



FISCAL CRISIS & MANAGEMENT
ASSISTANCE TEAM

CSIS California School Information Services

Lodi Unified School District

Technology Review

October 25, 2017



Michael H. Fine
Chief Executive Officer





October 25, 2017

Cathy Nichols-Washer, Ed.D., Superintendent
Lodi Unified School District
1305 Vine Street
Lodi, CA 95240

Dear Superintendent Nichols-Washer,

In December 2016, the Lodi Unified School District and the Fiscal Crisis and Management Assistance Team (FCMAT) entered into an agreement for a technology review. Specifically, the agreement stated that FCMAT would perform the following:

1. Analyze the status of the following and make recommendations for improvement, if any:
 - a. Leadership
 - b. Project management
 - c. Software and hardware standards
 - d. Help desk system and ticketing process
 - e. Device installation and setup
 - f. Professional development of technology support staff
2. Review the processes or planning used to ensure that hardware and software are up to date and make recommendations for improvement, if any.
3. Review the maintenance of systems such as servers, computing devices, and major systems such as the student information system and integrated financial system to include best practices with regard to updates, patch management, and maintenance scheduling, and make recommendations for improvement, if any.
4. Conduct an organizational and staffing review of the district technology department and plans, including school site technology support staff, and make recommendations for staffing improvements or reductions, if any.

FCMAT

Michael H. Fine, Chief Executive Officer

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This final report contains the study team's findings and recommendations in the above areas of review. FCMAT appreciates the opportunity to serve the Lodi Unified School District, and extends thanks to all the staff for their assistance during fieldwork.

Sincerely,

A handwritten signature in black ink, reading "Michael H. Fine". The signature is written in a cursive, flowing style.

Michael H. Fine
Chief Executive Officer

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About FCMAT

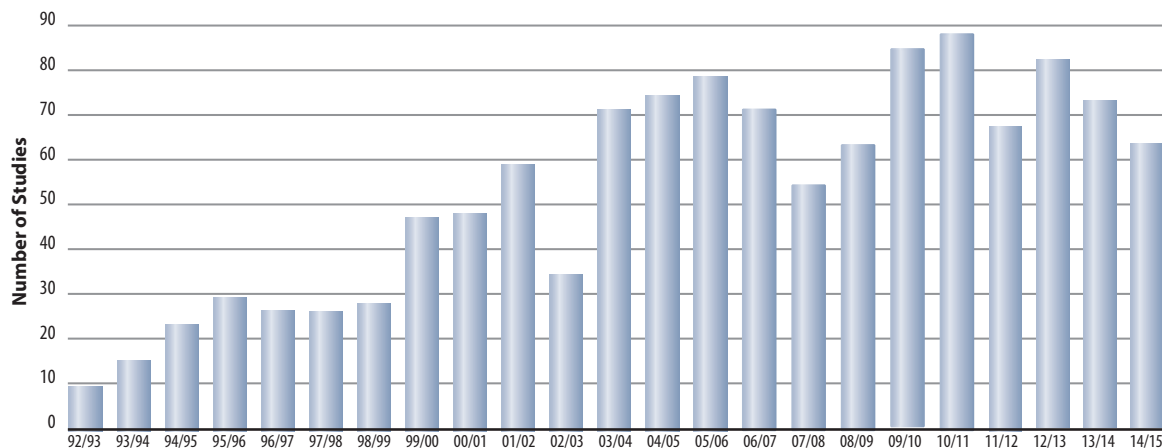
FCMAT's primary mission is to assist California's local K-14 educational agencies to identify, prevent, and resolve financial, human resources and data management challenges. FCMAT provides fiscal and data management assistance, professional development training, product development and other related 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, support the training and development of chief business officials and help to create efficient organizational operations. FCMAT's data management services are used to help local educational agencies (LEAs) meet state reporting responsibilities, improve data quality, and inform instructional program decisions.

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 LEA 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.

FCMAT has continued to make adjustments in the types of support provided based on the changing dynamics of K-14 LEAs and the implementation of major educational reforms.

Studies by Fiscal Year



FCMAT also develops and provides numerous publications, software tools, workshops and professional development opportunities to help LEAs operate more effectively and fulfill their fiscal oversight and data management responsibilities. The California School Information Services (CSIS) division of FCMAT assists the California Department of Education with the implementation of the California Longitudinal Pupil Achievement Data System (CALPADS). CSIS also hosts and maintains the Ed-Data website (www.ed-data.org) and provides technical expertise to the Ed-Data partnership: the California Department of Education, EdSource and FCMAT.

FCMAT was created by Assembly Bill (AB) 1200 in 1992 to assist LEAs to meet and sustain their financial obligations. AB 107 in 1997 charged FCMAT with responsibility for CSIS and its state-wide data management work. AB 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. AB 2756 (2004) provides specific responsibilities to FCMAT with regard to districts that have received emergency state loans.

In January 2006, Senate Bill 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 Lodi Unified School District serves several communities in San Joaquin County, including Lodi, north Stockton, Acampo, Clements, Lockeford, Victor and Woodbridge. The district provides educational services to approximately 30,400 students and enrollment has not varied significantly over the past few years. The percentage of students receiving free and reduced priced meals has also remained consistent at approximately 65% during this same period.

The district operates two alternative schools, one community day school, two continuation schools, 34 elementary schools, five middle schools, and six comprehensive high schools.

Study Team

The study team was composed of the following members:

Scott Sexsmith
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*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 December 2016, the Lodi Unified School District requested that FCMAT review its technology support services. FCMAT visited the district on February 21-24, 2016 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
- Professional Development for Technology Staff

- Services
- 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

Technology Planning, Leadership and Vision

Technology support is provided by 36 full-time equivalent (FTE) positions in the technology services department. All positions are full time and two positions were vacant at the time of FCMAT's fieldwork.

The director of technology services is the leader of the department and reports to the superintendent. Assisting in leadership and management of staff are the network and systems supervisor, operations supervisor, and support services supervisor.

Staffing is discussed throughout this report and in detail in the Technology Support Staffing and Organization section.

The district's existing technology plan expires June 30, 2018; however, the document has not been updated since 2012 and uses an obsolete format that was required for the now defunct Enhancing Education Through Technology (EETT) grant. While the district does have a technology advisory committee, it is not charged with drafting formal planning documents, and according to staff interviews it does not refer to the existing outdated plan when making technology recommendations.

All the school site staff and the various district staff interviewed by FCMAT knew of no long-term, districtwide technology plan. Most did not understand the role of the technology advisory committee and no one interviewed mentioned the technology goals noted in the Local Control and Accountability Plan (LCAP) document.

Professional Development for Technology Staff

All technology services staff interviewed reported broad support for professional development. However, some confusion was reported regarding individual staff development goals as discussed during staff evaluations. In fact, the evaluation process appears to be inconsistent, with several staff members reporting long gaps between evaluations, a reliance on self-evaluations and limited time devoted to the discussion of personal professional development goals with supervisors. Technology services supervisors, under the guidance of the technology services director, should formalize and extend the professional development coursework matrix, mapping collections of courses to positions in the department. Staff can use this document to make informed decisions when selecting courses based on their professional goals and personal interests. The matrixes can also be used in employee performance evaluations to show measurable professional development progress. The director of technology services should also expect supervisors to evaluate their staff annually. While evaluations serve many purposes, the professional development component should be prioritized, as it can assist staff members who are struggling and can motivate high performing employees.

Services

The district is struggling with setting and effectively communicating hardware standards to school sites and support departments. Interviews with school site staff and technology services team members revealed substantial confusion regarding some important hardware standards. Site administrative staff and support staff reported not knowing where to find information about standard district devices used by front office and support staff.

The hardware and software replacement life cycles are generally well maintained, with equipment and software updated regularly. A comprehensive plan is in place for the tracking and control of

hardware life cycles and the monitoring of end-of-life dates of equipment that will no longer be supported by the vendor after this date. Software is kept up to date with new releases, and most devices are within current release levels.

Technology Support Staffing and Organization

The director of technology services leads the technology services department. However, many medium to large districts in California have moved to having chief technology officers as the executive leadership position overseeing technology. To ensure that technology is properly used throughout the organization, a majority of these positions report directly to the superintendent and serve on the superintendent's cabinet.

The FCMAT team observed significant frustration from users with the move to a centralized, remote help desk model. For problems requiring a site visit from a technology services team member, school site staff reported long wait times and a general lack of communication and coordination due to the department's reliance on only one personal computer support technician to perform on-site support for all sites while the remainder of the technicians generally provide remote support.

Staff at every school site visited reported a loss of teacher preparation period time due to spending time supporting technology issues and the misallocation of technology lead teacher assistance time due to the move to remote support. In some cases principals and other administration staff must act as intermediaries, working with the personal computer support technician on teachers' behalf to resolve problems over the phone.

The number of personal computer support technicians providing dedicated school site technology support is significantly low and is reflected in the long wait times for installation and repairs and the ongoing frustration from the school sites. At the time of FCMAT's fieldwork there were 500 open service tickets.

Because different amounts and types of technology are used at each grade level, the requirement for support can vary among schools. For example, high schools may require more staff time and a higher level of technical support than elementary schools. Other variables at each site may include the number of students and staff, the number and age of electronic devices being supported, distances between sites, and the quality of technology professional development for certificated staff.

In many cases technology support equal to 0.5 FTE 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. A 0.5 FTE technology support specialist I could serve the district's community day school and continuation schools.

To provide staffing as outlined above, the district would need a total of 27.5 FTE personal computer support technicians.

The district already employs 10 personal computer support technicians and may need 17.5 new technician positions. This should be done in phases with the addition of several positions followed by a period of analysis and continued evaluation of the need for additional support at the school sites.

Findings and Recommendations

Technology Planning, Leadership and Vision

Technology support is provided by 36 FTE positions in the Technology Services Department. All positions are full time and two positions were vacant at the time of FCMAT's fieldwork.

The director of technology services is the leader of the department and reports to the superintendent. Assisting in leadership and management of staff are the network and systems supervisor, operations supervisor, and support services supervisor.

Staffing is discussed throughout this report and in detail in the Technology Support Staffing and Organization section.

