11. Update the current job description for the network administrator position.
12. Create a director of educational technology position to oversee all educational technology-related operations, including professional learning and innovative learning strategies.

Appendices

Appendix A

Sample Job Descriptions

Chief Technology Officer

Under direction of the Superintendent, plan, recommend, organize, and direct district-wide information and computer operating systems; provide leadership and guidance in the implementation of technology. Develop and oversee a department budget; coordinate contract services; and general oversight responsibility for classroom/school site technology. Collaborate with sites and district departments on technology-related issues; manage professional and technical staff.

EXAMPLES OF DUTIES

- Provides leadership and direction in district-wide technology planning, computer acquisition, applications development, and computer operations to increase access to information and facilitate productivity.
- Consults with division managers to develop network and communication solutions and data services that integrate computer systems for information processing and data sharing.
- Directs development of information systems including database management, business, and financial applications to improve operations and delivery of instruction.
- Develops and implements departmental goals, priorities and procedures.
- Monitors data security to ensure the integrity and reliability of computerized information systems.
- Directs the continuous improvement of the information and technical system staff, equipment and systems to maintain pace with district needs.
- Oversees an annual budget and establish controls to stay within the limits of that budget.
- Prepares for and follows up on technology-related audits.
- Coordinates student and staff events, promoting the use of instructional technology.
- Oversees bid requests, proposals, and vendor contracts.
- Supervises and evaluate department certificated and classified management personnel.
- Performs other duties as assigned.

QUALIFICATIONS

Knowledge of:

Current K-12 instructional practices; principles and techniques of educational technology; principles and techniques for project planning, scheduling and control; public sector business practices; emerging trends in instructional technology, and management of budget planning and oversight.

Ability to:

Supervise, coordinate, and direct managers, teachers, classified staff, advisory groups, and other stakeholders; communicate clearly and concisely, orally and in writing; develop sound strategies to accomplish objectives; incorporate new technology into future plans; facilitate and lead change; comply with the District's customer service standards, as outlined in Board Policy.

Experience:

Demonstrates strong management/leadership skills. A minimum of five years' experience at site or district level coordinating technology integration into instruction or management of technology/information systems.

Education

Current California teaching credential.
Educational Administrative Services credential.
Masters degree in related area or postgraduate educational technology coursework preferred.

CHIEF TECHNOLOGY OFFICER

DEFINITION

Under the supervision of the Superintendent, the Chief Technology Officer provides dynamic, responsive, collaborative and forward-thinking vision, leadership and management of technology systems and services to support the mission and goals of the District. This includes the planning, development, implementation, management and maintenance of all applications, infrastructure, security, networks, technology training and communications, as well as comprehensive support for the teaching and learning activities of the staff and students.

ESSENTIAL DUTIES AND RESPONSIBILITIES

- Work collaboratively with schools and departments to support technology integration and innovation.
- Provides oversight and direction for integrated data communications networks and the use of integrated database management systems.
- Plans, schedules and directs the development of computer programs, including needs analysis, interface with other existing and planned programs, debugging, and development of comprehensive documentation.
- Identifies and supports instructional applications for technology.
- Designs and implements on-line quality assurance support programs including system and database security.
- Implements and evaluates systems and procedures to protect data integrity, reliability and accessibility.
- Organizes and coordinates appropriate staff development activities to ensure proper use of equipment and programs. Assures training is both operational and conceptual in scope.
- Develops functional specifications, standards and requirements for hardware and/or software purchase and design to ensure optimum system and end-user performance.
- Promotes participation of and collaboration with end-user and staff representatives in needs assessment, program development, service delivery efforts and project review.
- Evaluates technological changes, emerging technologies and best practices in computer and communication fields to recommend innovative and cost effective integration of new technologies.
- Manages operating budget covering all centralized computer support throughout the District and recommends prudent fiscal approaches for long-term hardware and software acquisition and maintenance.
- Coordinates staff development to support technology integration.
- Leads both short and long-range planning efforts related to technology.

- Coordinates the systems design work necessary to support the integration of information systems and platforms.
- Hires, supervises, develops and evaluates the work of assigned staff.
- Other duties as assigned.

QUALIFICATIONS GUIDE
Knowledge and Abilities:

- Ability to articulate and understand complex issues and facilitate effective problem-solving.
- Knowledge of principles, techniques, procedures and developments for the operation of data processing and communications technology.
- Understanding of technology integration in support of the instructional program.
- Knowledge of computerized educational management practices.
- Knowledge of complex computer systems design, analysis and operations, with a background in managing integrated database file structures.
- Ability to plan and direct a large, complex operation that involves coordination and integration of multiple interrelated activities.
- Knowledge and experience in system design, program development, debugging and system operation.
- Knowledge of operating systems and the integration of personal computers in information systems.
- Understanding of distributed processing.
- Ability to develop and maintain cooperative relationships with community members, certificated staff and classified staff.
- Knowledge of consensus building techniques and conflict resolution strategies.

Education and Experience:

- Master's Degree from an accredited college or university with major coursework or extensive experience in Technology, Educational Technology, Computer Science, Information Systems or Business Administration or a related field; Teaching or Administrative credential preferred; valid California driver's license.
- Preference for administrative experience, in a supervisory or management capacity, with educational technology, technology support and communications.
- Demonstrated record of strategic planning, budget management, integration and staff development.

REASONING ABILITY
Ability to apply common sense understanding to carry out instructions furnished in written, oral, or diagram form. The capacity to deal with and solve problems involving multiple variables.
PHYSICAL DEMANDS
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable

accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit; walk; use hands and fingers, handle, or feel objects, tools, or controls; and talk or hear. The employee is occasionally required to stand, stoop, kneel, or crouch, and reach with hands and arms. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception and the ability to adjust focus.

