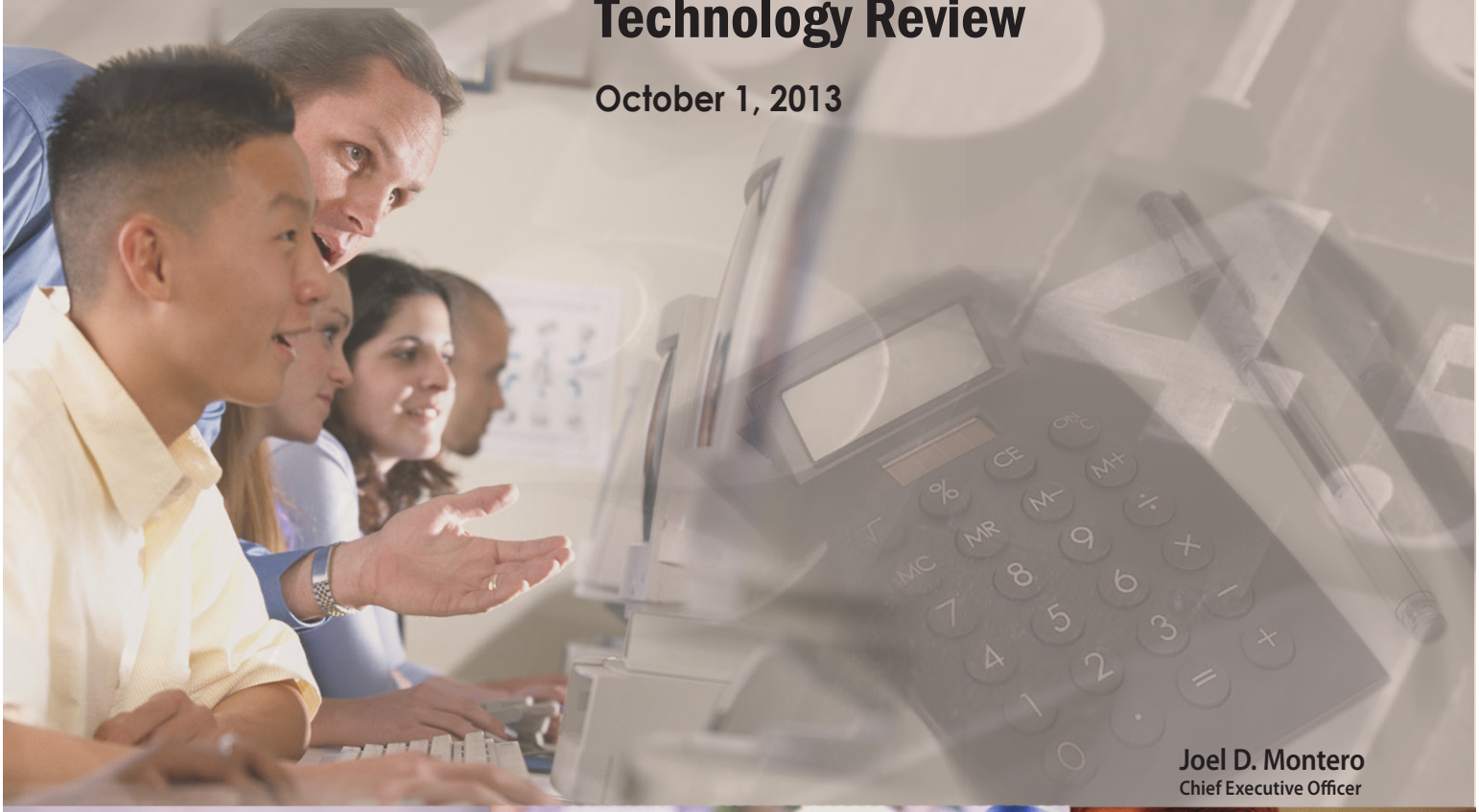
FCMAT
FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
CSIS California School Information Services

Santa Rosa City Schools

Technology Review

October 1, 2013



Joel D. Montero
Chief Executive Officer

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October 1, 2013

Socorro Shiels, Superintendent
Santa Rosa City Schools
211 Ridgway Avenue
Santa Rosa, CA 95401

Dear Superintendent Shiels,

In April 2013 the Santa Rosa City Schools and the Fiscal Crisis and Management Assistance Team (FCMAT) entered into an agreement to provide a review of the district's technology support services. Specifically, the agreement stated that FCMAT would perform the following:

1. Evaluate the organizational structure, staffing, workflow, efficiency and duties of technology department personnel. This component will include a review of technology-related board policies, administrative procedures, and operational practices, technology master plan and educational master plan. The team will evaluate the workflow and distribution of the department's technology-related duties and provide recommendations for improved efficiency, if any and will include the following:

    a. User, desktop and workstation support

    b. Network administration

    c. Website development and support

    d. E-mail support for district and site staff

    e. Student attendance system

    f. Financial reporting system

    g. Hardware installation and setup

    h. Application software used at district and sites

    i. Technology in the classrooms, and student data assessment and accountability protocols

    j. E-Rate administration and support

    k. Wireless technologies

2. Review the technology department's workflow and provide recommendations to improve efficiency that may reduce costs or require additional positions. Any additional positions recommended will include sample job descriptions if they are position classifications not already established by the district.

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

3. Evaluate the department's ability to implement, use and support technology used to provide remote training to staff and school sites. This component will include reviewing the district's preparedness for current and emerging technology. The team will provide recommendations to improve implementation and support.

4. Review the delivery of educational technology services to district classrooms, focusing on the quality and suitability of infrastructure and of educational technology software selection, implementation and support. Evaluation will be based on staff interviews and network documentation provided by the district. The team will provide recommendations for improved quality and efficiency, if any.

5. Review the district's business continuity planning including design of security and safeguards for data in the event of a catastrophic event or security breach.

6. Review and provide recommendations regarding professional development training for department staff.

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

Sincerely,

Joel Montero
Chief Executive Officer

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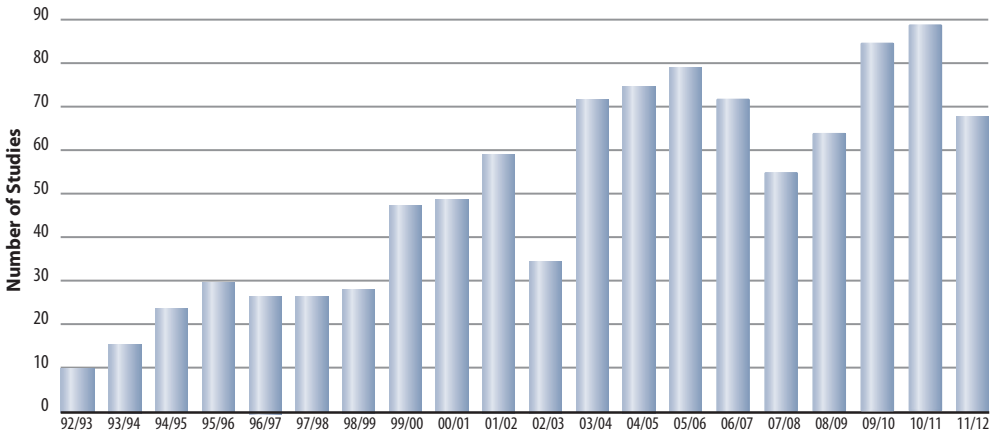
About FCMAT

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

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

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

Studies by Fiscal Year



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

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

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

Since 1992, FCMAT has been engaged to perform nearly 850 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 Santa Rosa City School District provides educational services to 16,430 students at 18 schools in the Santa Rosa High School District and the Santa Rosa Elementary School District. Services are provided to each district through a common administration where both districts are operated by a single school board and superintendent.

The district is located north of the San Francisco Bay and is near the geographical center of Sonoma County. Santa Rosa is both the county seat and largest city in the county, with a population of approximately 170,000.

As with many districts of similar size, the Santa Rosa City School District supports its educational process with a dedicated technology department. To ensure the optimum use of these resources the district has asked FCMAT to perform an extensive review of the department including staffing, organization, and services performed.