Technology Plan

The district's existing technology plan expires June 30, 2018; however, the document has not been updated since 2012 and uses an obsolete format that was required for the now defunct Enhancing Education Through Technology (EETT) grant. The plan was also used for E-Rate funding compliance; however, the rules governing E-Rate funding have changed and a current plan is no longer required to receive federal funds through the E-Rate program. The director of technology services could not recall the last time the plan was referenced and who was involved in the most recent update. While the district does have a technology advisory committee, it is not charged with drafting formal planning documents, and according to staff interviews it does not refer to the existing, outdated plan when making technology recommendations. The district's LCAP does reference technology goals in section 3. However, no detailed plans are included for replacing a portion of the networking equipment annually or for ensuring adequate future capacity of the infrastructure. By replacing a portion of it annually, the district will generally avoid spikes in budget expenditures for equipment from year to year and will also have a more reliable and better performing network.

All the school site staff and the various district staff interviewed by the FCMAT team knew of no long-term, districtwide technology plan. Most did not understand the role of the technology advisory committee and no one interviewed mentioned the technology goals noted in the LCAP document. Administrators, teachers and school site staff all expressed frustration with the decision-making process involving classroom and front office technology. This frustration and confusion has resulted in difficult site budget development cycles, reduced teacher technology use and wasted resources, like the nearly 100 Promethean large format displays left stored in the warehouse due to a lack of site funds and a specific installation plan. Because the district lacks a current technology plan, resources are going to waste and there is a perceived lack of financial and technical support expressed by the school sites.

The district has recently taken on several large-scale, expensive technology implementations, including but not limited to the purchase and distribution of over 24,000 Chromebooks, network infrastructure upgrades and hundreds of Promethean interactive large format monitors. The interviews conducted by the FCMAT team revealed varying degrees of success, confusing and sometime contradictory communication and limited understanding of the scope and goals of these projects. A formalized technology plan produced with input from a representative selection of district stakeholders, approved by cabinet and adopted by the board of education will set

strategic goals and act as a long-term guide for the successful integration of technology into the greater goals of the organization.

Due to its age and limited scope, the district should abandon the existing EETT/E-Rate technology plan. Several resources are available to assist the district in drafting a new and relevant technology plan. A widely used and highly respected framework is available from the International Society of Technology in Education (<https://www.iste.org/standards/tools-resources/essential-conditions/implementation-planning>). The Alliance for Excellent Education provides the Future Ready Schools framework, which includes tools to aid in the technology plan development (<https://dashboard.futurereadyschools.org/framework>).

Additionally, the California Department of Education (CDE) offers a template and technology plan drafting tool (<http://www.cde.ca.gov/ls/et/rs/>), and in 2016 the U.S. Department of Education published a National Education Technology Plan (<https://tech.ed.gov/files/2015/12/NETP16.pdf>) intended to be used as a guide for technology planning at the state and district levels.

Recommendations

The district should:

1. Replace the technology plan with a current plan aligned with the educational goals detailed in the district's LCAP document.
2. Use the technology advisory committee as the body responsible for drafting, monitoring and updating the district's technology plan. Ensure the technology advisory committee consists of representative stakeholders from all school sites, bargaining units, parent and student groups and the local community. Minimize or eliminate the involvement of elected officials in the technology advisory committee so all decisions are free from political pressure and reflect the values and goals of those who are most affected by the implementation of the technology plan.
3. Produce quarterly reports detailing the implementation status of the technology plan for the district executive leadership team, teachers and staff, school principals and parent and student groups. Provide quarterly implementation reports to the board of education from the technology advisory committee. Provide an annual public update during a regularly scheduled board of education meeting.

Leadership

The department is led by the director of technology services and appears to be generally well run. While the department communicates often with sites and other departments, a common concern in interviews was the lack of communication with participants on some projects and the timing of hardware installations. It was often mentioned in interviews that the technology services support was good, but clear communication on projects and installation of equipment was not. An often-cited example was the recent distribution of Promethean boards to classrooms and the decision to prohibit the purchase of LCD projectors or replacement LCD projector bulbs. After much confusion and school site complaints, the decision was reversed to allow the sites to

purchase LCD replacement bulbs but not LCD projectors. This last decision was not communicated to sites in a clearly understood manner, leading to confusion on bulb purchases.

Internally, the technology services department appears to be doing very well with supervisors meeting weekly one-on-one with department personnel and holding bimonthly meetings with team members. The director meets regularly with supervisors and attends other district department meetings when invited. Several of the supervisors attend monthly non-technology services department meetings such as payroll. The technology services director meets weekly with department supervisors and holds monthly all-staff meetings with half the staff at a time to allow the help desk phones to be answered.

While the technology services director attends meetings in other departments when invited, the director does not sit on the superintendent's cabinet or on principals' cabinet, which in part leads to the communication gap between technology services and the sites.

The technology services department provides key services and contributes to the overall productivity of the district simply because of the various systems the department supports and maintains that are in daily use. Communication of key events is critical to success or failure of these systems and needs to be done so that everyone gets the information they need in a clear and timely manner. While face-to-face communication is often best, it is not always most convenient and e-mail has often become the preferred method in a district for dissemination of information.

Recommendations

The district should:

1. Ensure that the director of technology services is on the superintendent's cabinet and attends all principals' cabinet meetings to improve decision-making and communications.
2. Ensure that communications from the technology services department are clear and timely on issues affecting school sites or other departments.

Project Management

The technology services department lacks a formal project management system and although large technology services projects have been completed on time, there have been difficulties. The technology services department uses the Information Technology Infrastructure Library (ITIL) process for overall technology services management. This is a set of practices that focuses on aligning technology services with the needs of business. It is an excellent set of tools that formalizes the processes of a technology services department. Also available with ITIL is a defined project management process that is simple and works within the existing ITIL process.

ITIL Project Management Process:

- Project Initiation
 - Process Objective: To define stakeholders, responsibilities and resources available to the project, as well as documenting risks, constraints and assumptions affecting the project.

- Project Planning and Coordination
 - Process Objective: To make sure service transitions projects are planned in accordance with the organization's project management guidelines, and to coordinate activities and resources across projects. This process is not responsible for detailed planning of project phases but triggers planning activities performed by other processes.
- Project Control
 - Process Objective: To monitor project progress and resource consumption, to expedite progress when required and to initiate corrective action if required.
- Project Reporting and Communication
 - Process Objective: To provide an overall summary of all planned or ongoing service transition projects as information for customers and other service management processes.

Sources: ITIL V3 by AXELOS Limited, Liquidplanner.com

Setting priorities for project management is one of the largest concerns in the technology services department. Technology services staff related the repeated experience of requests for small and large projects driven by last-minute needs that allow no time for technology services to develop a project management plan. Most projects are delivered on time but not with the best solutions and best research as to their effect on the district and students. For project management to work, the department must be made aware of all projects that will need technology services. This includes data import/export, programming, database queries, student information extracts and uploads to third-party vendors, and a vast variety of other services.

It is important to have a project management process that can be applied to both small and large projects. The lack of formal project management often leads to unfulfilled expectations, missed deadlines and budget overruns.

Recommendations

The district should:

1. Develop and formalize a project management template for use on all technology related projects and use the ITIL or equivalent project management process.
2. Ensure that service requestors inform technology services of needed services for projects or purchased software well before due dates.
3. Set priorities on projects with input from department leads, assign technology services resources, and agree on timelines and budgets.
4. Provide the technology services department adequate time to research projects and recommend the best solutions for the district.

Professional Development for Technology Staff

The district has several interesting, potentially effective programs designed to support the professional development of classified and supervisory staff. The district provides significant salary incentives to staff who complete the required classified district orientation sessions and who go on to finish college level and/or career technical coursework and certifications on their own time. The technology services department also subscribes to several online services offering technical certification curriculum available to all department staff. Some groups in the department have drafted professional development matrixes, listing technical coursework and mapping them to professional development credit accruals for salary enhancements. Furthermore, the department offers to pay for certifications and proctored exams for relevant subject matter. However, if the district pays for the certification, the coursework is ineligible for salary enhancements. The department has also implemented the ITIL training and required all department staff to complete Level 1 of the course. The ITIL training is an industry standard technology services operations framework applicable to all levels of the technology services staff and carries significant resume benefits if multilevel certification is reached.

All technology services staff interviewed reported broad support for professional development in the department. However, some confusion was reported regarding individual staff development goals as discussed during staff evaluations. In fact, the evaluation process appears to be inconsistent, with several staff members reporting long gaps between evaluations, a reliance on self-evaluations and limited time devoted to the discussion of personal professional development goals with supervisors. Technology services supervisors, under the guidance of the technology services director, should formalize and extend the professional development coursework matrix, mapping collections of courses to department positions. Staff can use this document to make informed decisions when selecting courses based on their professional goals and personal interests. The matrixes can also be used in employee performance evaluations to show measurable professional development progress. The director of technology services should also expect supervisors to evaluate their staff annually. While evaluations serve many purposes, the professional development component should be prioritized, as it can assist staff members who are struggling and can motivate high performing employees.

The district's Interim Promotional Opportunity (IPO) process is a point of confusion among many of the technology services staff. This is a district-supported staff development option that allows the department a chance to fill a vacancy with a willing staff member from a different classification on a trial basis. This provides the participating staff valuable hands-on experience in an elevated position and gives the group supervisors an opportunity to determine if the staff member has the skills required to permanently fill the vacancy. Those staff members who knew about and used the IPO process reported positively about the experience and found it to be a valuable professional development option. However, most staff members expressed confusion about the IPO process and did not know how to participate. They reported it was offered inconsistently and many were completely unaware of the program. The lack of communication and inconsistent application of the IPO process greatly reduces its effectiveness. Additionally, the program risks being perceived as a form of favoritism, which may negatively affect morale and further reduce participation. District management should formalize the process by which IPOs will be offered for vacant positions. Once established, the process should be clearly and regularly communicated to all department staff members. All IPO-eligible vacancies should be advertised via department emails and verbally in meetings so all staff members are made aware of the opportunity.