WORK ENVIRONMENT

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. While performing the duties of this job, the employee occasionally works near moving mechanical parts. The noise level in the work environment is usually moderate.

Director of Educational Technology

DEFINITION

Under direction of the Chief Technology Officer and in coordination with educational services, provides leadership and guidance in the implementation of district wide innovative educational technology; provides and directs technical assistance and support to schools in a variety of computer programs and functions; plans, organizes, recommends and directs district wide training, software adoptions and implementation; oversees application systems and websites.

EXAMPLES OF DUTIES

- Provide leadership in the integration of learning technologies in the classroom as part of innovative/21st century education redesign of classrooms.
- Plans, organizes, schedules and supervises staff in developing detailed and definitive technology use plans for each school in the District.
- Acts as a liaison for the Education Division, attending instructional events and meetings with other district and site leaders.
- Contributes to the leadership and direction in technology planning, assessment programs, equipment acquisition, applications development, and establishment of standards for hardware and software.
- Coordinates the roles of site technology coordinators and TOSAs to implement goals and integrate technology into instruction.
- Participate in the development and implementation of the District's Technology Plan in support of student achievement
- Work with site administrators to help teachers adapt curriculum materials and lesson plans to utilize technology
- Coordinate professional development activities directly related to the integrated use of technology in all content areas, including student demonstration projects, classroom demonstrations, team teaching, and workshops.
- Reviews curriculum, develops training programs, identify best practices, and coordinate integration of technology into the learning process.
- Participates in development and implementation of departmental goals, objectives, policy priorities, standards and procedures.
- Provides leadership and direction in applications development, to increase access to information and facilitate productivity. Support the selection and training for cloud-based applications and adoption.
- Support the integration of technology associated to the Common Core State Standards.
- Support virtual schools and online programs and other digital curriculum projects.
- Consults with division managers to develop solutions that integrate computer systems and data sharing.
- Facilitates ongoing district wide needs assessment and software technology implementation.
- Manages and implement technology grants and related budgets.
- Coordinates and promote participation in organizations, events, and conferences concerning instructional technology.
- Prepares bid requests, evaluate proposals, and oversee vendor contracts.

- Work to set standards for technology use for students and instructional staff.
- Makes recommendations for employment and evaluate performance of assigned staff.
- Performs other duties as assigned.

QUALIFICATIONS

Knowledge of:
Current K-12 instructional practices; principles and techniques of educational technology; project planning, scheduling and control; broad knowledge of public sector business practices; emerging trends in instructional technology and management of budgets.

Ability to:
Supervise, coordinate, and direct teachers, support staff, advisory groups and other stakeholder groups; communicate clearly and concisely, orally and in writing; define specific goals and develop sound strategies to accomplish objectives; incorporate new technology into future plans; use strong management and interpersonal skills to facilitate and lead change; comply with the District's customer service standards, as outlined in Board Policy.

Experience:
Minimum five years of teaching experience. Minimum two years of experience at a site or district level coordinating technology integration into instruction. A minimum of two years experience in a site administration position preferred.

Education
Current California teaching credential.
Educational Administrative Services credential.
Masters degree in related area or postgraduate educational technology coursework preferred

SUPPORT SERVICES MANAGER

DEFINITION

Under the direction of the Director of Technology, the Support Services Manager provides leadership and direction for the area of technical services including computer and tablet support, help desk, and technical training; oversees the day-to-day operations providing school site and departmental installations, repair, maintenance and customer support; manages technical training of District staff for both hardware and software usage; plans, schedules, coordinates and supervises personnel engaged in technical support services; allocates resources and sets priorities; manages technical and user support District-wide; coordinates with all District management and school site administration to plan, manage and oversee comprehensive technology programs and objectives; performs other duties as required.

EXAMPLES OF DUTIES

- Manages the installation, repair and maintenance of hardware, software
- Manages the customer support needs of District departments and school sites
- Manages the training programs for District administrative and technical staff
- Tracks and analyzes hardware and software problem trends
- Plans, organizes, schedules and supervises technology and user support specialists
- Manages the hardware and software inventory and warehouse control system
- Contributes to the leadership and direction in technology planning, technology acquisition, applications development and establishment of standards for hardware and software
- Participates in development and implementation of departmental goals, objectives, priorities, standards and procedures
- Contributes to the establishment and enforcement of technology and security policies and standards
- Coordinates personnel related issues including training and evaluating employees

QUALIFICATIONS

Knowledge of:
Various computer and tablet hardware and software, basic networking equipment and other peripherals; procedures and policies for ongoing maintenance and support of District staff technology needs; methods for prioritization, scheduling and dispatching technology support services; principles of supervision, training and performance evaluation; principles and techniques for project planning, scheduling and control; K-12 Education business and management practices.

Ability to:
Provide guidance to technology support staff; supervise, coordinate, and direct staff in hardware, software and basic network installation, repair, maintenance, troubleshooting, customer support and training; identify and implement long-term direction for the Technical Services function; define specific goals, develop sound strategies and work systematically to accomplish objectives; use strong management skills to perform

planning, directing, reporting and administrative duties; organize work, estimate time, and materials required; prepare concise reports for operational and planning needs; analyze proposals for hardware and software acquisitions; establish and maintain effective organization, community, and public relationships; comply with the District's customer service standards, as outlined in Board Policy.

PREFERRED EXPERIENCE AND EDUCATION

Three years in an information technology environment. Education equivalent to two years of college coursework in information technology or an associate's degree in either information technology or a closely related field. Experience may be substituted for college education on a year-for-year basis.