Study Guidelines

In April 2013 the Santa Rosa City Schools requested FCMAT to review the district's technology support services. FCMAT visited the district on May 22-24 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
- Information Technology Staffing and Structure
- Educational and Technology Master Plan
- Network Administration
- IT Services
- Board Policies
- Catastrophic Event or Security Breach
- Smarter Balanced Assessment Consortium Testing
- Appendices

Study Team

The study team was composed of the following members:

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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.

Executive Summary

Information Technology Staffing and Structure

The Information Technology (IT) department lacks focus on the educational needs of students and staff. A reorganization of the department is warranted to provide much needed relevant and timely services to students, teachers, and administration. An educational support group should be added to the department, led by a certificated educational technology coordinator. Additional management positions in the department are needed to oversee staff, manage projects, and improve services.

Technology assistants provide direct technology support at the sites. More technology assistants are needed to support the level of technology currently being utilized and the upcoming online student assessments related to the new Common Core standards.

IT staff have not received consistent professional development to help them stay current with evolving technologies. Each staff member needs a relevant professional development plan and related goals as part of their annual evaluation.

Educational and Technology Master Plan

The use of technology is integral to all grade levels and curricula. The district does not provide needed leadership and direction in this area, so the school sites work independently to integrate technology, with varied results. There is a lack of standards for devices, connectivity, and software, making technology support very difficult. The lack of districtwide professional development focused on technology integration is negatively affecting efforts to provide consistent, measureable, and positive results.

Network Administration

The district's wide-area network is not optimally configured, and unnecessary traffic on the network is a likely cause of the many network outages that occur. The district's Internet bandwidth is well below recommended speeds.

Internet filtering configurations are sometimes blocking access to legitimate curriculum material and teachers do not have the ability to bypass the filtering. Filtering rules are set by IT staff; they should instead be reviewed by the appropriate certificated staff such as those in the curriculum and instruction group.

IT Services

The IT department help desk is understaffed and does not fully use the iHelpDesk software to manage requests. A departmental secretary also performs the duties of a help desk technician. A formal help desk staffed with trained personnel that fully utilize available technology would better serve users' needs.

Staff reported that the ESchoolsPLUS (ESP) student information system is cumbersome, slow, unreliable, and confusing to use. It is possible that changes made to the ESP database by the chief technology officer are contributing to the performance problems. Due to its overall design, ESP does not interface with other systems the district uses, such as student assessment and library management tools, resulting in duplicate entries, errors, and inefficient use of staff time. The district should form a committee to determine if the problems surrounding ESP can be remedied or the system replaced.

Meaningful student assessment and evaluation data is not effectively delivered to sites. The data is often not provided, or is not provided in a timely manner. Data must be extracted from the student information system (SIS) and three assessment systems then manipulated to create needed reports. Sites are frustrated with the data provided by the assessment tools being used, and have not received professional development on how to interpret this data to make substantive changes in programs or teaching methods. The correct analysis and reporting of this data will be critical in the accountability associated with the newly required Local Control and Accountability Plan (LCAP).

Board Policies

Though board policies are generally in place to support technology use in the district, no process is in place to ensure that the policies and related administrative regulations are being implemented.

Catastrophic Event or Security Breach

The district is ill-prepared for a disaster related to its information systems. No well-documented plan is in place, nor has there been sufficient testing to ensure that the district could quickly restore critical data operations. The district must design, implement and regularly test its disaster recovery process.

Smarter Balanced Assessment Consortium (SBAC) Testing

As part of the Common Core State Standards implementation, the district will be required to participate in online assessments beginning in 2014-15 for all students in 3rd-8th grades, and 11th grade in English language arts and mathematics. The IT department is not collaborating sufficiently with the curriculum and instruction staff to ensure that the required technology will be in place for the testing. Network bandwidth, wireless access, proper number of devices, and maintenance of these devices must all be evaluated, adjusted, and supported.

Findings and Recommendations

Information Technology Structure and Staffing

Organization and Structure

Staffing in the IT department is oriented toward programming and report writing, with an emphasis on maintaining software application systems and the network infrastructure. The department's assessment group mainly manages standardized tests. The department offers little to the schools to support new educational technology initiatives and is disconnected from the challenge of making the classroom an effective environment for student learning. There is no educational technology support focus or staff in the IT department.

The department is also isolated internally. Groups of employees with like titles do not meet to share best practices. Programmers do not routinely meet with other programmers or report writers. Technology assistants have no scheduled meetings and there are no departmental meetings. Employees rely on word-of-mouth exchanges for updates and changes. The department has no production calendar and projects are not managed in terms of timelines, progress, or expectations.

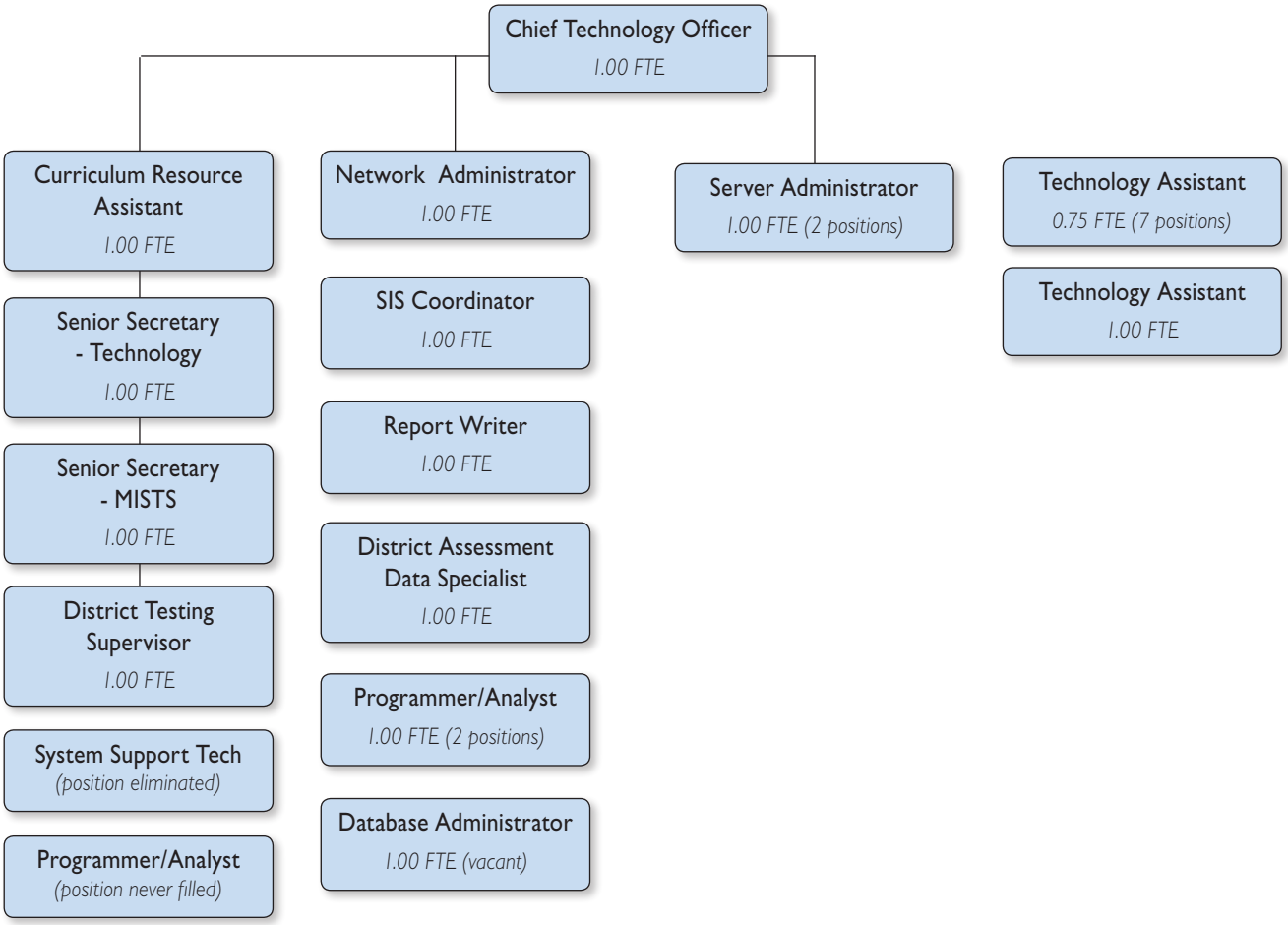
Eleven of the 15 positions in the department are programmer/data analyst positions that do not support modern educational tools such as laptops, social media, bring your own device (BYOD), just-in-time data reporting and dynamic curriculum delivery.