Recommendations

The district should:

1. Ensure every technology services staff member understands how and is encouraged to earn professional growth credits to maximize salary enhancements and keep valuable professional skills current.
2. Formalize technology services specific professional development matrixes detailing the coursework, certification and professional growth credits awarded. Map the matrixes to specific technology services positions, clearly demonstrate the expected skills required for the position and provide an unambiguous plan for staff.
3. Formalize and clearly communicate the IPO process so all technology services staff are aware of it. When possible, use the IPO process to fill department vacancies, ensuring all department staff have the opportunity to apply.
4. Evaluate technology services staff annually and prioritize the discussion of professional development goals for each staff member.
5. Regularly advertise technology services vacancies at staff meetings and via email so all staff are aware of new opportunities.

Services

Software and Hardware Standards

Devices and Software for Non-Teaching Staff

The district is struggling with setting and effectively communicating hardware standards to school sites and support departments. Interviews with school site staff and technology services team members revealed substantial confusion regarding some important hardware standards. Site administrative staff and support staff reported not knowing where to find information about standard district device types used by front office and support staff. Conflicting information was reported by end users about a possible switch to thin clients or Chromeboxes, while some staff claimed Windows desktops were still available for purchase. School administrators stated the lack of consistency has made budgeting for site hardware replacement difficult. Additionally, school site support staff expressed concerns about training, as the operating systems vary depending on the device delivered. This finding was confirmed by interviews with the technology services staff. Department experimentation with various hardware types, like virtual desktop infrastructure and Chromeboxes, have forced the staff to support a wide variety of technologies, making distribution and incident resolution more difficult and time consuming.

According to technology services staff, the technology steering committee helps determine the standard for the initial software used by non-instructional users, and all users receive a baseline set of software. However, interviews of staff at various sites and departments indicate confusion regarding the standard software, disparity in what is installed and available, and almost no understanding of how the standards are established. This may be a result of the district's ongoing transition from Windows 7 to Windows 10 and the piloting of Chromeboxes in some cases.

Devices and Software for Teaching Staff

Approximately five years ago, the district established a standard technology inventory for all teachers that included a laptop, an ELMO document camera and a SMART interactive white board and projector system. The technology services department works with the technology steering committee in selecting the make and model of the standard teacher hardware. The district pays for the standard teacher technology and has established a five-year replacement cycle for teacher laptops and ELMO document cameras. However, interviews with district business officials and technology services management indicate the technology replacement budget is unfunded due to uncertainty with the state budget.

According to interviews, the technology steering committee helps determine the software standards for teacher laptops and the district is upgrading the devices to Windows 10. However, most of the classroom teachers and school principals interviewed by FCMAT were unaware of the technology steering committee and did not believe there was opportunity to help determine technology standards for teaching devices.

A reoccurring concern expressed in multiple site and department interviews was the standard for classroom projection. In early 2016, the district's technology steering committee decided to move away from SMART interactive white boards and short throw projectors as the standard for classroom display. Instead, the committee adopted the Promethean large format interactive display system. Approximately 300 Promethean displays have been purchased, but only 200 have been placed in classrooms. The FCMAT team identified a consistent sense of frustration at all visited sites and by many support staff regarding the lack of communication about the change.

School administrative staff reported significant budget concerns with the sites responsible for all or at least a substantial portion of the \$5,500 per device cost. School site staff stated they were unaware of the costs during last year's budget development cycle and have not been provided with additional funds to help cover the expense. There is also uncertainty about possible installment payment plans or cost sharing options available to some schools.

This has forced many classrooms to make do with dim or malfunctioning projectors as the school sites lack funds to buy the replacement Promethean displays and are unable to purchase replacement bulbs or projectors due to policy preference for Promethean displays.

In interviews, teachers expressed similar frustrations and reported serious concerns about the amount of staff development and technical support needed to fully incorporate the new displays into their lessons. Some stated the devices were not being fully utilized and many found the change overly disruptive to their lesson delivery methods developed for use with the projectors and SMART boards. This frustration has been amplified by technical difficulties with the first generation of devices attached to the interactive displays. The initial adoption of Android-based ClassFlow systems was repeatedly described as error prone and unreliable. This has made some teachers resistant to the change. Technology services and educational technology staff stated ClassFlow performance has improved with a move to Windows 10 based systems, but the rollout of the new devices has not yet started.

Devices and Software for Students

Hardware standards for student devices are more settled. The district has committed to a one-to-one Chromebook model for all students. Carts with between 25 and 36 Chromebooks are assigned to every classroom in grades 3 through 12. The district has distributed two models of Chromebooks from the same manufacturer. Class sets of iPad 2s are provided for K through 2nd grades, which provides consistent and stable hardware.

Student software is more variable due to the widely different student needs, various curriculum programs and teacher requests. The district has a process by which the certificated technology coaches approve the various Chromebook and iPad application requests, but no standard is published. Students can install apps and extensions on Chromebooks at will, which has resulted in conflicts with various applications associated with curriculum adoptions. Teachers are responsible for installing and updating approved iPad apps; however, there is no system in place to restrict the installation of non-approved apps.

Setting standards for both hardware and software supported in the various district environments is an important function of any technology support department. Hardware and software standards are necessary to provide timely support, plan for hardware replacement and software updates, and develop accurate department, site and district budgets. Typically, districts determine standards for three types of user classes: students, teachers, and support and administrative staff. Hardware standards are based on available technology, the users' day-to-day computing needs and the district's ability to sufficiently support and afford the device. Software standards are normally determined by curriculum adoptions, classroom needs and front office business requirements.

Districts that have successfully developed hardware and software standards do so collaboratively with representatives of the various user classes, curriculum and instruction and business staff. Technology services staff help set the technology baselines with their advanced knowledge of available hardware specifications and software options. End users detail their computing needs based on their day-to-day job responsibilities and the software necessary to their job functions.

Business staff help identify purchasing options (standard one-time purchases, leases, the use of state contracts and/or facilitating the bidding process, etc.) and set budget expectations. Curriculum and instruction and teaching staff provide information regarding the technology requirements of new adoptions and teaching methods.

Once the standards have been set, they are normally advertised online via the district's internal website and, if appropriate, on the public website. Additionally, the standards are reviewed at principals' meetings prior to the budget development cycle and early into the start of the school year. Price quotes for each item are provided online and updated regularly with cooperation between the technology support and purchasing departments. If possible, template requisitions for the various standards are created to assist the sites in hardware and software procurement. Technologies radically different from previous standards are often piloted in willing departments or sites, with the understanding that the new systems are experimental and may require modifications of existing practices. The district or the technology support department normally cover pilot costs as an incentive and to minimize the risks to the pilot sites.

Recommendations

The district should:

1. Ensure all sites know of and understand the role of the technology steering committee and how to participate in the committee's decision-making process.
2. Establish annual hardware and software standards review sessions with the technology steering committee, ensuring administrative and front office representatives from sites and the district office participate, as well as teachers and curriculum and instruction staff.
3. Ensure that the technology steering committee finalizes the hardware standard for all school site and district support and administrative staff. Post the finalized standards online and include quotes for each item and purchasing system requisition templates to assist in device ordering.
4. Communicate with vendors quarterly to keep specifications up-to-date. Obtain updated quotes to account for regular model updates and system availability. Advertise any changes, including any financial impact, to all sites via email and at principals' meetings.
5. Communicate any changes to classroom and front office standards prior to the school site budget development cycle. Clearly indicate any change in site funding responsibilities to reduce late cycle budget revisions.
6. Determine a baseline set of student Chromebook apps and configure the administrative console to only allow for the installation of the standard app set. Add apps and extension to the allowed list only after the educational technology coaches have approved them for student use.
7. Migrate to mobile device management-based iPad app deployment. This will allow for more control and standardization of the iPad app installation base.

8. Develop a distribution plan for the remaining Promethean large format displays. Clearly communicate the projector replacement plan, including any restrictions on LCD bulb replacement, existing projector servicing and costs associated with the various options before the next school site budget cycle.

Hardware and Software Updates

The hardware and software replacement life cycles are generally well maintained, with equipment and software updated regularly. A comprehensive plan is in place to track and control hardware life cycles and the monitoring of dates after which the vendor will no longer support the equipment. Software is kept up to date with new releases and most devices are within current release levels.

One hardware area that will need to be addressed soon is the replacement of all Citrix XenServers. These servers host much of the day-to-day operations for technology services staff and district personnel. These are scheduled for replacement during the 2016-17 and 2017-18 fiscal years. VMWare servers are on a five-year replacement cycle and are current within that cycle. Firewall and web content servers are also within their five-year replacement cycle.

Recommendation

The district should:

1. Make plans for the replacement of all Citrix XenServers per the district's replacement cycle.

Maintenance of Servers and Computing Devices

The technology services department stays up to date on necessary patches and updates applied to devices and software applications. A review of system maintenance procedures shows a comprehensive plan for updating servers, PCs, Chromebooks, and Apple devices. Updates are tested in a lab environment before being installed in production machines. The director also approves updates before they are released to production. Review of logs shows that Chrome OS devices and Apple iOS devices are well within current release levels. PC updates are distributed by the Heat LANRev client management system and are pushed out during school session breaks. These updates are logged and are current.

The time between the discovery of an operating system or application vulnerability and the emergence of an exploit is getting shorter, sometimes only a matter of hours. This places pressure on technology services departments to rapidly patch production systems, which directly conflicts with configuration management best practices of quality assurance testing. Many organizations are struggling to keep current with the constant release of new patches and updates. At the same time, they are under pressure to provide near 100% availability of primary systems. Technology services departments must develop a process to ensure the availability of resources, install required security patches and not break existing systems in the process.

Change management is vital to every stage of the patch management process. As with all system modifications, patches and updates must be performed and tracked through the change management system. It is unlikely that an enterprise-scale patch management program can be successful without proper integration with the change management system and organization.

Software Maintenance of QSS and Aeries

There is confusion over who should test QSS, the district's financial software system, updates: the technology services department or the department that uses the software being updated. During interviews with departments using the QSS system it was common to hear that they expected the technology services department to test the QSS updates prior to release to the users. The technology services department supports over 80 paid software products at a cost of more than \$1.7 million a year in addition to the other free software products in the district. It would be difficult for the technology services department alone to install, support, update, test, and ensure that all these software products will work without problems before distribution.

Most of the software products in use, such as QSS and Aeries, were purchased from a vendor that sells these products for the district's use. The technology services department ensures that these products run and are available for use; they are not always experts in the everyday use and functions of the software. Generally, the end user knows the software the best.