Network Administrator

GENERAL PURPOSE
Under direction, performs highly responsible and complex professional and technical tasks in the planning, design, development, implementation, maintenance and administration of the District's network infrastructure and network applications, server infrastructure, virtualization; and performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS
A Network Administrator performs advanced professional and technical responsibilities in planning, design, implementation, maintenance and administration of multi-platform network operating systems, including participating in the development of technical standards for the configuration and installation of hardware and software systems. The incumbent performs third- level problem analysis and resolution on matters related to the network operating environment and applications. The Network Administrator has overall responsibility for the planning, design, implementation, maintenance and troubleshooting of the District's network infrastructure.

ESSENTIAL DUTIES AND RESPONSIBILITIES
The duties listed below are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to this class.

1. Provides third-level technical support for the District's network infrastructure, operating systems and applications; provides information, technical direction and training to other Information Services staff on activities required to implement projects, system hardware and software installations and upgrades, new procedures and techniques related to the network infrastructure.

2. Installs, configures, upgrades, tests and maintains network equipment and devices, including hubs, routers and switches and wireless networks ; provides network server and device support and systems maintenance; works with external technical assistance to resolve hardware and software issues.

3. Installs, upgrades, tests and supports network applications software; plans for, configures and tests to ensure their effective integration into the on-line computing environment.

4. Performs network administration duties, including establishing and maintaining user accounts, maintains system and remote access security to ensure system and data integrity; installs and tests security patches; installs and maintains anti-virus protection software.

5. Designs and implements VLAN topologies for securing District computing resources to include administrative computers, servers and other critical network infrastructure and systems. Performs security audits on network and server infrastructure based on industry standards for intrusion detection and intrusion preventions. Makes recommendation for best practices related to network security.

6. Assists in monitoring network speed, reliability and performance, using systems management software and other tools and utilities; troubleshoots and resolves complex issues including performance degradation, problems in interactions between hardware, software and network operating systems and hardware/disk failures; monitors and evaluates system and network statistics; assesses system capacity issues, evaluates software and other alternatives and recommends system upgrades or replacements; installs and tests operating system releases, upgrades and fixes.

7. Oversees and manages the Districts virtual and SAN server infrastructure for memory and disk space for data storage and recommends the clean-up of disk storage; evaluates disk storage capacity and makes determinations on data storage locations; tunes to improve database performance; performs database startups, shutdowns and recoveries.

8. Develops and reviews documentation of policies, procedures, standards, program solutions and techniques for the design, operation, installation and maintenance of network operating system software; coordinates or participates in review of the technical environment to evaluate and measure system performance and effectiveness.

9. Conducts systems analysis and design studies on proposed network applications, including effects on user base, impacts on computer resources and personnel needs; develops and maintains procedures for the reasonable security of information systems and data integrity.

OTHER DUTIES

1. Participates in the evaluation of proposed solutions by attending demonstrations, performing technical research providing technical input to evaluative committees and participating in the evaluation process.

2. Prepares various reports, as required, including project schedules and updates, charts and diagrams

3. Supervises and manages System Technicians that report directly to the Network Manager and performs staff evaluations.

MINIMUM QUALIFICATIONS
Knowledge of:
1. Network architectures and theory and principles of network design and integration, VLANS, including topologies and protocols.

2. Principles and practices of advanced network administration, including network monitoring and diagnostic methods, practices and procedures, and the TCP/IP protocol suite.

3. Methods and techniques in the installation and configuration of network operating system/ TCP/IP routing, layer 2 and layer 3 switching.

4. Network management systems, including principles and practices of security management.

5. Working knowledge of VMWARE, including principles and practices of server management.

6. Operating principles, parameters, uses, capabilities, characteristics and limitations of mid-range computers, servers, network operating systems, PCs and related equipment.

7. Working knowledge of VLANS/ TCP/IP routing and design to include Cisco IOS version 11.x and above.

8. Principles and practices of business and technical communications, including techniques in the development of system and user documentation.

Ability to:
1. Analyze complex computer system and network issues, identify the reasons for network and network device problems, failures and malfunctions and develop effective solutions.

2. Develop and recommend cost-effective technical system improvements.

3. Monitor network trends and anomalies and make adjustments as required.

4. Read, interpret and apply complex technical publications, manuals and other documentation.

5. Identify information management and data communication issues and opportunities, analyze problems and alternatives and develop sound conclusions and recommendations.

6. Develop, implement and effectively manage procedures and processes, including maintenance of

schedules and timetables and preparation of reports on project status.

7. Conscientiously preserve the confidentiality of all proprietary and confidential data and information residing in the District, in accordance with Departmental and District policy and State and Federal law.

8. Operate computers, network equipment and other related hardware.

9. Complete continuing projects while troubleshooting unexpected system problems.

10. Work cooperatively with customers in a responsive, helpful, courteous and tactful manner.

11. Communicate clearly and concisely, both orally and in writing.

12. Establish and maintain effective working relationships other Information Services team members, managers, administrators, staff and others contacted in the course of work.

Training and Experience
A typical way of obtaining the knowledge, skills and abilities outlined above is graduation from a four-year college or university with a major in computer science, information systems or a closely related field; and at least three years of progressively responsible experience in the development, installation and maintenance of networks and network applications; or some combination of education, training and experience that produces the requisite knowledge and ability.

Licenses; Certificates; Special Requirements
Microsoft Certified Systems Engineer (MCSE), Cisco Certified Network Administrator (CCNA) or the equivalent are desirable. A valid Class C California driver's license, good driving record and the ability to maintain insurability under the District's vehicle insurance policy.