Department employees stated a desire to support modern best practices. They have concerns about not keeping their skills current and are willing to embrace new technologies. Regularly scheduled meetings with user groups would foster a sense of partnership with the educational community. A customer service orientation would help to prioritize the workload. A restructured department, organized around the district's plans and educational initiatives, could more effectively support the district.

Most positions in the IT department report directly to the chief technology officer (CTO). The department lacks functional managers over critical areas, including systems and networking, education technology and student information systems. The technology assistants provide primary school support. With only eight such positions, the district cannot adequately support current technology at the sites, or the anticipated increase in student technology use related to Common Core and the Smarter Balanced Assessment Consortium (SBAC). Several school sites share one or two technicians, which does not effectively utilize the available resources. In both education technology and network support, the department does not have adequate staff to address operational needs. The department has also been without a database administrator and is in the process of implementing a new web hosting service without a web administrator to support it. The department secretary has maintained several purchasing duties despite IT having been separated from purchasing for several years. There is no central help desk to coordinate support and provide immediate assistance either remotely or over the phone. The IT department does not communicate effectively with other departments or school sites. Internally, the CTO does not provide regular direction or feedback to the department personnel. The CTO primarily

focuses on the SIS and programming functions of the department. There is a general lack of leadership, strategic direction and effective communication.

Prior to the fieldwork FCMAT was provided with the IT department organizational chart:



Staffing, Duties and Workflow

IT department staffing reflects an outdated mission, one more suited toward central office operations and only remotely geared to the schools and their mission. This situation is reflected in the organization of department positions and the job descriptions and assignments of employees, with insufficient positions to support school operations. Many employees have not been evaluated for years and are left on their own to determine workflow and quality of work.

IT has no middle managers to direct the department's workflow. Employees essentially determine their own work calendars and requisite deadlines. No position is responsible for determining what staff development is necessary. No one interfaces with schools to determine project requirements or resolve outstanding issues. While the CTO has the authority to perform these tasks, the complexity of the systems and technology requires additional management assistance, particularly in day-to-day operations.

Technology support for school site end users is provided by eight technology assistant positions assigned to 31 schools, including five comprehensive high schools. Seven of the eight technology assistants are 10-month, six-hour-per-day positions. One technology assistant is a 10-month, eight-hour position. Technology assistants generally work the same hourly schedule as teachers. This schedule was originally set up to align the technicians' schedule to the hours that teachers require support. However, tasks that require teacher computer system down time or extensive technical work in the classroom may interrupt instruction.

Technology assistants are assigned work responsibilities for between two and four schools each. Assignments were set in an attempt to create equity in the number of computers supported per technician and, as a result, do not conform to any particular geographic region or similar school profile. Assistants perform computer repair, software installation, desktop imaging and hardware deployment for their assigned sites on their assigned days. Technology assistants do not normally work together on large projects although some principals on occasion do allow flexible scheduling for the technology assistants between shared sites to address support needs as they arise.

Technology service requests are not always resolved in a single day. Under a schedule where technicians are only at one school site one day a week, issues that cannot be resolved in one day may sit an entire week or more until the technician returns the following week.

Many districts struggle with this aspect of providing school site technology support. One way to address the issue is with centrally managed dispatch, with assignments made based on the skill, ability and resources of available technicians. In addition, a schedule should be distributed to the sites indicating when a technician will be on site each week. Though they report to the IT department, the technicians' priorities may be set or altered by the principal or designee. This could provide more efficient, timelier service on both small and large projects.

The backlog of new computer installations at the start of the school year was brought up as an ongoing issue. These installations at the sites have often taken months, with computers ordered during the previous year still not available for student use until as late as November. A general sentiment expressed during site visits is that while the technology assistants are trying their best, site staff wish they were there more often. In typical school district IT departments, summer break is generally the time set aside for major projects such as computer lab refresh, equipment installation and updates. The site technicians' 10-month schedule severely constrains the ability of the IT department to conduct projects to set up and prepare computer resources for the new school year.

The technicians work independently at their sites with no formal districtwide standards on documenting technology implementation such as physical and logical network layouts, administrative passwords, and software support contacts. This lack of documentation standards can make it difficult for another technician to step in and support the site during the primary technician's illness, vacation, or departure.

Professional development for end users of the systems provided by IT is nearly non-existent. Online software application help is either not available or is unpublished so that those who depend on the systems are left to their own to learn and maintain the data in those applications. No manuals or videos exist to assist current users, and new employees are not provided any orientation training on the systems. There is no end user manual for the student information system, eSchoolPLUS.

The department has not filled the database administrator (DBA) position. Five employees try to perform certain aspects of the DBA role in addition to their regular duties. This has impaired the ability of the department to deliver needed information to schools and departments in a timely manner. This situation is aggravated by the lack of cross training for employees who have positions that extract data, report data to schools or combine data into reports for schools and departments. The segregation has produced a situation where too many positions are required to manage the department's required tasks. The IT staff has become over-specialized. In some instances, employees sitting in desks side-by-side do not understand how their jobs are interrelated.

Professional development for end users of the systems provided by IT is nearly nonexistent. Online software application help is either not available or is unpublished so that those who depend on the systems are left to their own to learn and maintain the data in those applications. There are no manuals or videos to assist current users, and new employees are not provided any orientation training on the systems. There is no end-user manual for the student information system, eSchoolPLUS.

Individual technology assistants perform computer imaging and repair at the sites. This is extremely inefficient and often leads to varying levels of operating system stability and configuration. Centralizing hardware repair, imaging and deployment at the district office would allow the IT department more control of the process and lead to faster and more standardized deployments and service. The district does not maintain a common spare parts inventory, which leads to many repairs taking longer than they would if repairs did not have to wait for parts to be ordered and shipped. Given the variety and age differences of the computer hardware throughout the district, maintaining a standard set of repair parts may pose a challenge, though the district should attempt to stock the items used most often for repair. A surcharge on all new technology purchases through a flat rate or a percentage of the purchase price would help to fund both the repair center and parts inventory. The district should also move to standardize hardware and software to limit the variety of repair and support requirements in the future.

The IT department develops and maintains custom reports. Several users commented that reports are not updated in a timely manner. The department has a full time report writer for the custom reports. Many student information system vendors provide report writing services for a nominal fee and will also update reports and any custom code that supports them. The district should evaluate the cost effectiveness of outsourcing report writing to the SIS vendor versus continuing to maintain the function in the department.

Some technical jobs are not assigned to IT. Surveillance cameras and the systems that collect video data are assigned to Maintenance and Operations. Some non-technical tasks are assigned to IT. The IT department's secretary is assigned to inventory all district equipment ranging from football helmets to tractors to furniture and every other inventoried item. Mobile phones are assigned to the Purchasing Department for support.

It is primarily the technology assistants who maintain technical resources for students, teachers and site staff. Full-time positions are needed to protect the extensive investment in computers and the ever increasing array of new technologies such as tablets, projection systems, student response devices, and software.

Efficient work order systems and a help desk to manage the requests are essential to an effective IT department. The department secretary is best positioned to perform the help desk function but is impeded by other duties performed for the maintenance and operations department.

Recommendations

The district should:

1. Create a formal help desk as a single point of contact in the IT department.
2. Create online help materials, including manuals for major systems.
3. Develop a calendar of regularly scheduled meetings with end user job-alike groups where users can discuss problems and successes with technology solutions. Include appropriate IT staff in these meetings to provide updated information and training when and where needed..
4. Create a staff development program to instill a customer service orientation for the IT department.
5. Deliver staff development to end users on major systems and especially to provide an orientation for new teachers.
6. Adopt industry standards for IT documentation and project management.
7. Convert technology assistant positions to 12-month, full-time positions to improve school site administrative and classroom technology support, and to allow summer projects and new equipment installations to be completed before the start of the new school year.
8. Supplement the existing school assignment support model with centrally managed dispatch to address issues in a timelier manner.
9. Adopt a standard for documenting the IT technology at each site so that other technology assistants can more readily provide support.
10. Move technology related work from other departments to IT and move maintenance and inventory of non-technology related equipment to Maintenance and Operations.
11. Centralize key support functions such as repair, computer imaging and deployment in the IT department.