It was noted in interviews that the finance department is not allowed access to QSS support email listserv or phone support. While some vendors give a steep discount to districts that limit direct access to vendor support to two to four people rather than all users, subject matter experts in finance should have access to QSS support and listserv resources.

The technology services department occasionally meets with other departments to discuss issues and has a schedule of QSS updates and release dates. No explanation is included of how the updates will affect departments such as payroll or finance. The QSS release notes are formatted for technical use only. It would improve the process if technology services would start meeting regularly with affected departments prior to installation of updates and explain/interpret the release notes for the end users.

Aeries is the district's student information system. It has been in use for approximately four years and seems to be working well. Aeries handles basic student information but also supports all gradebook and assignments, attendance, discipline, and CALPADS reporting functions. The district is on a nine weeks on, two weeks off school schedule. During the two weeks off, any Aeries updates are installed and tested. This is a good approach because Aeries updates are released nearly every week. Several times Aeries has released an update only to release another update 24 hours later to fix a problem introduced by the prior release. Waiting to install updates on the student information system during school breaks works for the district and is a sound patch management process. Protocols are in place if the need arises for the installation of an update during a school session.

A basic rule of patch management from Microsoft's Developer Network states, "The risk of implementing the service pack, hotfix and security patch should ALWAYS be LESS than the risk of not implementing it." (<https://msdn.microsoft.com/en-us/library/cc750077.aspx>). Human error and human control of systems make this a challenge. Patch management is a formalized process involving the updating of software systems. The process is a tradeoff between vulnerabilities and functionality. The goal is to minimize the impact of the imperfect update and maximize the impact of the updated functionality. This can be accomplished through a change control process, as outlined below.

A good change control procedure has an identified owner, a path for stakeholder input, an audit trail for any changes, a clear announcement and review period, testing procedures, and a well-understood back-out plan. Change control will manage the process from start to finish.

Before applying any updates/patches stakeholders should read and review all relevant documentation. The stakeholder review process is key, as it lessens the risk of missing critical information in evaluating the update.

1. Preparation
 - a. Reading all associated documentation is the first step in assessing whether:
 - i. The update is relevant, and will resolve an existing issue.
 - ii. Its adoption won't cause other issues resulting in a compromise of the production system.
 - iii. There are dependencies relating to the update (i.e., certain features being enabled or disabled for the update to be effective).
 - iv. Potential issues will arise from the sequencing of the update, as specific instructions may state or recommend a sequence of events or updates to occur before the update/patch is applied.
2. Testing
 - a. Installing new updates and patches to a test environment allows for the potential harmful impact to be minimized before signing off on the update installation.
3. Plan to uninstall
 - a. When possible, have a plan in case patches must be uninstalled, if required.
4. Have a working backup and schedule production downtime
 - a. Server outages should be scheduled and a complete set of data backups made, in case a restore of the system is required.
5. Always have a back-out plan
 - a. A back-out plan will allow the system and enterprise to return to their original state, prior to the failed implementation. It is important that these procedures are clear, and that contingency management has tested them, because in the worst case a faulty implementation can make it necessary to activate contingency options.
 - b. Enterprises may need to exercise their back-out plan in the event of the update not having an uninstall process or the uninstall process failing. The back-out plan can be as simple as restoring from backup, or may involve many lengthy manual procedures.
6. Forewarn help desk and key user groups
 - a. Notify help desk staff and stakeholders prior to any updates. It is also a good idea to notify any user groups of proposed updates to assist in managing user expectations.
7. Don't get too far behind on updates
 - a. Schedule periodic upgrades as part of your operations maintenance and try not to get too far behind, otherwise critical updates may be problematic to install in a short amount of time.

Recommendations

The district should:

1. Hold regular meetings with QSS stakeholders and explain upcoming updates or patch releases.
2. Develop a formal update/patch management plan for all major systems.
3. Ensure that key individuals in finance have access to QSS listserv and phone support.
4. Consider providing an Aeries student information system update function(s) listing by job responsibilities to improve understanding of updates done to the system.

Help Desks and Ticketing Process

Operations (SIS, Financial System and Student Applications Support)

The technology services department has split help desk processes between the operations and support services groups. The operations groups handle Aeries, various student software and QSS financial systems support requests. The operations team has eight full-time staff members: one senior database engineer, four system analyst IIs, two system analyst Is and one supervisor. Users with student software, Aeries, and QSS questions and/or problems have direct access to the operations team either by calling the help desk phone number or by submitting a web-based help desk ticket. Aeries tickets are typically handled at the system analyst I level and escalated to system analyst II and/or the senior database engineer level as needed. Student software administration and QSS tickets are handled at the system analyst II level and are escalated to the senior database engineer level if advanced reporting or database integration services are necessary. The system analyst II positions are also responsible for cross department support coordination in the event a ticket requires advanced network and system intervention, such as Microsoft's Active Directory or Google's G-Suite accounts.

The operations team also handles administration, training and documentation for Aeries, QSS and several of the widely used student learning applications. Additionally, operations staff is responsible for all state reporting (CALPADS) activities and coordinating SIS (student information system) and QSS user group meetings.

Support Services (Hardware, Operating System And General System Support)

The support services team processes hardware, operating system and general support tickets. The support services group has 14 full time staff members: 10 PC support technicians (one of these positions is currently vacant), two system analyst/computer operators, one system analyst II, and one supervisor. Due to significant budget cuts starting in 2008, technical support for hardware, operating systems and general system problems was centralized and converted to a remote and/or phone-based model.

End users in need of assistance are expected to call the technology services support line, use the web-based work order ticketing system or visit the technology offices at the district office between

7 am and 5 pm. The support services staff is also responsible for system imaging and deployment, technology asset management and software installation and maintenance.

Ticketing Processes and Help Desk Software

The two technology services support teams use a widely used remote assistance software system called Bomgar. If an end user's machine is functional, Bomgar allows a technology services staff member to take control of the user's desktop to resolve problems and/or answer questions in an interactive, visible manner. All remote support sessions are either user authorized or user initiated, which reduces the chances of unauthorized access to an end user's devices. The technology services staff report that the Bomgar system version is kept up to date during advertised system maintenance windows, and end users found the remote assistance tool to be effective and easy to use.

End users interviewed did report minor frustration with the recently implemented help desk phone tree system. Many found it annoying and slightly confusing. However, when the FCMAT team dialed the help desk number, the phone tree options seemed organized and self-explanatory.

The technology services department uses Solar Winds Web Help Desk as its ticketing and project assignment system. The Web Help Desk system allows for the creation, routing, assignment and closure of all trouble tickets and work requests entered. It is established, modern and well-supported. The technology services department keeps it up to date and has invested significant effort in using the product to manage and account for much of the technology services work.

Over the last two years, the technology services department has attempted to implement the Information Technology Infrastructure Library (ITIL) standards into its help desk ticketing system. Implementation of ITIL requires collecting more accurate details for every ticket both by the end user who opens the work order and the support staff member assigned to the ticket. These details represent data points, which over time can be combined, reported upon and analyzed to improve processes, like ticket resolution time, trouble ticket trend identification and potential professional development opportunities. However, collecting this data has come at a cost to the help desk. During interviews, end users reported that opening Web Help Desk tickets was tedious, requiring more time than many felt necessary and appropriate. Similarly, many of the technology services support staff expressed frustration with the ITIL elements in the ticketing system, reporting that ticket closure now takes longer due to additional detail required to officially resolve a problem. When the FCMAT team asked about regular reviews of the Web Help Desk ITIL data, most of the technology services support staff indicated that no such reviews take place and they have seen no new insights or significant benefit to the functioning of the department.

Districts with efficient and successful help desks strike an efficient balance using phone/remote, walk-in and onsite support models. Typically, in these districts initial end user support requests are accepted and processed centrally and if necessary, dispatched to the appropriate site assigned technician. This allows for a faster resolution time, less disruption of classroom time and higher customer satisfaction levels. While there is no ideal site-to-technician standard, many districts choose to assign one FTE technician per comprehensive high school, .75 FTE technician for every middle school, and .5 FTE technician for every elementary school site. These assignments are most effective when they are grouped by geographic proximity, which reduces travel time.

Successful districts also review their ticketing and help desk communication systems regularly, often with input from end users, with the intent to streamline the experience so customers can quickly open tickets, check their resolution status and submit satisfaction feedback.

Recommendations

The district should:

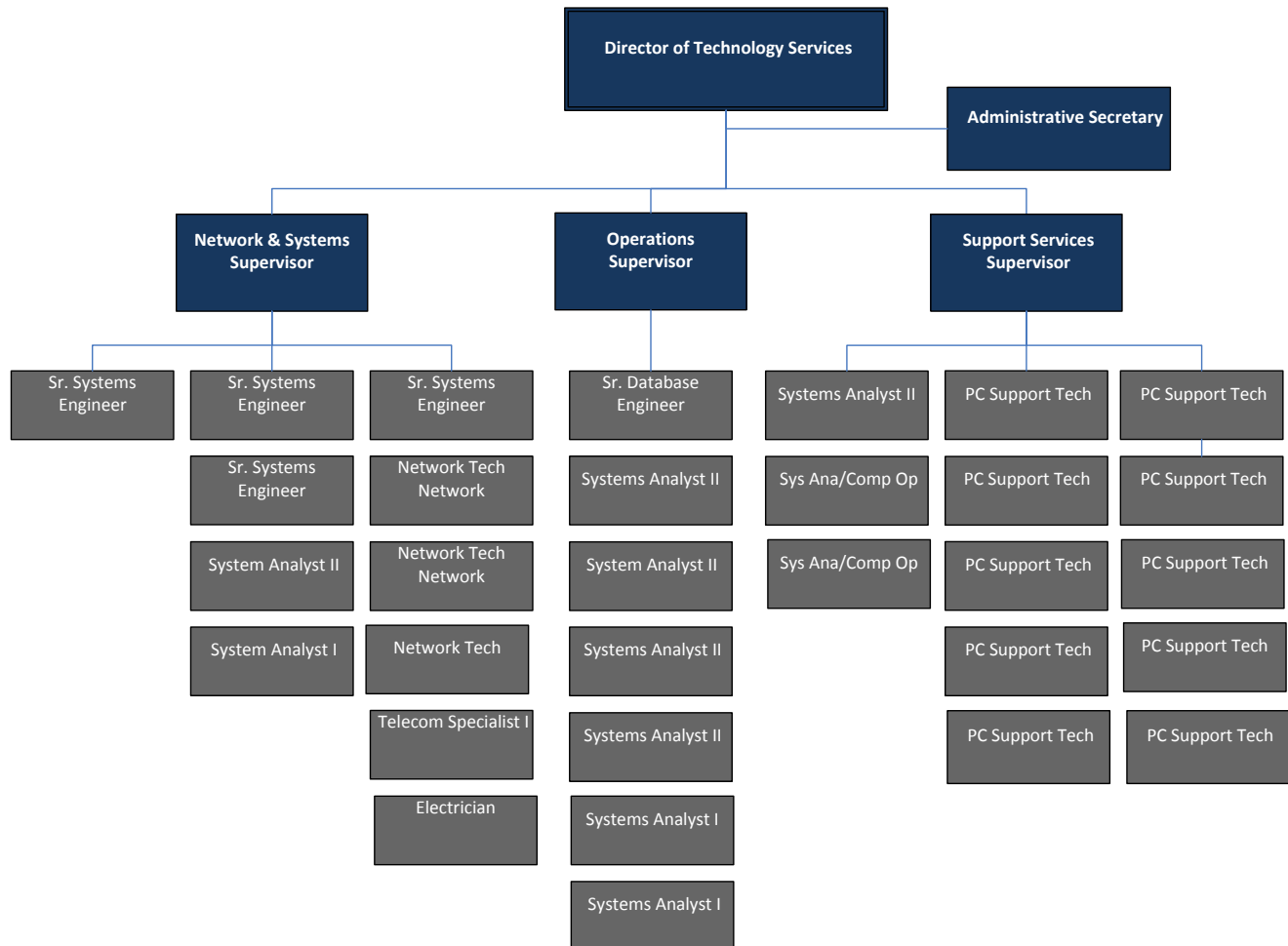
1. Review the Web Help Desk ticket creation and closing process with an emphasis on ease of end user ticket creation. Consider the extent to which each field is necessary and how it impacts the speed and accuracy of ticket creation and closure.
2. Review the help desk phone tree system, with the aim of developing an easy to reference, regularly updated phone tree guide.
3. Publish quarterly emails or a technology services newsletter to all district staff with up-to-date user guides on help desk ticket creation, phone tree options and walk-in technology support services. Consider including the previous quarter's help desk statistics (i.e., tickets opened, tickets, closed, average time to resolution and aggregate customer satisfaction levels).
4. Review effectiveness of ITIL implementation as it relates to the Web Help Desk ticketing system. If collection of the ITIL-related data continues, schedule quarterly reviews of the data with help desk staff and management with an emphasis on using the data to develop specific process improvements.

Technology Support Staffing and Organization

Technology support is provided by 36 FTE positions in the technology services department. All positions are full time and two positions were vacant at the time of FCMAT's fieldwork.

The director of technology services is the leader of the department and reports to the superintendent. Assisting in leadership and management of staff are the network and systems supervisor, operations supervisor, and support services supervisor.

The department is organized as depicted in the following organization chart.



All positions are 1.0 FTE

Technology Services Organizational Chart
Revised 020317

Leadership and Administrative Support

Director of Technology Services

The director of technology services leads the department. The incumbent at the time of the FCMAT visit has since retired. The network and systems supervisor was designated to serve as the interim director. The director of technology services position reports to the assistant superintendent/chief business officer.

This is a 222-day position with a salary range of \$105,019 to \$132,327.

The job description states primary functions of this position include planning, developing, and implementing computer applications that meet the operational and educational needs of the district and enabling the use of data-processing technology to maximum advantage. The director supervises supervisory and classified staff. Examples of the position's duties and responsibilities include: providing administrative and technical direction for all data-processing functions; identifying, developing, and monitoring cost-effective computer-development plans, software, and procedures; and evaluating administrative, managerial, and educational operating systems and needs. The position is also to direct and coordinate development of a districtwide integrated technology system to ensure the most efficient and effective use of hardware, software, and systems networking. The job description is undated.

The director indicated that he spent most his time in meetings, planning, implementing projects, and communicating through phone calls and emails.

The director and others mentioned that, because the director is not part of the superintendent's cabinet, initiatives that require time and support from the department are approved without input from the department. This decision-making impacts department resources, spreads the staff thin, and ultimately impacts the quality of services delivered by the department.

In addition, there is a technology advisory committee composed of approximately 15-18 members. The committee includes: at least two Lodi Unified School District Board of Education members; a technology staff representative; teachers; and assistant superintendents and other district administrators. Because of the diversity of its composition, the technology committee has the authority to make recommendations and decisions that are then forwarded directly to the board for approval.

Site staff commented they routinely copy the director on emails to ensure they have a record of the service they have requested. The technology services supervisors noted they routinely meet with the director to discuss department projects and plans.

The director's general description of his work appears to match the job description. In addition, the supervisors verified that the director regularly monitors the department's projects and plan. The impetus for department initiatives appears to come from a variety of sources including the superintendent's cabinet and the technology advisory committee. During FCMAT's fieldwork, it appeared the work was not always well coordinated, and some initiatives were implemented without proper consideration for the technical work involved and coordination with other technology initiatives. Department employees commented they would like their ideas and concerns taken seriously.

A 2013 article in Educational Leadership titled, "Power Up! / The Changing Role of the Technology Director," discusses the job description of chief technology officer. The article states the core competencies required of a technology leader are changing, as shown in this table:

Old Core Competencies	New Core Competencies
Configuring networks and local servers	Mediating contracts for cloud-based and contracted services
Supervising technicians	Evaluating outsourced work and setting up effective help-desk processes
Writing technology plans	Working interdepartmentally with curriculum, staff development, public relations, assessment, and strategic planning leaders
Providing technology devices to staff and students	Providing access to school network resources accessible with personal devices
Writing policies that dictate behaviors and ban activities	Writing guidelines and curriculums that encourage safe and responsible use
Preserving the status quo	Implementing new technology applications and best practices

Many medium to large districts in California have moved to having chief technology officers as the executive leadership position overseeing technology. To ensure that technology is properly used throughout the organization, a majority of these positions report directly to the superintendent and serve on the superintendent's cabinet.

Many districts of Lodi's size have found it most effective to have their chief technology officer (CTO) included in the superintendent's cabinet. This allows the CTO to participate in decision-making regarding initiatives that directly affect the district's technology services.

Recommendations

The district should:

1. Eliminate the director of technology services position.
2. Create a new position of chief technology officer. Include higher standards for qualifications particularly in the areas of education, training, managerial experience, knowledge and abilities.
3. Assign the CTO to report directly to the superintendent and be a part of the superintendent's cabinet.
4. Clarify the alignment between the CTO's responsibilities, the department's work, and the input/direction provided by the superintendent's cabinet and the technology committee.

Administrative Secretary I

There is one administrative secretary I in the technology services department. The position reports directly to the director.

The job description for administrative secretary I states the position's basic function is to perform a variety of primary secretarial support functions of a difficult and complex nature in a departmental office of a districtwide function. This position is the entry level of the administrative secretary classifications. The job description lists the distinguishing characteristics as: being assigned to district office departments providing districtwide services; reporting to a director or coordinator; and lead responsibilities for a small number of student assistants or classified employees.

Representative duties listed in the job description include: serving as the primary secretary to a director or coordinator; transcribing dictation and typing a variety of material; assisting in the

coordination of program communications; posting information on records and inputting to various computer systems. The job description was last updated in November 1999.

The task list submitted by the incumbent listed the following as daily tasks: managing and reconciling the department budget; receiving and tagging product; phone calls; support tickets; and various clerical assignments. The incumbent stated the job description outlines her basic responsibilities. She stated she does not deal with complaints or issues; the director is responsible for dealing with any issues.

Although the incumbent stated the job description aligns with her responsibilities, it seems unlikely that she is responsible for transcribing dictation and typing material. In addition, some of her assigned responsibilities such as receiving and tagging product and resolving support tickets, are not reflected in the job description.

Recommendation

The district should:

1. Review and revise the job description as necessary.

Network and Systems

Network and Systems Supervisor

There is one network and systems supervisor in the technology services department. The position reports directly to the department's director. The job description for network and systems supervisor states the position's function is to participate in the implementation of the district's strategic plan for technology, including the implementation, monitoring, security management and maintenance of local area networks (LANs), wide area networks (WANs), telecommunication systems, network services, and client server or network-based systems. The supervisor has evaluative responsibilities for assigned personnel. The job description was updated in May 2004.

Representative duties include: implementing the districtwide network; supervising documentation regarding the configuration of district LAN/WAN; coordinating the installation of new systems and hardware to accomplish the needs of departments and staff; training, supervising and evaluating the performance of assigned personnel; serving as the liaison between the district and telephone service and equipment providers; preparing annual budget requests for telecommunications and projecting cost estimates for the needs of network-based systems.

Position requirements include knowledge of: voice and data circuits and services; principles and operations of assigned network systems; Windows network operating systems; Citrix MetaFrame and/or Windows Terminal Services environment. The supervisor should be able to: diagnose digital and analog network difficulties; train, supervise and evaluate the performance of assigned staff; and manage Windows network operating systems and Citrix environment.

Eleven positions report to the network and systems supervisor. The task list submitted by the incumbent indicates that monthly tasks include: day-to-day operations of wired and wireless networks, day-to-day operations of data center, day-to-day operations of phones, cell phones and call center, day-to-day operations of internet, web filtering, firewall, DNS/DHCP, day-to-day operations of email, Citrix, Active Directory, Google suite, network security, monitoring of

network systems and services, new project requests, eDiscovery cyber security, develop department ITIL procedures, and department meetings.

The supervisor meets weekly one-on-one with each staff member she supervises. This structure allows her to monitor the employee's work and provides an opportunity for employees to share ideas and concerns in a confidential conversation. The supervisor holds an all-staff meeting at least every two weeks. The supervisor's employees reported the supervisor assigns projects based on employees' skills. The supervisor meets with the technology services director weekly on projects and scheduling of department resources.