PHYSICAL AND MENTAL DEMANDS
The physical and mental demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Physical Demands
While performing the duties of this class, an employee is regularly required to sit; talk or hear, in person and by telephone; use hands repetitively to finger, handle, feel or operate computers and other standard office equipment; and reach with hands or arms. An employee is frequently required to walk and stand and occasionally to lift up to 50 pounds. Specific vision abilities required by this job include close vision and the ability to adjust focus.

Mental Demands
While performing the duties of this class, an employee is regularly required to use oral and written communication skills; read and interpret complex data, information and documents; analyze and solve problems; observe and interpret situations; use math and mathematical reasoning; learn and apply new skills or information; perform highly detailed work on multiple, concurrent tasks; work under changing deadlines with frequent interruptions; work effectively as a team leader or member; and interact with managers, internal customers, employees, vendors, consultants and others encountered in the course of work.

WORK ENVIRONMENT
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. The employee works under typical office conditions, and the noise level is moderately quiet. The employee is on call 24x7 for the resolution of systems and network problems and issues.

Board Approved: 11/14/2012

Systems Administrator

BASIC FUNCTION:

Under general direction, responsible for providing professional-level technical support services to ensure the integrity and reliability of assigned servers, operating systems, and related network applications and services; participates in the most complex systems infrastructure upgrades, enhancements, conversions and troubleshooting; serves as a technical lead for major platforms and operating systems; leads and manages completion of projects to meet District time, budget and quality requirements.

DISTINGUISHING CHARACTERISTICS

Incumbents are expected to administer and manage assigned systems with high reliability and a minimum of supervision and direction, while providing leadership and technical guidance to other staff performing system administration tasks. Work requires in-depth technical knowledge of the District's overall systems infrastructure and associated integration and interoperating requirements and challenges. Windows group policy creation and modification using advanced scripting techniques to automate and manage the district computer population.

ESSENTIAL DUTIES/RESPONSIBILITIES:

Administers assigned enterprise server platforms running a variety of operating system software in both physical and virtual environments; installs, configures, tests, integrates and administers Windows Active Directory, document management systems and other major servers, including system monitoring and management software tools; using applicable tools and utilities, monitors system performance, including server utilization and availability; performs performance tuning to achieve optimal system speed, reliability and performance; ensures systems security, disaster response and recovery processes are followed; monitors computer room environment for appropriate cooling and power consumption.

Administers or participates in administering enterprise-wide data storage in a Storage Area Network (SAN), Network Attached Storage (NAS) environment; participates in planning storage allocation architecture and allocating storage capacity; tunes and maintains SAN and NAS systems and SAN network connectivity; provides technical oversight of backup strategy; configures and maintains offsite disaster recovery databases.

Researches, troubleshoots and resolves complex and ambiguous problems often involving a combination of hardware, operating system, internally developed and vendor application software and database structure configuration, resource conflict and/or interoperating problems; installs and tests operating system patches, releases, upgrades and fixes; assesses system capacity issues, evaluates software and other alternatives and recommends system upgrades or replacements. Performs systems administration for district-wide applications; monitors daily e-mail notifications generated by scripts; researches and documents server and client configuration issues and the resolution of problems; works with external entities to research and resolve authentication and routing issues; installs and administers spam filters and anti-virus software; interacts with users to determine needs and recommend solutions to email and messaging needs; provides administration support for specialized and complex systems and software.

Monitors disk usage to ensure adequate database resources and provides disk storage as required; assists database administrators with database performance issues; with guidance, makes changes to data permissions, performs cleanup of obsolete data and supports the migration and archiving of data; performs backup and recovery processes; develops scripts to automate routine system maintenance tasks.

Provides technical assistance during the installation and testing of software; installs, tests and configures applications and new software functionalities to applicable server and client platforms; using applicable languages, tools and utilities, provides technical advice to applications development staff of methods of performing application problem troubleshooting and resolution; recommends and installs program modifications to enhance system performance.

Participates with members of the technology services team, vendors and end users to ensure effective integration, operation and concurrent connectivity of multiple platforms and networks; participates in the development and implementation on systems and network standards and procedures.

Works with customers and other technology stakeholders to evaluate the uses of new technology to meet business process requirements; participates in the evaluation of new software and technologies to determine their functionality, interoperability, reliability, availability and supportability and expected return on investment; prepares periodic reports on new trends and opportunities.

Participates in or conducts assigned research and development projects, including assisting network consultants in testing in a virtual environment; participates in developing new methodologies, standards, frameworks and tools; trains other staff on uses of new technology tools.

Maintains up-to-date technical knowledge by attending educational workshops, reviewing professional publications, establishing personal networks and participating in professional associations. Performs other job-related duties as assigned.

JOB COMPETENCIES: KNOWLEDGE, SKILLS, AND ABILITIES:
KNOWLEDGE OF:

- Operating system architectures, characteristics, components and commands applicable to enterprise information systems and multiple platform operating systems; principles of network design and integration, including topologies and protocols;
- Data storage technology principles, practices, hardware, components and software including SAN and Windows Active Directory environments;
- Principles, practices and methods of systems/network administration and maintenance, including configuration, performance tuning and diagnostic tools;
- Principles and practices of disaster recovery; database management systems and software, including architectures, diagnostic tools, commands and utilities; Tools and utilities used in monitoring and tuning systems, database and application performance.
- Systems integration design concepts and practices.
- Systems security and capacity planning principles, methods and practices;

- Principles, practices, methods and techniques of project management as they apply to information technology projects.
- Script languages including, command line, visual basic, powershell and other relevant languages.

ABILITY TO:

Perform complex systems administration in a multi-platform and operating systems environment independently and with a high degree of understanding of inter-operating and integration issues. Establish and maintain project schedules and balance responsibilities for multiple activities to ensure timely, high-quality results.
Perform advanced systems troubleshooting and tuning to resolve complex systems management, communication and inter-operating problems.