12. Create a parts inventory and begin standardizing hardware and software to improve support.

13. Provide sufficient notification to end users about system changes and upgrades. Whenever possible schedule them outside of the school day.

14. Consider developing a technology repair center. Consider placing a small surcharge on all new equipment to finance future repairs.

15. Evaluate the cost/benefit of contracting custom reports and ongoing support versus maintaining the function in the department.

Professional Development for IT Staff

IT staff receive little training, and most staff members described themselves as "self-taught" in their positions. IT staff also indicated that the department rarely has staff meetings.

The lack of formal training or team meetings has led to a lack of standardized practices. For example, the technician at one site may have a completely different process for installing printers than technicians at other sites. This inconsistency affects ongoing support, software and hardware upgrades, cross-training of personnel, etc.

The department needs to improve the training of IT personnel and collaboration. The simplest change that should be made immediately is to reinstate IT departmental meetings. Similarly, IT site technicians should meet regularly with each other and with supervisors. During these meetings, IT staff should collaborate on current and upcoming projects. These meetings should also be a forum for communicating ongoing or emerging issues and developing solutions as a team. Collaborative team meetings are also an excellent place to establish districtwide common practices to streamline service and support. Supervisors should develop professional development objectives into each employee's annual goals and evaluations. These objectives should be clearly defined and measurable such as "Receive A+ Certification within 1 year" or "Attend Microsoft Office training." The district's training goals for IT staff should also include cross-training between staff. During interviews it became clear that there were several positions are filled by staff that are the only person capable of fulfilling that role.

Recommendations

The district should:

1. Re-establish regular IT departmental meetings to communicate and collaborate on policies, procedures, and current and upcoming projects.
2. Ensure that supervisors develop clear and achievable professional growth goals for each employee during the year, including cross-training in the department and training on specific programs or systems.

Job Description Review and Reorganization

Job Description Review

Curriculum Resource Specialist

The curriculum resource specialist job description states the position is expected to: Coordinate district-wide K-12 testing programs and ensure compliance with all applicable laws, codes, rules, and regulations. Coordinate the processing of the district-wide group testing programs; assist in the development of the district testing schedule; participate in and oversee the processing of tests including scanning, scoring and printing of related reports; return results to schools; develop instructions for testing procedures. Maintain and coordinate testing between the district, schools and outside agencies as necessary to maintain testing programs. Monitor and report on performance of district programs and schools. In collaboration with C&I offices, perform analyses and research. Monitor data security to ensure the integrity and reliability of computerized testing information and test results in conformance with applicable state and federal laws and district policy. Supervise periodic reviews of test security related issues and needs and document findings. Assist efforts to improve data accuracy on all levels to ensure the quality of all internal and external reporting functions. Provide professional and technical advice and training to staff. Lead, coordinate, and assist with the institutionalization of statewide initiatives to implement computer-based testing (e.g. SBAC). Work with instructional staff to develop interim assessment systems. Provide training to school site staff regarding the use of assessment data in instructional planning (e.g. eSchoolPLUS, OARS). Communicate with administrator, personnel and outside organizations to coordinate research, data, and information technology efforts. Represent the district and department to relevant outside agencies and organizations. Coordinate and work with outside vendors. Gather data from all relevant sources to compile and publish the School Accountability Report Cards (SARC) for all schools. Work closely with feeder school districts and counselors to collect data for appropriate placement of incoming 7th grade students. Assist with the electronic collection and submission of electronic data. (i.e. CALPADS)

The actual current duties of the position are primarily related to managing the STAR and physical fitness testing process. There is an effort at individual schools to develop SBAC pilot testing sites. The list of current duties is short because the incumbent has only been in the position for approximately one month.

Senior Secretary, Management Information and Student Testing Services

The position's representative duties include: Work as an administrative assistant and clerical assistant to a district administrator; work effectively with the administrator on the assigned program. Transcribe dictation from shorthand notes, Dictaphone, or longhand copy. Type correspondence, reports, minutes, meeting notices, program guides and procedures and distribute as directed. Answer telephone for the assigned director; screen calls, take messages, schedule appointments and refer calls to proper departments. Open, sort and distribute mail to the office of the director; identify items requiring immediate response. Maintain files relating to the assigned program; maintain correspondence, in-service activities, federal, state and local regulations, professional organizations and other records as directed. Type and record purchase orders and stores requisitions, special trip requests, claims for reimbursement, and special projects performed by department personnel. Assist in the preparation of the budget for assigned programs. Prepare agendas for staff meetings; take, transcribe and distribute minutes of meetings as directed. Prepare requests for hire and authorizations to hire for personnel as directed. Perform a wide variety of program related activities, including the coordination of administrative details in support of

the director. Receive callers in person and over the phone and provide information concerning programs and procedures of assigned office. Maintain the director's appointment calendar, schedule appointments and participate as necessary in meetings. Gather, compute and compile information and figures for reports. Deal tactfully and courteously with parents and students by telephone and in person as appropriate.

This position assists with the testing process and performs minimal secretarial duties.

Senior Secretary Technology

The position's representative duties include: Significant amount of contact with district personnel and vendors. Ability to successfully communicate verbally and in writing. Receives majority of equipment repair calls from district personnel. Aptitude for technology, computers, audiovisual and telephone systems operations desirable. Works with staff to coordinate and schedule equipment repair. A broad knowledge of the district's operation is highly desirable. Ability to maintain a detailed repair service log. Ability to review and approve technical service invoices. Ability to distinguish between warranty and repair/recall service. Ability to research equipment warranty and repair history. Ability to make appropriate inquiries to resolve issues. Develop and maintain technical competency by attending job-related classes and seminars as assigned.

This position reports to two directors, IT and Purchasing, and only performs limited secretarial duties. The position is responsible for equipment repair and asset tagging for all district inventoried equipment in all departments. It is a largely technical position, responsible for help desk, voicemail, user logins, phone moves-adds-changes, report card processing, auto-dialer, student pictures, employee picture IDs and software training.

These technical duties are normally assigned to information technology positions. In this instance, the incumbent has, of necessity, developed skills that are integral to department operations. It is highly unlikely that an individual with traditional secretarial skills could perform these duties. A new job description is needed to correct the reporting structure to report only to the IT director and reflect the duties performed.

District Testing Coordinator

The district testing coordinator job description states the position is expected to: Coordinate the reproduction, organization, distribution, and collection of district K-8 benchmark assessments, high school exit exams, and end-of-course exams. Coordinate the organization, distribution, collection, and returns of all national and/or state assessments (STAR, SABE/2, CAHSEE, Golden State, Physical Fitness, ELD). Assist the district programmer/analyst in the collection and analysis of testing data. Assist the director, management information and student testing services in the preparation of reports regarding student assessments and other district accountability documents. Assist the district programmer/analyst in maintaining effective data warehousing and data mining software for use of the district staff. Assist the district programmer/analyst with the student information system to use the testing module software.

The actual duties of this position align with the job description.

Report Writer

The report writer job description states the position is expected to: Chart existing processes in order to define current reporting activities for the development of existing and future reporting procedures and models. Meet with decision makers, systems owners, and end users to define reporting requirements and goals. In conjunction with data owners and business units, develop specifications and delivery mechanisms for reporting in concert with company

goals. Design, develop, create, and deliver the needed reports to the end-user community. Work with application development staff to coordinate the creation and management of reporting structures. Prepare and deliver reports, recommendations, or alternatives for improving processes in reporting systems across the organization. Advise department and line managers regarding appropriate, effective, and efficient use of organizational reporting capabilities and functions. Research, review, and analyze the effectiveness and efficiency of existing report procedures and develop strategies for enhancing or further leveraging these processes. Liaise with various business groups in the organization to facilitate implementation of new or improved reporting processes. Oversee the implementation of reporting structures in regard to technical changes and change management. Communicate reporting changes, enhancements, and modifications – verbally or through written documentation – to management and other employees so that issues and solutions are understood. Develop routines and procedures for end users to facilitate best practices use of reporting tools and applications. Coordinate and perform in-depth tests, including end user reviews, for modified and new processes, and other post-implementation support.