Technology services staff reported there is no clear plan for how the network and systems group's work is coordinated with the work of the other groups and that projects usually "walk through the door" with an "I needed this yesterday" approach. The result is that projects are not always implemented in the best and/or most efficient manner.

It was also reported during interviews that many of the job descriptions that report to this position are far out of alignment with the current duties assigned and that this has created problems when trying to fill these technical positions. Without accurate titles and job descriptions, potential employees may not know whether they are qualified to apply for a posted job. Inaccurate job descriptions also make it more difficult to hold employees accountable for their work.

While most of the job description for this position is in line with the job duties, several sections are out of date concerning modems, multiplexers, channel banks and mainframe systems.

As students' use of technology in schools increases and technology supports more educational systems, many school districts have begun to re-evaluate 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.

Creating different levels of support positions allows a district to assign tasks based on the complexity of the work performed and provides 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.

Recommendations

The district should:

1. Develop a clear plan for planning and implementing technology projects.
2. Review, update, and revise the network and systems supervisor job description as necessary.

Senior Systems Engineer

There are four senior systems engineers in the technology services department and all are assigned to the network and systems group.

The job description states the basic function of the position is to perform professional and technical duties to support the operations and integrity of an enterprise computing environment.

Incumbents may serve as project leaders by providing training, work direction and guidance to staff in support of performance, data and security management, failure analysis, data recovery, and user support. The job description was developed in July 2007.

The district's job descriptions usually include the statement, "Individual positions may not perform all of the duties listed nor do these examples include all responsibilities of positions in this class." Representative duties include: providing strategic guidance on best practices in the deployment, configuration and maintenance of an enterprise-level Active Directory and Exchange environment; performing gathering and configuration management for the installation and deployment of storage area networks; planning and designing hardware and software services that support the network operating systems; developing logon or other related scripts to meet user needs and streamline processes; and training and providing work direction to systems engineers.

Requirements include knowledge of: client/server-based computing; network standards, topologies, and configuration specifications; performance tuning and configuration of network OS; and technical aspects of field of specialty. The minimum qualifications include any combination equivalent to a bachelor's degree in computer science and two years as a systems engineer I, such as Microsoft Certified Systems Engineer certification and four years as a systems engineer.

On the FCMAT task lists, three of the incumbents listed assignments that align with the job description. These assignments included updating, maintaining, configuring and troubleshooting systems such as Aeries SIS, eSchoolPlus, Google Admin, Citrix/Netscaler, Active Directory infrastructure, Linux servers, PureStorage SAN, VMWare Hypervisor, XenServer Hypervisor, and Powershell Scripts.

These three senior systems engineers manage systems and environments by ensuring the servers are available, maintaining the infrastructure, scripting, and virtualizations. The employees provide some informal training to others in the department but noted there are times when they are the only ones who can resolve the issues with their assignments.

The fourth senior systems engineer provides direction and recommendations to others, such as the network technicians and electrician. He assists with prioritizing projects, maintenance, and tasks. He also serves as the liaison between the department and service providers such as AT&T and Comcast. The incumbent coordinates E-Rate projects, cooling and critical power systems, access control system installations, core and edge switches, and network firewall security. In addition, he focuses on the network and on guiding the work of the network technicians.

The incumbent accepted the title of senior systems engineer after an evaluation of a reclassification request he submitted.

Three of the four senior systems engineers are doing work that aligns with the job description. The fourth incumbent is doing work that would be more appropriately assigned to a network engineer.

Proper alignment of job description to work required would allow network assignments to be distributed appropriately and for the skill set of the fourth incumbent to be used to its fullest extent.

Recommendations

The district should:

1. Carefully review the job description of senior systems engineer to eliminate programs, systems, and environments no longer in use.
2. Review the department's need for a network engineer and create a job description that accurately describes the work required.

Systems Analyst I and II

One systems analyst I and one systems analyst II are assigned to the network and systems group. The systems analyst II position was vacant at the time of FCMAT's fieldwork.

The systems analyst I job description defines its basic functions as analyzing, installing, maintaining and troubleshooting centralized computer systems, programs, and software; meeting with users to implement new and change existing computer systems; maintaining documentation, forms, databases and reports; and providing training in the proper operation of computer systems and applications. Representative duties include: installing hardware and software systems, communicating and working directly with district staff and individual users to determine conversion needs, coordinating activities, exchanging information, and resolving issues and concerns.

The systems analyst II job description defines the basic functions as those described in the systems analyst I and adds the following: meet with management to implement new or change existing systems and to create and maintain forms, databases and reports; design documentation; lead and manage various projects; and take primary responsibility for new districtwide system installation. Representative duties include: leading, managing, and taking primary responsibility for various projects and working with outside organizations and vendors; analyzing and testing new programs for system compatibility; designing, creating, and maintaining electronic forms, databases, and reports.

The systems analyst I included the following job responsibilities on the FCMAT requested task list: Active Directory user account management, security, permissions, Google account management, print server management, systems support level 3 and 5 - troubleshoot, resolve or facilitate issues that escalate beyond support services, assist with data recovery and restore.

During FCMAT's fieldwork the incumbent stated the job description accurately describes the work he does. He noted that he spends time daily on user accounts, managing student passwords, and handling the issues that the support desk employees cannot resolve.

Because the systems analyst II position is vacant, it is not possible to evaluate if the job description accurately describes the work assigned to this position.

Recommendation

The district should:

1. Update the systems analyst I job description to include the work required to manage individual user accounts and student passwords.

Network Technician

There are three network technicians in the network and systems group.

The job description for network technician states the basic function of the position is to perform a variety of technical and resource services in the installation, operation, repair, maintenance and diagnosis of computer networks and to provide technical user support assistance. The job description was last revised in 1999.

The representative duties include: installing, configuring, and maintaining a variety of complex, multi-vendor hardware and software in a network environment; troubleshooting network problems involving routing, communications, network operating systems and other applications; and providing technical information to department staff, other departments, other sites, and end users.

One of the incumbents stated the job description does not accurately describe the work he does. This is because he ensures that updates, applicable to his assigned applications, are installed in both Apple and PC environments. He described learning new skills through on-the-job training and occasionally through professional development provided by the district. The incumbent's task list includes activities such as: user account maintenance; network printing; server software updates and configuration; configuring and applying monitors; and resolving daily tickets.

This incumbent's activities are more appropriately aligned with the system analyst I job description.

The other two network technicians described activities that aligned to the job description. They stated they had the training necessary to do their assigned work. The task lists provided by these two network technicians listed support for: network monitoring; access control (card readers); security camera system (Milestone NVRs); DHCP Server (Proteus); Voice Over Internet Protocol and Network Operations Center; testing, evaluating, implementing, and maintaining manufacturer developed software packages; installing and conducting diagnostic testing; managing a large wide area network; and preparing written technical documentation, training materials, standards, and reports.

These two network technicians whose activities are aligned with the job description are properly placed in this job description. However, the job description has not been updated since 1999 and does not accurately reflect current technology needs.

Recommendations

The district should:

1. Verify that one incumbent is qualified for the system analyst I position and performs needed activities. Once verified, reclassify the incumbent to the appropriate position.
2. Update and revise the job description for network technician.

Telecommunications Specialist I

There is one telecommunications specialist I assigned to the network systems and support group. This job reports directly to the network and systems supervisor.

The job description states the basic function of the telecommunications specialist I is to perform a variety of technical, support and training services for the operation, diagnosis, and maintenance of the district telephone system. The job description was developed in July 2002.

Representative duties include: managing the district's telephone system using Centrex Management System; managing the district's cellular phone service; troubleshooting telephone problems, coordinating with Pacific Bell for resolution; diagnosing school site telephone problems and devising hardware and software strategies; and coordinating with the accounting department to ensure proper billing of telephone services.

The position requires knowledge of microcomputer hardware and software applications, operations and OS; current methods, practices, and procedures involving the use of computer technology and troubleshooting skills; and technical aspects of the field of specialty, which is telephone and communication devices. The job description states the necessary abilities are to identify and resolve problems related to centralized monitoring and wide area telephone systems; install and operate various computer hardware and software applications; and diagnose telephone hardware and software problems. Minimum qualifications include two years of college level coursework in computer science and two years' experience in telecommunication support.

The incumbent listed the following as her major assignments on the FCMAT task list: access control; security cameras; telephones, cell phones, and voicemail. During the fieldwork, she acknowledged that her technical skills are more limited than most others in the department.

She described her assignment as supporting the district's communication systems and has developed documents to assist staff with troubleshooting issues. This is important because if AT&T is called and the issue is user error, the district is charged for the problem. The incumbent works on phones in the district office and usually schedules the electrician to resolve phone issues at the school sites.

The incumbent also noted the district keeps recordings of calls and security footage to protect employees and the district and ensure that employees are not falsely accused of being discourteous while on the phone. These records are kept for seven days.

The job description is narrowly focused on phones and cell phones. It also states that the telecommunication specialist I is to dispatch network technicians to add, move, and change telephone service. The incumbent explained that was because the previous incumbent refused to work on phone jacks and power related issues. The job description does not include significant areas of the incumbent's current responsibilities, which include: hands-on work on phones and power; security cameras; access control; and voicemail.

This job description does not accurately reflect either the work required of the position or the minimum qualifications required to be successful in the position. Without an accurate job description, it is difficult to recruit for the position and hold incumbents accountable for the full scope of the job.

Recommendation

The district should:

1. Update the telecommunications specialist I job description to accurately reflect the work and technical skill required of the job.

Electrician

One electrician is assigned to the network and systems group. The electrician is on temporary assignment from the maintenance department and has been assigned to technology services off and on for several years. He has support from a maintenance I worker who requested an Interim Promotional Opportunity and was assigned to the electrician for training. An electrician's position in the technology services department has been posted during the last school year but no suitable applicants have yet been found.

The job description states the basic function of an electrician is to perform journey-level electrical work involving the repair, alteration, construction, installation, and maintenance of a variety of electrical systems and equipment. The job description was approved by the board of education in November 1999. Industry standard defines journey-level as a level above apprentice or beginner; one who can work independently, without direct supervision, installing wiring outlets and fixtures.