- Communicate clearly and effectively, both orally and in writing.
- Prepare clear, concise and accurate proposals, reports, documentation and other written materials.
- Exercise sound independent judgment within general policy guidelines.
- Keep technical skills current to meet continuing systems administration responsibilities. Use tact and diplomacy when dealing with sensitive, complex and/or confidential issues and situations.
- Establish and maintain highly effective, customer-focused working relationships with all end users, other CVUSD staff, representatives of other agencies and others encountered in the course of work. Maintain an appropriate work pace to accomplish an acceptable volume of work

MINIMUM ENTRANCE QUALIFICATIONS:
EDUCATION/EXPERIENCE:
Graduation from an accredited college or university with a degree in management information systems, information technology, computer science or a closely related field, AND at least four (4) years of current systems administration experience in a Windows/Active Directory environment, including configuring, coordinating and implementing releases, upgrades or changes to complex operating systems, servers and related software in a high-availability environment.

LICENSES/CERTIFICATIONS/SPECIAL REQUIREMENTS:
Valid California Class C Driver's License

WORK CONDITIONS:
PHYSICAL DEMANDS
Level – Moderate / Performance of position duties/responsibilities is subject to occasional standing, walking, reaching, twisting, turning, kneeling, bending, squatting, and/or stooping, while performing duties requiring lifting, pushing, pulling, carrying, moving, and/or positioning objects weighting up to 25lbs frequently and up to 50lbs occasionally; the position is subject to exercising continuous manual

dexterity (i.e., coordinated and/or precise movement of hands, arms and fingers) throughout a work shift to operate computer equipment and peripherals.

TECHNOLOGY SUPPORT SPECIALIST III

DEFINITION

Under general supervision, perform intermediate duties relating to the installation, maintenance and support of computer networks and related software and hardware at various sites; support the addition of networks, links, and upgrades; maintain computer data communications networks and perform associated technical and support functions; provide assistance, direction and training to users, technology staff, and school site staff; work at various sites to troubleshoot problems with servers, network equipment, computers, tablets, printers and software; communicate with District and site support staff on technical issues.

EXAMPLES OF DUTIES

The following duties are typical for this classification. Incumbents may not perform all of the listed duties and/or may be required to perform additional or different duties from those set forth below to address business needs and changing business practices.

1. Operates and maintains a variety of equipment including computers, tablets, printers, network servers, and other networking equipment.
2. Reviews hardware and software requirements.
3. Responds to hardware and software service requests.
4. Provides project management.
5. Provides leadership to other technology support staff.
6. Coordinates computer installations, desktop projects and day to day activities.
7. Sets up and configures new and existing instructional and administration computers and tablets.
8. Installs software on new and used computers and tablets.
9. Troubleshoots complex computer/tablet software and hardware problems.
10. Installs and performs advanced configuration of Microsoft-based and Apple-based servers.
11. Administrates multi-tier server infrastructure including but not limited to user accounts, groups, DHCP, WINS, file shares, printing.
12. Performs advanced installation and configuration of switches including VLANs, Access Lists and layer 3 functionality.
13. Install and performs advanced configuration of the wireless infrastructure
14. Installs and performs basic configuration of Layer 3 network devices.
15. Troubleshoots and resolves basic to advanced network problems.
16. Installs and configures RAID and storage area networks (SAN).
17. Installs and performs advanced configuration of management software including backup, device management and imaging software, antivirus, and various server management utilities.
18. Installs and performs advanced configuration of a multi-tier Microsoft Exchange infrastructure.
19. Installs and configures technologies including web servers, Internet filters, database servers and firewalls.
20. Serves as backup support for the Network Administrator and/or Systems Administrator.
21. Provides technology reviews, written proposals, presentations and technical specifications.
22. Researches and evaluates Local Area Network (LAN) products and alternatives.
23. Provides technical recommendations in written professional format.
24. Installs and performs advanced configuration of other networked applications.
25. Maintains records on all computer installations and technology service requests.
26. Coordinates network data wiring layouts and additions.
27. Works with vendors on software and hardware installations, troubleshooting, administration and maintenance.
28. Creates documentation, manuals and other advanced technical documents.
29. Provides assistance with District technology initiatives as needed.

30. Performs other related duties as required.

QUALIFICATIONS

Knowledge of:

Methods, tools and equipment used in the installation and service of hardware and software; various computer and tablet operating systems; current computer network technology; basic industry standard networking principles, theories and practices; intermediate understanding of networking protocols, hardware and technology including Ethernet/Fast Ethernet/Gigabit Ethernet, Cisco IOS, Microsoft Active Directory Services; understanding of physical wiring standards for both copper and fiber optic cable; design of Main Distribution Frame (MDF) and Intermediate Distribution Frame (IDF); LAN and WAN design using commonly available technologies; firewall and network security; intermediate TCP/IP design and configuration; use of network management software.

Ability to:

Install computers, tablets, printers and other peripheral devices; install and test software and hardware; install and configure network and server-based application software; install and configure server-based solutions including Terminal Services, web-based application services, and other emerging technologies; evaluate and recommend networked applications; provide leadership and support to technology support staff; work closely with the management in long-term plans and strategies; assist with the maintenance and troubleshooting of network hardware and software; communicate clearly and concisely both oral and written; adapt to changing technologies and learn functionality of new equipment and systems; demonstrate good interpersonal skills to work with students, teachers, administrators, supervisors, coworkers and vendors; learn new skills to keep current with technology changes; instruct others in the use and care of network technology and software; work with limited supervision; multi-task while maintaining patience and flexibility; manage time effectively between multiple sites; understand and carry out oral and written instructions; establish and maintain cooperative working relationships; comply with the District's customer service standards, as outlined in Board policy.