The actual duties of the position are primarily restricted to creating reports. In this capacity a good deal of interaction must occur between the report writer and the client requesting the report. Reports are restricted to student information, with no support of the district's business services functions. The position does not perform any of the analyst duties in the job description such as "Advise department and line managers regarding appropriate, effective, and efficient use of organizational reporting capabilities and functions."

District Assessment Data Specialist

The district assessment data specialist job description states the position is expected to: Assist the director, management information and student testing services in the preparation of reports regarding student assessments and other district, state and federal accountability documents. Prepare statistical data and types statistical reports, findings, and recommendations as directed by the director, management information and student testing services. Assist the district programmer/analyst and operations coordinator in the collection, submission, analysis and verification of testing and student data files for state and local testing. Assist the district programmer/analyst in maintaining effective data warehousing and data mining software for use of the district staff. Assist the district programmer/analyst with the student information system to use the testing module software. Organize the printing and reading of all scans for local testing and loads data onto the student system. Fill requests for information from within the school district and from the public. Assist district testing specialist with test warehouse work.

The current duties of the position are commensurate with the job description.

Programmer/Analyst

The department has three programmer/analyst positions; however, one is vacant. The key responsibilities of this position include: formulating and designing new or revised methods of applying current computer technology for the solution of operational problems; define, design, and write computer programs and make necessary program validity tests, revisions, and corrections; fully document the developed system; accomplish activities to a successful completion and perform other duties as required.

The essential job functions of this position include: liaison activities between Management Information and Student Testing Services and computer vendors for activities, such as system configuration, system halts and operating system updates as well as coordinating debugging of programs and user specifications with software vendors. The incumbent will perform system

analysis work and all typical duties of a programmer with the greater part of time spent on the duties of programmer dedicated to Curriculum & Instruction needs.

The actual duties of the position vary between the two current programmer/analysts. One position is responsible for district CALPADS reporting and does not perform regular programming duties, while the other programs custom web applications and CALPADS extracts. Website support was also noted in this staff member's job duties list. The programming duties are mainly being performed in .Net web applications, SQL reporting and data file transfers.

Technology Assistant

The key responsibilities of this position include: Maintaining computer labs and preparing them for use in the instructional program. Installs, maintains and repairs all types of technology equipment. Installs district provided programs. Troubleshoots and resolves problems that occur with hardware or software. Assists with the installation of wiring and communication links at school sites. Coordinates with Technology Services for all service and repair of equipment. Assists with the establishment of and the maintenance of local area networks. Provides support for technology in libraries and media centers. Assists school staff with the operation of equipment. Provides direct assistance to students and staff in the operation of technology equipment. Sets up and relocates equipment and makes it operational. Maintains records and inventories as directed.

The actual duties of the position are to provide end user technology support at the school sites.

Server Administrator

The department has two server administrator positions. The key responsibilities of this position are: to design, install, administer, and optimize company servers and related components to achieve high performance of the various business applications supported by tuning the servers as necessary. This includes ensuring the availability of client/server applications, configuring all new implementations, and developing processes and procedures for ongoing management of the server environment. Where applicable, the server administrator will assist in overseeing the physical security, integrity, and safety of the data center/server farm.

The essential job functions of this position include: Develop strategies for client/server implementations; architect the infrastructure required to support those strategies. Lead, coordinate and participate in key process improvements as they relate to the client/server environment. Manage all network hardware and equipment, including routers, switches, hubs, and UPSs. Oversee installation, configuration, maintenance, and troubleshooting of end user workstation hardware, software, and peripheral devices. Act as project lead in the design and review of new server systems, applications, and hardware; conduct capacity planning as needed. Coordinate and collaborate with network engineering, business application, and database administration function to ensure availability, reliability, and scalability of corporate servers to meet business demands. Check help desk database for entries on server and server resource issues; prioritize and respond to help desk tickets as appropriate. Serve as cornerstone for escalating server issues; provide timely response to customer escalations. Perform file system configuration and management; define and perform server backups and recovery procedures. Plan and implement server upgrades, maintenance fixes, and vendor-supplied patches. Provide Web administration support by overseeing and maintaining Web server functions, such as assuring logging and metrics data are stable. Monitor and test system performance and provide performance statistics and reports. Create shell scripts, as required. Manage enterprise directory services and supporting server infrastructure. Establish and implement policies, procedures, and technologies (including firewalls) to ensure server security. Assist in designing and implementing data center/server room security features, including

HVAC control, environmental alarms, access restrictions, and so on. Define and implement strategies for integrating disparate operating environments. Recommend and execute modifications to server environment in order to improve efficiency, reliability, and performance. Conduct research on server hardware, software, and protocols in support of procurement and development efforts. Develop and maintain training materials and server documentation. Perform other duties as assigned.

The server administrators provide server support for the district as well as help desk and end user support to the district office, second level support to technology assistants and some network support. The two server administrators split the responsibilities of supporting servers, storage, backups and end users, and back up each other when required. One server administrator is responsible for supervising the technology assistants, liaising with site principals, supporting e-mail and server virtualization, while the other is more focused on storage, directory services and printer support.

Network Administrator

The network administrator job description states the position duties are: to ensure the stable operation of the LAN and applicable WAN components of the computer network under the direction of the chief technology officer. This includes planning, developing, installing, configuring, maintaining, supporting, and optimizing all network hardware, software, and communication links. The person will also analyze and resolve end user hardware and software computer problems in a timely and accurate fashion, and provide end user training where required.

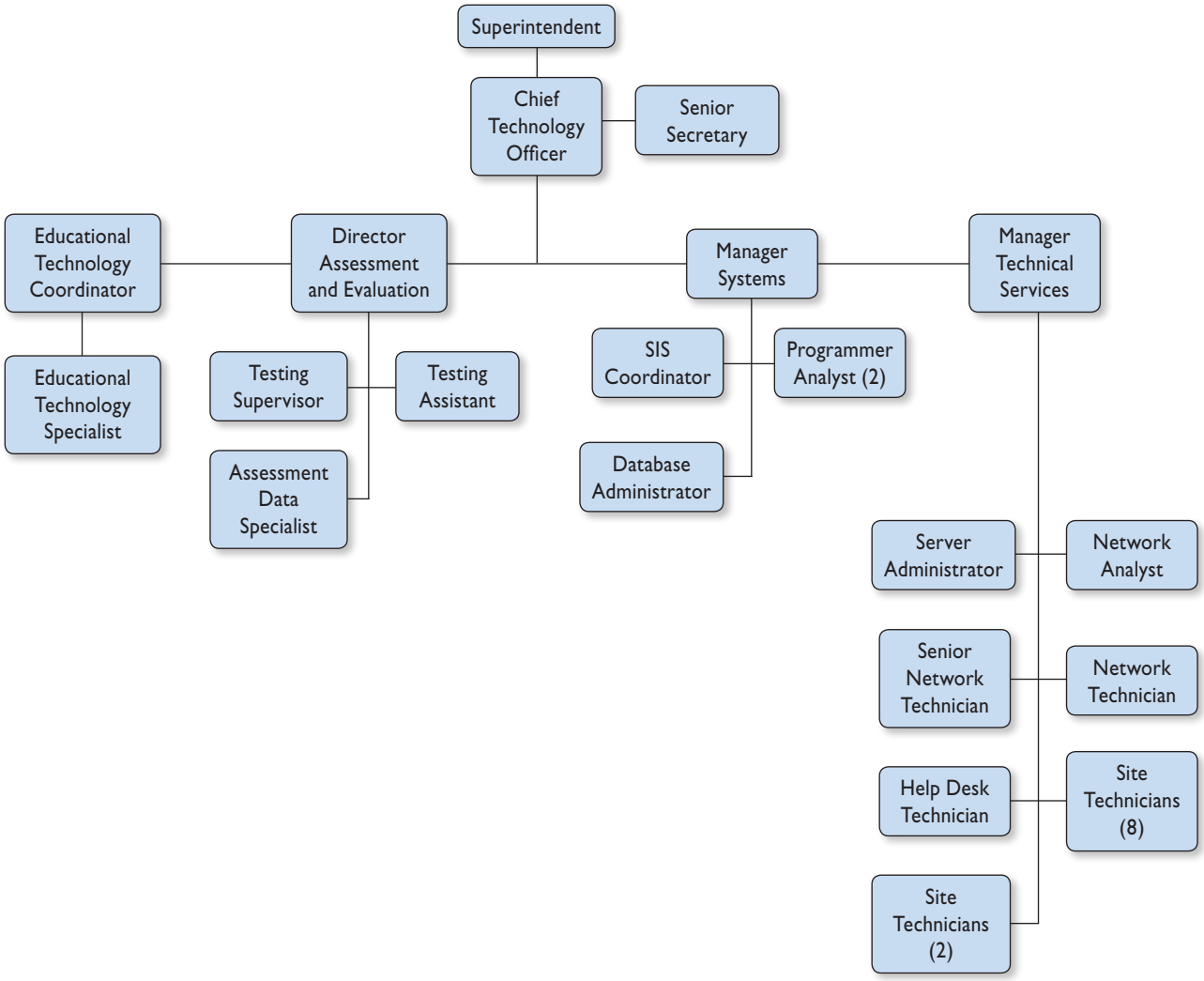
The actual duties of the position align with the job description, including supporting the telecommunications, cable plant, network switching environment and firewall support. The network administrator provides phone system and firewall administration support in addition to network administration support. This includes adds/moves/changes, cabling, switch configurations and firewall changes.