Representative duties include: performing journey-level work in the installation, repair, alteration, or construction of a variety of interior and exterior electrical work in accordance with specifications and codes; design, install, maintain, and repair a variety of systems, including circuitry, circuit breakers, relays, switches, and sensors; inspect and verify work needed to be performed; plan, layout, install, repair and replace lighting fixtures; and install, repair, and maintain high and low voltage electrical systems and equipment. These duties seem appropriate for a journey-level electrician job description.

The electrician listed the following as monthly or daily tasks on his FCMAT task list: overseeing projects, inspecting contractors' work, installing power, and installing or repairing data wire, data jacks, Wi-Fi jacks, phone wire, phone data, and fiber optic cable. He also installs televisions and Promethean boards.

During the FCMAT fieldwork, the incumbent confirmed that he is responsible for the telephones in buildings other than the district office. He is concerned about his job description and believes it does not accurately describe his current responsibilities.

The job description is appropriate for a journey-level electrician. However, it does not consider specialized skills and knowledge required to support a variety of electronic devices, equipment and systems such as conduit, cabling, wiring, intrusion and fire alarm systems, communication systems, and intercom systems. It is possible that, if the district had a job description that outlined these duties and required appropriate skills and knowledge, the vacant position in the technology services department could be filled.

Recommendation

The district should:

1. Consider developing a job description that accurately reflects the department's needs and includes specialized skills and knowledge required to support a variety of electronic devices, equipment and systems as listed above.

Operations

Operations Supervisor

There is one operations supervisor in the technology services department. The position reports directly to the director. The incumbent meets with the director weekly to coordinate scheduling and department resources. Seven positions report to the operations supervisor.

The job description for operations supervisor states the position is to coordinate and lead the implementation of an assigned comprehensive system including software and hardware operations; assure proper operation of assigned systems; and train, supervise and evaluate the performance of assigned personnel. The job description includes a section titled “Desirable Qualifications,” which lists the desired knowledge, abilities, education, experience and special requirements/certificates. The selection procedure is also listed. The job description does not list representative duties.

The task list submitted by the incumbent indicates that monthly tasks include: lead and manage projects, attend project meetings, host finance user group meeting, attend process improvement team meetings, backup support to analysts I, oversee CALPADS, CBEDS, CRDA, and host SIS meetings. The task list did not appear to constitute a full-time job. During the FCMAT fieldwork, the incumbent confirmed the work on her task list and noted she also writes SQL scripts for import and export. As was noted elsewhere, this group routinely receives projects unexpectedly and with an expectation they will be done immediately. While the group provides centralized support, there is recognition that a hybrid model, with more on-site support, would provide better service to school sites.

The job description appears to be primarily a job announcement rather than a job description. Because representative duties are not listed, a comparison of the incumbent’s current responsibilities would be incomplete. In addition, although there is a section titled, “Special Requirements/Certificates,” there are no job specific requirements or certificates listed. There is also a lack of specificity regarding the necessary knowledge and abilities. No physical requirements are listed, which could create issues regarding reasonable accommodations for employees.

Recommendations

The district should:

1. Create an accurate and legally defensible job description for the operations supervisor.
2. Retitle the position to align to the job responsibilities.

Senior Database Engineer

There are three senior database engineers in the district: one in the technology services department, one in the assessment, research, and evaluation (ARE) department, and one in the payroll department. The technology services position reports to the operations supervisor. The other two senior database engineers report to their respective department supervisors. It is not industry standard for senior database engineers to work outside of a technology support department. However, after interviews, the FCMAT team agrees with the placement of these individuals in their respective departments for the close support of critical and complex department functions.

To remove these individuals from the day-to-day operations of their departments could impair the departments' functions.

The job description for senior database engineer states the basic function of the position is to: design and develop database and support systems including access methods, device allocations, organization, security, documentation, guidelines and standards. Representative duties include: lead and manage various projects related to central system installations and other system-related activities; recognize and coordinate the resolution of synchronization issues between databases, operating systems, applications and clients; advise and participate in resolving design and performance issues associated with distributed work in a multiple database environment; perform database capacity management and resource optimization activities; recommend and implement security permissions, privileges, standards, policies and guidelines; create database access systems including tables, indexes, views, stored procedures and triggers; and research and correct database integrity problems of considerable difficulty.

The task lists submitted by the incumbents are vastly different due to their different areas of support. The senior database engineer assigned to the ARE department supports student services such as testing PreID, LCAP reports, ELA and Title 1 reports. He gathers data and creates reports based on criteria provided to him by the instructional leaders. He explained that he works with department leaders to define the data they need, develops reports that present the data in useful formats, and assists with analyzing report data. The ARE incumbent has strong analytical and report writing skills but does not have the technical skills required for this position.

The senior database engineer assigned to the payroll department supports the departmental needs with a very different and unique set of complex functions and operations. His focus is on developing databases and reports for the payroll department.

The senior database engineer working in the technical services department handles many of the back-end SQL database functions and PerfectForms (a highly utilized online forms system) support, and many of the data export functions for the district.

Although each person's work is specific to his department, the incumbents stated the job description does accurately describe the work they do; however, the incumbent assigned to the ARE department has a different skill set from the other two incumbents.

As stated above, while this arrangement is unusual, it works for the district. Best practice would suggest including the two senior database engineers who are outside the technology services department in the technology services department's weekly meetings. This would provide better insight into the work required in each department and more opportunities to collaborate and learn from each other.

Recommendations

The district should:

1. Update and revise the senior database engineer job description to include specialized area subsets for the technology and payroll departments.
2. Develop a new job description that accurately reflects the work and necessary skills of the senior database engineer assigned to the ARE department.
3. Consider including the senior database engineers assigned to other departments in the technology services department meetings.

Systems Analyst I

Two systems analysts I are assigned to the operations group. They report directly to the operations supervisor and receive assignments from the systems analysts II assigned to the operations group.

The systems analyst I job description defines its basic function as analyzing, installing, maintaining and troubleshooting centralized computer systems, programs, and software. Representative duties include: installing hardware and software systems, communicating and working directly with district staff and individual users to determine conversion needs, coordinating activities, exchanging information, and resolving issues and concerns.

The task lists for the two incumbents include the following as daily or monthly tasks: telephone support; web help desk tickets; CALPADS extracts and error correction in Aeries and CALPADS; updating, maintaining and assisting with websites; report card printing; and projects as assigned by the systems analysts II.

During the FCMAT fieldwork, the incumbents explained they do similar tasks. Their supervisors and others in the department assign tasks in addition to the work they do assisting site staff with issues. The incumbents stated there is a department focus on cross-training and assignments are made accordingly. They noted that correcting CALPADS errors takes a significant portion of their time.

The job description accurately reflects the work done by these two systems analysts I.

Systems Analyst II

Four systems analysts II are assigned to the operations group. They report directly to the operations supervisor.

The systems analyst II job description defines the basic functions as those described in the systems analyst I job description and adds the following: meet with management to implement new or change existing systems and to create and maintain forms, databases and reports; design documentation; lead and manage various projects; and take primary responsibility for new districtwide system installation. Representative duties include: leading, managing, and taking primary responsibility for various projects and working with outside organizations and vendors; analyzing and testing new programs for system compatibility; designing, creating, and maintaining electronic forms, databases, and reports. The job description was developed in November 2002.

The task lists submitted by the incumbents included the following daily or monthly assignments: work orders; software setup/testing; processing warrants; QSS support, maintenance, and security; Blackboard Connect maintenance and support; delegating assignments to systems analysts I; working with vendors to resolve issues with student applications; creating complex queries and reports; assisting with mandated reporting such as CALPADS; providing Aeries training; documentation; and miscellaneous projects and requests.

During FCMAT's fieldwork, the incumbents verified the work outlined on their task lists. The incumbents were either promoted or reclassified into their positions. While they each have their specific responsibilities, they also support each other as needed.

The job description accurately describes the work of these four incumbents.

Support Services

Instructional Technology Services Supervisor

There is one instructional technology services supervisor who is responsible for supervising the support services group and reports to the director of technology services. At the time of FCMAT's fieldwork there were 13 positions in the group consisting of one systems analyst II, two systems analyst/computer operators, and 10 personal computer support technicians reporting to the instructional technology services supervisor. The district refers to this position as support services supervisor although the official title of the position according to human resources documents is instructional technology services supervisor.

The job description for instructional technology services supervisor states its basic function is, under the direction of the curriculum coordinator of instructional technology, to supervise the operation of district classroom technological applications, instructional technology support desk and personal computer support technicians. The supervisor is also to supervise the day-to-day operation of the district computer lab and manage the creation and implementation of training courses for end users on district computer systems.

Representative duties include: coordinate activities of the district computer lab; coordinate activities of instructional technology support service; maintain central systems procedural documentation; maintain configuration information on all equipment related to school sites; establish and monitor the support desk; supervise the personal computer support technicians and systems administrators; and implement programs to train teachers to use technology in the classroom. Required knowledge includes: functions of support desk operation; computer systems training techniques; and current technology pertaining to classroom applications. Education and experience required is any combination equivalent to a bachelor's degree in computer science or related field and three years' experience in managing the installation of computer system hardware and software, creation and maintenance of a highly customer-oriented support desk, and setting up and enforcing data-integrity standards for central computer systems. The job description was developed in October 2001.

The incumbent included the following on the FCMAT task list as daily or monthly responsibilities: staff management; overseeing day-to-day operations; customer contact; purchasing; and procedure documentation.

FCMAT interviewed several technology coaches and site technology lead teachers. The technology coaches are teachers assigned to the professional development group of the curriculum and development department. The site technology lead teachers receive stipends for the technology support they provide at their school sites. There are approximately 60 site technology lead teachers and six technology coaches. Neither group of teachers reports to the instructional technology services supervisor.

The job description for instructional technology services supervisor does not accurately describe the incumbent's current work and responsibilities. The title and some of the responsibilities indicate a responsibility for instructional technology; however, the current focus is on providing timely help to end users and providing research and support for technology purchases. This group is the district's primary point of contact for technology help desk support and is understaffed given the number of devices in the district. It seems appropriate that the supervisor and her staff have narrowed their focus to providing technical, not instructional support, to district employees.

California Education Code 44065 requires that those who supervise the work of instructors hold a valid teaching or service credential. Therefore, it is appropriate for the technology coaches and site technology lead teachers to be supervised by staff who hold teaching and/or administrative service credentials.