Education/Experience:

Any combination equivalent to: Completion of the twelfth grade supplemented by training and/or coursework in computer and network operations. Associates degree preferred but not required; and four years of computer related experience or any combination of experience and coursework in such areas as installation, configuration, troubleshooting, and repair of computer hardware, software and peripheral devices preferably in a networked environment, and at least one year networking experience. MCP/MCSE preferred but not required. CCNA preferred but not required.

License/Certificate Requirement:

Possession of a valid California Driver's License.

PHYSICAL DEMANDS AND WORKING ENVIRONMENT

The conditions herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.

Environment: Work is performed primarily in a standard office setting.

Physical: Primary functions require sufficient physical ability and mobility to work in an office setting; to stand or sit for prolonged periods of time; to occasionally stoop, bend, kneel, crouch, reach, and twist; to lift, carry, push, and/or pull light to moderate amounts of weight; to operate computer

equipment requiring repetitive hand movement and fine coordination including use of a computer keyboard; and to verbally communicate to exchange information.

Vision: See in the normal visual range with or without correction.

Hearing: Hear in the normal audio range with or without correction.

TECHNOLOGY SUPPORT SPECIALIST II

DEFINITION

Under general supervision, to provide technology support in the operation, maintenance and support of a computer network including all technology devices, software, and peripherals; install and configure personal computer equipment; install and configure necessary software applications; perform related work as required; provide assistance, direction and training to users and school site staff; work at various sites to troubleshoot problems with servers, network equipment, computers, tablets printers and software; communicate with District and site support staff on technical issues.

EXAMPLES OF DUTIES

The following duties are typical for this classification. Incumbents may not perform all of the listed duties and/or may be required to perform additional or different duties from those set forth below to address business needs and changing business practices.

1. Operates and maintains a variety of equipment including computers, printers, tablets, network servers, and other networking equipment.
2. Reviews hardware and software requirements.
3. Responds to hardware and software service requests.
4. Sets up and configures new and existing instructional and administration computers and tablets..
5. Installs software on new and used computers and tablets.
6. Provides computer and tablet support services to maintain optimum system operations including preventative maintenance.
7. Troubleshoots computer, tablet and printer problems.
8. Utilizes deployment tools to manage mobile devices and image systems.
9. Performs preventative maintenance on hardware and software; performs basic hardware repair; may provide limited support and scheduling duties for the video distribution system.
10. Assists in the basic maintenance, upgrades, and security of the District's various Local Area Networks (LAN) including the wireless network.
11. Installs and configures servers for network placement.
12. Installs and configures networked applications.
13. Installs and performs basic configuration of network switches and hubs.
14. Troubleshoots and resolves basic network problems.
15. Maintains records on all computer installations and technology service requests; maintains equipment and software inventory.
16. Coordinates networking data wiring layouts and additions.
17. Works with vendors on software and hardware installations, troubleshooting, administration and maintenance.
18. Creates documentation and other technical documents.
19. May provide cell phone support for District staff; assists users with cell phone and PDA setup and troubleshooting.
20. May assist with the administration of the laptop program; configures, distributes, updates, and monitors laptops for District staff.
21. Provides assistance with District technology initiatives as needed.
22. Performs other related duties as required.

QUALIFICATIONS

Knowledge of:

Methods, tools and equipment used in the installation and service of hardware and software; various computer and tablet operating systems and Microsoft Office suite; current computer network technology; basic industry-standard networking principles; basic understanding of networking

protocols, hardware and technology; understanding of physical wiring standards for both copper and fiber optic cabling.

Ability to:

Install computers, tablets, printers and other peripheral devices; install and test software and hardware; assist with the maintenance and troubleshooting of network hardware and software; communicate clearly and concisely both oral and written; demonstrate good interpersonal skills to work with students, teachers, administrators, supervisors, co-workers and vendors; learn new skills to keep current with technology changes; instruct others in the use and care of computer technology and software; adapt to changing technologies and learn functionality of new equipment and systems; work with limited supervision; multitask while maintaining patience and flexibility; manage time effectively between multiple sites; understand and carry out oral and written instructions; establish and maintain cooperative working relationships; comply with the District's customer service standards, as outlined in Board policy.

Education/Experience:

Any combination equivalent to: Completion of the twelfth grade supplemented by training and/or coursework in computer and network operations. Associates degree preferred but not required; and one year of computer related experience or any combination of experience and coursework in such areas as installation, configuration, troubleshooting, and repair of computer hardware, software and peripheral devices preferably in a networked environment. MCP/MCSE preferred but not required.

License/Certificate Requirement:

Possession of a valid California Driver's License.

PHYSICAL DEMANDS AND WORKING ENVIRONMENT

The conditions herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.

Environment: Work is performed primarily in a standard office setting.

Physical: Primary functions require sufficient physical ability and mobility to work in an office setting; to stand or sit for prolonged periods of time; to occasionally stoop, bend, kneel, crouch, reach, and twist; to lift, carry, push, and/or pull light to moderate amounts of weight; to operate computer equipment requiring repetitive hand movement and fine coordination including use of a computer keyboard; and to verbally communicate to exchange information.

Vision: See in the normal visual range with or without correction.

Hearing: Hear in the normal audio range with or without correction.

protocols, hardware and technology; understanding of physical wiring standards for both copper and fiber optic cabling.