Given the size and scope of the district's network and phone system, additional network administration support is warranted. If this position will continue to provide phone system support, the job description and qualifications should be updated to reflect this.

Reorganization

The review of IT positions indicates the need for a process to bring the department's positions in line with current information technology best practices. The IT department should be reorganized to meet the needs of all district stakeholders, particularly with regard to instructional delivery, efficient school operation, and timely information. This should include arranging the department's staff into workgroups that reflect common tasks. Department staffing levels should be commensurate with other districts of comparable size and funding allocations.

The following diagram shows a potential reorganization of the department based on comparable school organizations.



The table below shows current and proposed title changes (if any) for departmental positions.

Current Title	Proposed Title/Change
Chief Technology Officer	Chief Technology Officer
Curriculum Resource Assistant	Director of Assessment and Evaluation
Senior Secretary – Technology	No change
Senior Secretary – MISTS	Testing Assistant
District Testing Supervisor	Testing Supervisor
Programmer Analyst (2)	No change
Network Administrator	Senior Network Technician
SIS Coordinator	No change
District Assessment Data Specialist	Assessment Data Specialist
Database Administrator (Vacant)	Fill vacant position
Server Administrator	No change
Server Administrator	Network Analyst
Technology Assistants (8)	Site Technicians (8) –Title change to reflect duties. Seven of the eight technology assistants are 10-month, six-hour-per-day positions (.75 FTE). One technology assistant is a 10-month, eight-hour position (1.0 FTE). All should be made full-time 12-month positions

Positions recommended for elimination are as follows with an estimated cost reduction. Please note that all salary figures in the next two tables are FCMAT estimates and not actual SRCS salaries.

Current Title	Estimated Annual Salaries
Programmer/Analyst (vacant)	$70,284
Report Writer	$70,236

New positions in the department are listed in the following table along with estimated salaries.

New Position	Estimated Annual Salaries
Site Technicians (2)	$41,124 each, or $82,248 total
Help Desk Technician	$43,176
Educational Technology Coordinator	$85,732
Educational Technology Specialist	$56,760
Manager of Systems	$83,352
Manager of Technical Services	$83,352

While many incumbents would remain in department positions, the vacant programmer analyst and the report writer positions could be eliminated if existing vendors supply the requested reports. Two additional technology assistant/site technician positions are included in the proposed organizational structure to better serve the needs of the school sites.

The transition to the new organizational structure can be accomplished by a combination of attrition, reclassification and/or other means. Potential changes in position, titles, and salaries may be subject to negotiations and the collective bargaining process. The proposed reorganized department contains several new position titles, and representative duties and responsibilities are briefly described below. Sample job descriptions are included in Appendix C.

Staffing Comparison

District	Students	Schools	Total FTE	Positions	FTE
Santa Clara Unified	15,288	25	12	Director	1
				WAN/Intranet Administrator	1
				Local Area Network Administrator	1
				Database Administrator	1
				SIS/Data Processing Specialist	1
				Application Support Specialist	2
				Senior Technician	1
				Technician	3
				PC/Network Support Specialist	1
Fullerton School District (Elem)	13,656	20	10	Director	1
				Assistant Director	1
				Technical Support Specialist III	1
				Technical Support Specialist I	1
				Computer Repair	2
				Program Specialist	1
				Computer Repair Coordinator	1
				Technical Support Specialist IV	1
				Technical Support Specialist II	1
Santa Rosa City School District*	16,430	18	20.25*	Chief Technology Officer	1
				Curriculum Resource Assistant	1
				Senior Secretary	2
				District Testing Supervisor	1
				Network Administrator	1
				Student Information Supervisor	1
				Report Writer	1
				District Assessment Data Specialist	1
				Programmer/Analyst	2
				Database Administrator	1
				Server Administrator	2
				Technology Assistant (7 at .75 FTE)	5.25
				Technology Assistant (1 at .1.0 FTE)	1
Monterey Peninsula Unified	10,956	22	11	Director II	1
				Administrative Assistant	1
				Systems Administrator	1
				Learning Community Technology Administrator	3
				LAN Tech II	5

Campbell Union School District	7,683	13	6	Supervisor of Technology	1
				Network Coordinator	1
				Computer Technician	1
				Desktop Support Technician	1
				Student Technology Specialist	1
				Student Information Supervisor	1
Campbell Union High School District	7,408	7	6	Director	1
				Network Manager	1
				Lead Computer Support Technician	1
				Computer Support Technician	2
				Database Specialist	1

*It should be noted that of the districts listed in the table above, SRCS is the only district which has the testing/assessment staff as part of the IT department. If the four testing/assessment staff were removed from the comparison it would reduce SRCS's total FTE to 16.25.

Position Descriptions

Education Technology Coordinator

Implements the district's educational plan to integrate technology into the classroom, curriculum and teaching practices. Provides overall leadership in developing strategies to deliver technology solutions for teaching and learning. Provides staff development and technical assistance to teachers and administrators in selecting and placing technology resources in the classroom. Assists the chief technology officer and serves on the district technology committee. Assesses emerging technologies and develops strategies for their use in the classroom.

Education Technology Specialist

Supports and assists the educational technology coordinator by publicizing and scheduling professional development opportunities; creates documentation and support manuals; assists with design of educational technology curriculum and learning tools. Recommends software and hardware that meet the district's standards and integrate with curriculum.

Director of Assessment and Evaluation

Plans, coordinates and implements a districtwide plan for assessing student progress. Coordinates the production, distribution, collection and processing of assessment materials. Develops strategies and processes for training all principals/directors and their designated staff in implementing assessments and in data collection for state mandated tests and district assessment documents. Manages administration of state mandated reporting and accountability testing programs including but not limited to CBEDS, CSIS, CAHSEE, STAR, CST, API, Common Core and SBAC. Develops formative assessment programs. Analyzes the results of student assessment programs, including preparation of reports for administration, staff, and the board. Provides analysis of California assessment programs, school performance reports, college performance data, SAT and ACT results, and other data collection projects to the chief technology officer. Designs and implements evaluation studies of district programs.

Manager of Systems

Directs, develops, plans, organizes, leads, trains and monitors all aspects of the district's mission critical applications including business, educational and human resource systems. Directs and facilitates ongoing districtwide information needs and develops and implement databases, software, and processing procedures to ensure delivery of meaningful and timely information that fulfills the district's educational and business objectives. Oversees, develops, and implements systems that provide information sharing and data integration among the district's disparate systems and with other educational entities. Performs project management and ongoing support tasks to ensure the successful implementation of systems throughout their life cycles.