Recommendations

The district should:

1. Update the instructional technology services supervisor title and job description to accurately reflect the work done by the incumbent.
2. Ensure that the revised job description for the instructional technology services supervisor position states that the position reports to the director of technology instead of the curriculum coordinator.

Systems Analyst II

One systems analyst II position is assigned to the support services group.

The systems analyst II job description defines the basic functions as those described in the systems analyst I job description and adds the following: meet with management to implement new or change existing systems and to create and maintain forms, databases and reports; design documentation; lead and manage various projects; and take primary responsibility for new districtwide system installation. Representative duties include: leading, managing, and taking primary responsibility for various projects and working with outside organizations and vendors; analyzing and testing new programs for system compatibility; designing, creating, and maintaining electronic forms, databases, and reports.

The task list submitted by the incumbent indicates that daily tasks include: data scrubbing; division management - oversee operations; hands-on support; and phone support. Monthly and quarterly tasks include: asset management - decommissioning, distribution, maintenance; division management - process improvement, report design; software management - deployment, maintenance, research; support - customer contact, research, troubleshooting; training - end users, technology staff; and vendor - meetings, phone calls.

During FCMAT fieldwork, the incumbent's responsibilities were described as asset tagging and tracking systems, particularly those that have not been used for at least a week and up to a year. The department is trying to clean up inventory so there will be more accurate information regarding systems and servers. Staff stated that an accurate inventory would allow the department to do a better job of tracking repairs and analyzing tickets for trends. The incumbent is responsible for reviewing the work of the two systems analysts/computer operators.

The job description accurately describes the work of the incumbent.

Systems Analyst/Computer Operator

Two systems analyst/computer operators are assigned to the support services group.

The job description for the systems analyst/computer operator position states the basic function is to analyze, install, maintain, and troubleshoot centralized computer systems, programs, and

software; meet with users to implement new or to change existing systems and train users; lead and manage various projects.

Representative duties include: analyze, maintain, and troubleshoot centralized computer systems, programs, and software; install hardware and software systems; troubleshoot and resolve main-frame problems; conduct diagnostic testing on computers as needed; lead and manage various projects related to central system installation; and perform system back-ups and preventive maintenance on hardware and software systems.

The required education and experience include a high school diploma or equivalent supplemented by a bachelor's degree in computer science, management information systems or related field and increasingly responsible experience in mainframe computer installations, operations, troubleshooting and repair work.

The incumbents described their primary responsibilities as providing secondary technical support and system imaging. The incumbents are also responsible for inventory and asset control. They were unsure as to which responsibilities were defined by the computer operator component of their job description. At times, they are responsible for testing hardware/software and pushing out applications districtwide.

The systems analysts/computer operators provide primary and secondary technician support. The computer operator component of the title appears to be obsolete.

Recommendation

The district should:

1. Update the systems analyst/computer operator title and job description to accurately reflect the incumbents' work.

Personal Computer Support Technician

Ten personal computer support technicians are assigned to the support services group.

The job description states the basic functions of a personal computer support technician are to: install, maintain and troubleshoot computer systems; perform technical duties in the installation of district-approved computer software and hardware; provide technical assistance to end users; and conduct or assist in in-service education and introductory training on software operations. Representative duties include: performing technical duties; providing technical assistance; conducting diagnostic testing on malfunctioning computers and computer disks; administering the internet services for the district; and assisting with upgrading and installing memory and hard drives.

The knowledge required includes: operation of various personal computer hardware and software systems; hardware and software installation procedures; and appropriate diagnostic procedures and tools. The required education and experience is any combination equivalent to a high school diploma supplemented by college-level coursework in computer science and increasingly responsible experience in personal computer operations, installation or repair.

The task lists provided by the incumbents include the following as daily or monthly responsibilities: technology support for projectors, Chromebooks, and Promethean panels; remote, walk-in, and phone support for user devices and network issues; processing assets; installing printers;

assisting with resetting passwords of student and staff user accounts; and hardware and software configuration.

The incumbents verified that their task lists accurately described the work they do. They emphasized customer service and stated they are encouraged to participate in professional development and stay current in technology.

The general concepts and focus of the job description accurately reflect the work of the incumbents.

Additional Site Support Staffing Needed

During interviews with representatives of several departments, including technology services and school site employees, the FCMAT team observed significant frustration from users with the move to a centralized, remote help desk model. For problems requiring a site visit, school site staff reported long wait times and a general lack of communication and coordination due to the department's reliance on only one personal computer support technician to perform on-site support for all sites while the remainder of the technicians generally provide remote support. The same technician is responsible for new system delivery and setup, which leaves limited time for on-site work order resolution.

Users at school sites expressed serious concerns with the reliance on remote assistance, reporting that multiple, sometimes long phone calls are often necessary to get problems resolved. Staff at every school site visited reported a loss of teacher preparation period time due to spending time supporting technology issues and the misallocation of technology lead teacher assistance time. In some cases, due to scheduling and school site logistics, principals and other administration staff must act as intermediaries, working with the personal computer support technician on teachers' behalf to resolve problems over the phone.

At the time of FCMAT's fieldwork there were 500 open service tickets waiting to be resolved.

School site administrators and some department heads expressed a strong desire to return to site-based technical support, or a hybrid model in which first attempts at resolution would be handled by phone and a site or regional technician would be dispatched if problem resolution required hands-on efforts.

Because different amounts and types of technology are used at each grade level, the requirement for support can vary between schools. For example, high schools may require more staff time and a higher level of technical support than elementary schools. Other variables at each site may include the number of students and staff, the number and age of electronic devices being supported, distances between sites, and the quality of technology professional development for certificated staff.

In many cases technology support equal to 0.5 FTE 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. A 0.5 FTE technology support specialist I could serve the district's community day school and continuation schools.

The following table outlines the FTE personal computer support technicians needed by type of school.

School quantity and type	FTE needed per school	Subtotal FTE needed
34 elementary schools	.50	17.0
5 middle schools	.75	3.75
1 community day school 2 continuation schools	.50 total	.5
6 high schools	1.0	6.0
Total positions		

The district would need a total of 27.25 personal computer support technicians to provide staffing as shown above.

The district has 10 personal computer support technicians and would likely need 17.25 (27.25-10) new positions. This should be done in phases with the addition of several positions followed by a period of analysis and continued evaluation of the need for additional support at the school sites.

One way to assign the personal computer support technician staff is to have them report to the district office first each morning for a brief meeting with their supervisor to review the status of the network and support requests. Districts with effective technology support often view these 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.

Recommendation

The district should:

1. Evaluate the need to add up to 17.5 personal computer support technician positions. Move to a hybrid remote and site-based support model with fewer remote support staff and more site-assigned technician positions. Organize and make use of these staff as a pool from which assignments can be made as needed.

Appendices

Appendix A

Study Agreement



**FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
STUDY AGREEMENT
October 5, 2016**

The Fiscal Crisis and Management Assistance Team (FCMAT), hereinafter referred to as the team, and the Lodi 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 local education agencies (LEAs). 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. Analyze the status of the following and make recommendations for improvement, if any:
 - a. Leadership
 - b. Project management
 - c. Software and hardware standards
 - d. Help desk system and ticketing process
 - e. Device installation and setup
 - f. Professional development of technology support staff
2. Review the processes or planning used to ensure that hardware and software are up to date and make recommendations for improvement, if any.

3. Review the maintenance of systems such as servers, computing devices, and major systems such as the student information system and integrated financial system to include best practices with regard to updates, patch management, and maintenance scheduling, and make recommendations for improvement, if any.
4. Conduct an organizational and staffing review of the district technology department and plans, including school site technology support staff, and make recommendations for staffing improvements or reductions, if any.

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 Meeting - 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 memorializing the topics discussed in the exit meeting.
5. Draft Report - 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 by the district within six to 12 months after completion of the study, FCMAT will return to the district at no cost 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. FCMAT will work with the district on a mutually convenient time to return for follow-up support that is no sooner than eight months and no later than 18 months after completion of the study.

3. **PROJECT PERSONNEL**

The study team may include:

- | | | |
|-----------------|-------------------|-------------------------|
| <i>A. To be</i> | <i>determined</i> | <i>FCMAT Staff</i> |
| <i>B. To be</i> | <i>determined</i> | <i>FCMAT Consultant</i> |
| <i>C. To be</i> | <i>determined</i> | <i>FCMAT Consultant</i> |
| <i>D. To be</i> | <i>determined</i> | <i>FCMAT Consultant</i> |

4. **PROJECT COSTS**

The cost for studies requested pursuant to Education Code (EC) 42127.8(d)(1) shall be as follows:

- A. \$500 per day for each staff member while on site, conducting fieldwork at other locations, presenting reports and participating in meetings. The cost of independent FCMAT consultants will be billed at their actual daily rate for all work performed.
- 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 2A, the total not-to-exceed cost of the study will be \$32,900.

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

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

5. RESPONSIBILITIES OF THE DISTRICT

- A. The district will provide office and conference room space during on-site reviews.
- B. The district will provide the following if requested:
 - 1. Policies, regulations and prior reports that address the study scope.
 - 2. Current or proposed organizational charts.
 - 3. Current and two prior years' audit reports.
 - 4. Any documents requested on a supplemental list. Documents requested on the supplemental list should be provided to FCMAT only in electronic format; if only hard copies are available, they should be scanned by the district and sent to FCMAT in electronic format.
 - 5. Documents should be provided in advance of field work; any delay in the receipt of the requested documents may affect the start date and/or completion 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 and will be established upon the receipt of a signed study agreement:

Orientation:	to be determined
Staff Interviews:	to be determined
Exit Meeting:	to be determined
Draft 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 which, in the team's judgment, it must obtain information. Once the team has completed its fieldwork, 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 fieldwork, 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 fieldwork 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 of 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 Lodi Unified School District named as additional insured, indicating applicable insurance coverages upon request.

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.

11. **CONTACT PERSON**

Name: Dale Munsch, Director Technology Services
Telephone: (209) 331-7211 extension 7211
Fax: (209) 331-7039
E-mail: dmunsch@lodiUSD.net



Dr. Cathy Nichols-Washer, Superintendent Date
Lodi Unified School District



Michael H. Fine, October 5, 2016
Chief Administrative Officer Date
Fiscal Crisis and Management Assistance Team