Ability to:

Install computers, tablets, printers and other peripheral devices; install and test software and hardware; assist with the maintenance and troubleshooting of network hardware and software; communicate clearly and concisely both oral and written; demonstrate good interpersonal skills to work with students, teachers, administrators, supervisors, co-workers and vendors; learn new skills to keep current with technology changes; instruct others in the use and care of computer technology and software; adapt to changing technologies and learn functionality of new equipment and systems; work with limited supervision; multitask while maintaining patience and flexibility; manage time effectively between multiple sites; understand and carry out oral and written instructions; establish and maintain cooperative working relationships; comply with the District's customer service standards, as outlined in Board policy.

Education/Experience:

Any combination equivalent to: Completion of the twelfth grade supplemented by training and/or coursework in computer and network operations. Associates degree preferred but not required; and one year of computer related experience or any combination of experience and coursework in such areas as installation, configuration, troubleshooting, and repair of computer hardware, software and peripheral devices preferably in a networked environment. MCP/MCSE preferred but not required.

License/Certificate Requirement:

Possession of a valid California Driver's License.

PHYSICAL DEMANDS AND WORKING ENVIRONMENT

The conditions herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.

Environment: Work is performed primarily in a standard office setting.

Physical: Primary functions require sufficient physical ability and mobility to work in an office setting; to stand or sit for prolonged periods of time; to occasionally stoop, bend, kneel, crouch, reach, and twist; to lift, carry, push, and/or pull light to moderate amounts of weight; to operate computer equipment requiring repetitive hand movement and fine coordination including use of a computer keyboard; and to verbally communicate to exchange information.

Vision: See in the normal visual range with or without correction.

Hearing: Hear in the normal audio range with or without correction.

TECHNOLOGY SUPPORT SPECIALIST I

DEFINITION

Under general supervision, to provide technology assistance at elementary and/or middle schools in the operation, maintenance and support of a computer network including all technology devices, software, and peripherals; install and configure personal computer equipment; install and configure necessary software applications; perform related work as required.

EXAMPLES OF DUTIES

The following duties are typical for this classification. Incumbents may not perform all of the listed duties and/or may be required to perform additional or different duties from those set forth below to address business needs and changing business practices.

1. Operates and maintains a variety of equipment including computers, tablets, printers, network servers, and other networking equipment.
2. Provides basic computer and tablet support services to maintain optimum system operations including preventative maintenance.
3. Assists in the use of deployment tools for mobile device management and imaging.
4. Assists in the maintenance of the school Local Area Network (LAN) including coordination of daily administration and management tasks.
5. Assists in the implementation and support of network security on the elementary and middle schools Local Area Network (LAN).
6. Reviews hardware and software requirements.
7. Maintains records and inventory of equipment and software.
8. Sets up and configures new and existing instructional and administration Windows and Macintosh computers.
9. Installs software on new and used computers and tablets.
10. Responds to hardware and software service requests.
11. Troubleshoots computer and printer problems.
12. Troubleshoots access to the wireless network.
13. Maintains records on all computer installations and technology service requests.
14. Works with vendors on software and hardware installations, troubleshooting, administration and maintenance.
15. Provides assistance with District technology initiatives as needed.
16. Performs preventative maintenance on hardware and software.
17. Performs other related duties as required.

QUALIFICATIONS

Knowledge of:

Methods, tools and equipment used in the installation and service of hardware and software; various computer and tablet operating systems; current computer network technology; basic industry standard networking principles.

Ability to:

Install computers, tables, printers and other peripheral devices; install and test software and hardware; communicate clearly and concisely both oral and written; demonstrate good interpersonal skills to work with students, teachers, administrators, supervisors, co-workers and vendors; learn new skills to keep current with technology changes; instruct others in the use and care of computer technology and software; adapt to changing technologies and learn functionality of new equipment and systems; work with limited supervision; multi-task while maintaining patience and flexibility; manage time effectively between multiple sites understand and carry out oral and written instructions; establish

and maintain cooperative working relationships; comply with the District's customer service standards, as outlined in Board policy.

Education/Experience:

Any combination equivalent to: Completion of the twelfth grade, supplemented by training and/or coursework in computer and network operations; and one year computer related experience or any combination of experience and coursework in such areas as installation, configuration, troubleshooting, and repair of computer hardware, software, and peripheral devices preferably in a networked environment.

License/Certificate Requirement:

Possession of a valid California Driver's License.

PHYSICAL DEMANDS AND WORKING ENVIRONMENT

The conditions herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.

Environment: Work is performed primarily in a standard office setting.

Physical: Primary functions require sufficient physical ability and mobility to work in an office setting; to stand or sit for prolonged periods of time; to occasionally stoop, bend, kneel, crouch, reach, and twist; to lift, carry, push, and/or pull light to moderate amounts of weight; to operate office equipment requiring repetitive hand movement and fine coordination including use of a computer keyboard; and to verbally communicate to exchange information.

Vision: See in the normal visual range with or without correction.

Hearing: Hear in the normal audio range with or without correction.

Help Desk Technician

DEFINITION

Under supervision of the support services manager, provides first-level hardware and software technical support to school site and administrative personnel including classroom teachers and aides; query staff on various technological problems, analyze the responses and assist with the solution.

EXAMPLES OF DUTIES

The following duties are typical for this classification. Incumbents may not perform all of the listed duties and/or may be required to perform additional or different duties from those set forth below to address business needs and changing business practices.