Manager of Technical Services

Directs and facilitates ongoing districtwide support for voice, video and data communications and develops and implements practices, procedures, and technologies to ensure delivery of meaningful and timely information that fulfills the district's educational and business objectives. Oversees, develops, and implements efficient support services for computer repair, network installation, desktop support, network integration and maintenance, telephony and media delivery. Directs, facilitates, and monitors network services. Performs and assigns project management and ongoing support tasks to ensure the successful implementation of voice, video and data network technologies and topologies throughout their life cycles.

Network Analyst

Designs, configures, installs, maintains, and repairs network systems, subsystems and servers; oversees the computer/server room operation and environment; provides information, direction and/or recommendations regarding network installations and configurations; resolves network operational issues; and provides technical support to district and site staff. Designs IP networks (e.g. Internet, intranet, web mail, FTP servers) to ensure effective and efficient operating systems. Installs network (client and server) software on a variety of platforms to upgrade and maintain district WAN/LAN and telecommunication systems. Maintains network operations and software application operating systems, districtwide server backup, and routine maintenance to ensure efficient operations.

Network Technician

Installs, troubleshoots and maintains computer hardware and peripheral equipment; diagnoses and repairs hardware and network failures; provides technical support to site administrators; and resolves school site operational issues.

Senior Network Technician

Maintains Ethernet networks and the district LAN. This includes router configuration, computer hardware and software practices, procedures, documentation and causes of microcomputer user downtime. Establishes routine maintenance methods and procedures for data analysis to develop solutions to system problems and to determine the origin of network and computer malfunctions for resolution.

Help Desk Technician

Serves as a resource for users of the district's information systems; analyzes problems and issues related to the information systems and related software; develops and delivers training materials; maintains user rights and responsibilities to various applications; and assists users. Compiles a variety of reports (e.g., status/activity reports, logs, grades, financial status) to provide information and/or comply with legal mandates. Designs report options and/or database applications to

provide employees with information customized to their needs. Develops and prepares user materials to provide instruction and reference. Instructs district and site staff on the use of districtwide information systems (e.g. new applications, upgrades, updates) to ensure proper and efficient system use. Troubleshoots issues related to the districtwide information systems and software applications to resolve user problems.

Recommendations

The district should:

1. Restructure the IT department to improve the focus of operations on teaching and learning and implementing technology initiatives in support of Common Core and SBAC readiness.
2. Change position titles for those staff indicated in the table.
3. Create the educational technology coordinator, manager of technical services, manager of systems, and director of assessment and evaluation positions to improve day-to-day operations, service to end users, communications and project status information.
4. Add two technology assistant positions to improve technology support to the school sites.
5. Fill the vacant database administrator position.
6. Remove the help desk and other technical responsibilities from the senior secretary technology position.
7. Create a dedicated help desk position to improve the quality and timeliness of service to end users.
8. Evaluate the cost/benefit of contracting custom reports and ongoing support versus maintaining the function in the department. Eliminate the report writer position if existing vendors will provide those reports to the district.
9. Eliminate the vacant programmer position.
10. Create a network technician position to better support the growing complexity of the network and additional wireless equipment and users.
11. Review all job descriptions in the department for appropriate position descriptions and essential functions.

Educational and Technology Master Plan

Collaborative and Independent Activities

The district's educational technology master plan was developed as a requirement of the federal Schools and Libraries Commission E-Rate program. It only superficially addresses the planning and support of a modern learning environment. However, it is the only district document that includes both technology and education strategic planning. While the board has adopted policies for technology planning, website development, student access to technology, staff development and a wide range of other technology related items, these policies have not been fully implemented. Administrative regulations that accompany policy have likewise not led to policy implementations.

Almost every employee interviewed, including certificated, classified and administrative staff, recognized the need to improve the technology adoption process and indicated a willingness to work toward that goal. The primary problem is that schools and departments have not collaborated to create a unified operation at a district level. Many of those interviewed described an "island culture" at school sites that promotes independent activities. To some extent the schools also have independent groups that do not collaborate on curriculum, technology equipment purchases or other vital activities. The result is an assortment of instructional approaches, educational software purchases, computer models and outcomes.

Many district teachers are at the forefront of technology innovation. They use the latest in technology, software and the Internet to craft engaging and relevant instruction for their students. They attend conferences, partake in online coursework and collaborate with others to learn about useful best practices. This is done individually, with little district support. Rarely are teachers assigned technology support as part of their duties. The district has not created an ongoing professional development program for teachers, who learn basic skills on their own, such as using the student information system eSchoolPLUS. The modules needed to conduct classroom operations like grade books and attendance are not taught to new teachers entering the district.

Access to the network and technology resources varies widely across the district. Some schools have ubiquitous wireless access and others struggle to get basic wired connectivity. One school has an ELMO projection system in every classroom and other schools have one or a few. Some schools choose Google Chromebooks for learning and others choose Apple iPads or Amazon Kindles. Schools with strong PTA support have access to a wider variety of instructional materials, especially classroom technology. The lack of a coordinated acquisition process for instructional technology resources has resulted in a disorganized system of classroom technology support.

The district lacks a technology committee to set standards, policies or procedures. As a result, there is no discussion of matching technology to the curriculum and no standards for grade-level purchases. Planning for the implementation of the new Smarter Balanced Assessment Consortium (SBAC) student testing is taking place at school sites rather than being gathered into a comprehensive district-wide plan.

Classified employees of the IT department, not educators, decide the level of access to online instructional materials delivered through the district's Internet services. Houghton Mifflin ancillary materials that are necessary for instruction are also often inaccessible. YouTube and other relevant social media applications are blocked without explanation.

The rate of technology implementation is accelerating but without agreement on what best fits the district's curriculum. Teachers essentially purchase whatever device they deem best: laptop computer, iPad, Chromebook, Kindle or other handheld device.

An optimal technology selection process involves teachers, administrators, purchasing personnel and technology staff. Technology standards that meet curriculum design and are innovative can assist teachers in improving student performance. Classrooms that have prompt support when problems arise lose little instructional time. The IT department can better focus support with standardized devices and software, while still providing teachers with a range of options.

Recommendations

The district should:

1. Establish a technology committee chaired by the chief technology officer, with a broad base of participation by administrators, teachers, classified staff, parents and community members.
2. Periodically update the administration and board on technology policies and administrative regulations to ensure alignment with district objectives.
3. Establish an instruction and curriculum connection to the IT department by assigning a teacher or site administrator as an educational technology coordinator.
4. Create policies, practices and activities that foster collaboration between schools, the district office and departments.

Network Administration

Wide Area Network Connectivity

The district uses an AT&T GigaMAN metro Ethernet network to connect most of its school sites. The bandwidth available on each of these connections is 1 Gbps.

By definition there are seven "layers" of how data is transmitted over a network and presented to the end user. This section of the report will focus on layer 2 and layer 3. A brief description of each follows.

Layer 2: data link layer

The data link layer is the method in which information from the network is broken down into groups and transmitted over the physical network. This layer is also responsible for some error detection and correction and some addressing so different devices can tell each other apart in larger systems.

Layer 3: network layer

The network layer works to coordinate transmission of a related set of data to ensure that large files are properly transferred. In other words, while the data link layer deals with the method in which the physical layer is used to transfer data, the network layer deals with organizing that data for transfer and reassembly. This layer also handles aspects of finding the best available path from one network to another to ensure delivery of the data.

A mixture of Layer 3 and Layer 2 routed switched traffic traverses the connections between the school sites and the district office.

No quality of service (QoS) rules are used to prioritize network traffic moving between sites and district office.

There is adequate bandwidth between sites if it is properly managed; however, Layer 2 virtual local area networks (VLANs) that span the wide area network result in unnecessary network traffic on these critical links. The lack of traffic prioritization results in poor performance on critical applications during periods of high network utilization.

The networking switch in every school site's central networking center, or main distribution frame (MDF), is capable of both Layer 3 switching and routing. The district could eliminate significant network inefficiencies by routing traffic from site to site rather than using the current switching only method. Using QoS to prioritize traffic would reduce network congestion. Network monitoring and analysis tools would be necessary to effectively establish QoS and rate limiting thresholds.