- Provides hardware and software support to school site and administrative personnel in a professional manner; effectively communicate step by step instructions via the telephone and site visits.
- Provides basic computer and tablet support services to maintain optimum system operations including preventative maintenance.
- Operates computers utilizing a variety of software applications to prepare documents incorporating text, graphs, and charts.
- Maintains and updates various training, hardware, employee and customer databases.
- Utilizes spreadsheets, database information, scanned objects, and graphics for word processing applications.
- Maintains and updates a customer support (Help Desk) database.
- Provides telephone technical support to customers, including instructional and administrative personnel in a high volume help desk.
- Assists with the computer and tablet installation process.
- Assists with the receiving, inventory and asset database process
- Organizes and prepares software application documentation.
- Creates training certificates and surveys for personnel completing classes.
- May train district personnel in the use of hardware and software.
- Prepares training manuals and orders supplies.
- Screens and schedules personnel into training classes.
- Troubleshoots computer, tablet and printer problems via the phone, site visit, and remotely.
- Maintains records on all technology service requests.
- Maintains confidentiality in preparing privileged and sensitive materials.
- Works with vendors on software and hardware troubleshooting, administration and maintenance.
- Prioritizes and completes work within required deadlines.
- Provides assistance with District technology initiatives as needed.
- Performs other related duties as required.

QUALIFICATIONS

Knowledge of:

Methods, tools and equipment used in the support and service of hardware and software; various computer and table operating systems, Microsoft Office suite or other word processing, spreadsheet, desktop publishing and database management software; correct English usage, spelling, grammar, and punctuation; modern office methods, practices, and procedures; current computer technology; basic industry-standard networking principles; current help desk principles.

Ability to:
Operate a computer and tablet operating systems; type or enter data at a speed necessary for successful job performance; communicate clearly and concisely both oral and written; demonstrate good interpersonal skills to work with students, teachers, administrators, supervisors, co-workers and vendors; learn new skills to keep current with technology changes; troubleshoot basic network problems; instruct others in the use and care of computer technology and software; adapt to changing technologies and learn functionality of new equipment and systems; work with limited supervision; multi-task while maintaining patience and flexibility; understand and carry out oral and written instructions; establish and maintain cooperative working relationships; comply with the District's customer service standards, as outlined in Board policy.

Appendix B

Study Agreement

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

FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
STUDY AGREEMENT
October 7, 2014

The Fiscal Crisis and Management Assistance Team (FCMAT), hereinafter referred to as the team, and the Lake Elsinore 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

1. Conduct a comprehensive analysis of the district's state of technology including hardware, software, department staffing, and technology use. Interview principals, department directors and classified staff to gather data on the software applications and hardware utilized. Review and analyze the district's technology master plan.
2. Analyze the status of the following:
   a. Project management
   b. Infrastructure planning, deployment, and maintenance
   c. Network administration
   d. Website development and support
   e. Hardware installation and setup
   f. Application software used at district and site levels
   g. Technology in the classrooms

3. Review the job descriptions, skill level, and staffing of the technology department, including any site level support. The Technology Department consists of one director, two managers and six technicians.
4. Review district board policies on the use and integration of technology for district-level and site-based instruction.
5. Make staffing recommendations based on the support level necessary to meet the district's technology requirements.
6. Review the network design for systems data safeguards against a catastrophic event or security breach.
7. Review the processes or planning in place for ensuring that hardware and software assets are up to date.
8. Review staffing levels, infrastructure, and professional development related to support of online assessment testing.

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*
B. To be determined	*FCMAT Consultant*
C. 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 $15,000.

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.

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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, where 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:	November 2014
Staff Interviews:	November 2014
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. COMMENCEMENT, TERMINATION AND COMPLETION OF WORK:

FCMAT will begin work as soon as it has assembled an available and appropriate study team consisting of FCMAT staff and independent consultants, taking into consideration other jobs FCMAT has previously undertaken and assignments from the state. The team will work expeditiously to complete its work and deliver its report, subject to the cooperation of the district and any other parties from whom, in the team's judgment, it must obtain information. Once the team has completed its field work, it will proceed to prepare a preliminary draft report and a final report. Prior to completion of field work, the district may terminate its request for service and will be responsible for all costs incurred by FCMAT to the date of termination under Section 4 (Project Costs). If the district does not provide written notice of termination prior to completion of field work, the team will

complete its work and deliver its report and the district will be responsible for the full costs. The district understands and agrees that FCMAT is a state agency and all FCMAT reports are published on the FCMAT website and made available to interested parties in state government. In the absence of extraordinary circumstances, FCMAT will not withhold preparation, publication and distribution of a report once field work has been completed, and the district shall not request that it do so.

8. **INDEPENDENT CONTRACTOR:**

FCMAT is an independent contractor and is not an employee or engaged in any manner with the district. The manner in which FCMAT's services are rendered shall be within its sole control and discretion. FCMAT representatives are not authorized to speak for, represent, or obligate the district in any manner without prior express written authorization from an officer of the district.

9. **INSURANCE:**

During the term of this agreement, FCMAT shall maintain liability insurance in an amount not less than $1 million unless otherwise agreed upon in writing by the district, automobile liability insurance in the amount required under California state law, and workers compensation as required under California state law. FCMAT shall provide certificates of insurance, with additional insured endorsements, indicating applicable insurance coverages prior to the commencement of work.

10. **HOLD HARMLESS:**

FCMAT shall hold the district, its board, officers, agents and employees harmless from all suits, claims and liabilities resulting from negligent acts or omissions of its board, officers, agents and employees undertaken under this agreement. Conversely, the district shall hold FCMAT, its board, officers, agents and employees harmless from all suits, claims and liabilities resulting from negligent acts or omissions of its board, officers, agents and employees undertaken under this agreement.

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11. **CONTACT PERSON**

Name: George Landon, Deputy Superintendent
Telephone: (951) 253-7095
E-mail: george.landon@leusd.k12.ca.us

10-8-14
George Landon, Deputy Superintendent — Date
Lake Elsinore Unified School District

October 7, 2014
Anthony L. Bridges, CFE, CICA — Date
Deputy Executive Officer
Fiscal Crisis and Management Assistance Team

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