Local Area Network Connectivity

The district primarily uses HP ProCurve 3500 Series and 5400 Series switches for access layer connectivity. This allows users to connect at 10/100/1000 Mbps. The school site networks use separate port-based VLANs to isolate traffic between students and teachers/administrators for security and policy reasons. The wiring closets, or intermediate distribution frame (IDF) at each site connect directly to the MDF over a single 1 Gbps multimode fiber connection. If an IDF contains multiple switches, they are daisy-chained together with 1 Gbps copper connections within the wiring closet.

The LANs at the school sites are well designed and should provide good service to the district for several more years if they are properly maintained. The standardization of network hardware across the district is essential to network reliability and predictability and will help the district's network support staff to be more effective.

The district could further reduce network overhead, particularly at the larger school sites, by segmenting the LANs into VLANs defined by location. All devices connecting to the network through a particular wiring closet could be assigned to their own discrete VLAN. This would keep the amount of network broadcast traffic to a minimum. This will become increasingly important as the district broadens its wireless network access because of the "shared network segment" nature of wireless connectivity.

Internet Connectivity

The district has a dedicated 1 Gbps GigaMAN connection to the Sonoma County Office of Education. This connection is used to access various business services provided by the county office as well as for Internet access. The county office has allocated 100 Mbps of its Internet bandwidth for the district's use. The district uses a Cisco ASA firewall to provide network security and address translation. All network traffic to and from the county office (including Internet traffic) passes through this firewall. The district uses an iBoss content filtering appliance for Internet filtering to ensure compliance with the Children's Internet Protection Act (CIPA).

The available bandwidth to the Internet is inadequate for a district of this size. This problem will increase as the district transitions to cloud-based services such as hosted email, hosted Voice over IP (VoIP) phones, vendor software application hosting, etc. The Internet content filtering is configured in a way that is too restrictive on teachers trying to access teaching content. One site reported that the district-adopted Houghton Mifflin math curriculum was being restricted by the content filtering system.

The district should coordinate with the county office to increase the available bandwidth. A general recommendation is at least 100 Mbps of connectivity to the Internet for every 1,000 students and staff members. The district has only 100 Mbps of total Internet bandwidth for its 11,354 students. Depending on the county office's overall network capacity and plans, the district may need to acquire a dedicated Internet connection.

The district's iBoss content filtering appliance can be integrated with the Microsoft Active Directory authentication system to allow teachers to use their existing login and password to bypass the filtering. Once the bypass session has been initiated, the system can record what sites were visited to remain CIPA compliant and ensure that students are not exposed to harmful content. It is also good practice for districts to update their acceptable use policies and have all staff sign them before allowing this elevated level of Internet access.

Wiring Closets

The IDFs and MDFs at school sites are not in dedicated equipment space. The rooms are often used as storage facilities and/or custodial closets and sometimes contain sinks, hoses, water buckets, etc. This puts the equipment at risk of water damage, being bumped or overheating from having materials stacked on top. The rooms and equipment racks generally do not have power buffering or uninterruptable power supplies (UPS) to protect the network equipment from power spikes or outages, making it susceptible to damage.

The district should take precautions to protect its investment in network hardware and cabling. The district's wiring closets need to be single-purpose rooms to ensure reliable network connectivity.

Support

Districtwide network support is provided by one engineer who is also responsible for all telecommunication support and spends, by his estimation, 60% of his time performing those duties. He has had no formal data network support training. He has a good understanding of network design and support, but does not have adequate time to support a network of this size. As the network grows to include more wireless networking and devices, support needs will also grow. Recent network support contracts with outside vendors AMS and DecoTech are no longer in effect.

Districts are seeing an increase in operational services such as clocks, bells, loudspeakers, surveillance cameras, etc. moving onto the data network. All of these services will require timely support and proactive monitoring to ensure reliable and adequate service.

Recommendations

The district should:

1. Implement the use Layer 3 routing between all sites for all traffic across the district's wide area network (WAN).
2. Use quality of service rules to prioritize the most critical traffic on the WAN. Install routers or metro Ethernet switches if needed.
3. Install and configure network monitoring and analysis tools to effectively manage devices and traffic on the network.
4. Segment local area network (LAN) traffic at larger school sites by using VLANS to reduce network overhead.
5. Increase bandwidth to the Internet to accommodate current need and anticipated cloud-based services.
6. Provide teachers with the ability to bypass Internet content filtering to obtain teaching content.
7. Consider alternative locations for custodians' water and cleaning supplies, or relocate the IDFs.
8. Invest in UPSs or power surge protectors in all wiring closets to safeguard against damage caused by power fluctuations.
9. Hire a network technician to help manage network technologies.

IT Services

Website Development

District website support has been provided by a combination of the CTO, a teacher, and a vendor, Sector Point. Approximately two years ago the district initiated the replacement of its website to better meet administrative and school needs. Recollections of the process vary as to who was to manage it, its objectives and design criteria, and method of deployment. Schools indicated they had little input into the design. The plan is to build the website on Microsoft's SharePoint technology platform, which allows schools considerable control over their content and is easy to use. However, school site staff are concerned that unless the process for overall management of the website is changed, the new site will not be more useful.

The technology department has veto authority over the website, its services and content. This has resulted in the IT department blocking instructional information, with little guidance from educators or administrators. A great deal of involvement by the IT department is required before sites can post information on their own websites. District departments find it difficult to arrange website content to meet their needs.

The new website should reflect an instructional orientation, manageable by schools. Approved content should reflect the needs of sites and departments and not solely the IT department.

Recommendations

The district should:

1. Assign the webmaster duties to a programmer analyst or other position in the IT department.
2. Assign oversight of the website to the Technology Committee.
3. Instruct the district technology committee to establish principles and procedures for managing the website.

Help Desk

The IT department uses an online web help desk program, iHelpDesk, to manage requests for services. Users are instructed to place an online request for service, or ticket, for all technology issues. iHelpDesk includes a feature that allows service requests via email to be automatically converted into tickets. The department has not yet enabled this feature. Creating a ticket via email can sometimes be much faster for end users and increase their willingness to submit requests online.

The IT department does not measure the effectiveness of help desk support. No client surveys are conducted to determine if services were timely, correct and effective.

Users cannot create help desk tickets from outside the network. This option would allow users to create tickets from smartphones or from home, which may be more convenient for specific types of technical problems.

The IT department does not offer help desk phone support to address issues that could be resolved promptly over the phone or through remote support, such as password resets and application help. The department secretary provides help desk phone and email support.

Recommendations

The district should:

1. Configure the iHelpDesk system to allow ticket submission via email as an option.
2. Configure iHelpDesk and network security to allow ticket submission from outside the network.
3. Establish a dedicated help desk phone number that is staffed during normal business hours and can offer immediate help or direct the user to the appropriate resource.
4. Create a full-time help desk technician position to provide timely user support.
5. Configure the help desk system so that when tickets are completed and closed, the system sends the client an email containing a link to a customer satisfaction survey. Use this data to improve customer service.

Student Information System

The district uses ESchoolPLUS (ESP) from SunGard to manage attendance and most other student information system (SIS) functions. The version of ESP being used in the district is 2.6 and version 3.0 is now available from the vendor. Over the past few years the CTO has made significant changes to the ESP database in an effort to improve the system but those changes have not been documented.

Feedback received during interviews regarding the performance of the current system was universally negative and was described as slow and unreliable. Navigation and data entry in the interface was reported as confusing and cumbersome.

Training was provided when the system was installed but has not been ongoing. ESP does not interface easily with other district data systems in use, such as assessment and library management, resulting in wasted time and errors because data is input multiple times into different systems.

The frustration with ESP has resulted in many teachers refusing to use the system for grades. This failure to get even the most basic data into the system results in very little meaningful data in the ESP parent portal. This greatly limits parents' ability to monitor and participate in their children's education. The additional work that district employees are required to complete due to inefficiencies or problems with ESP is substantial. Teachers universally reported that they wasted many hours every week dealing with system delays and the cumbersome user interface.

The district at one time had an SIS user group that met regularly to discuss best practices and desired system enhancements. This group no longer meets, resulting in a lack of communication between users and the IT staff supporting the SIS.

Making changes to a database of a vendor maintained information system is not recommended. Further complicating these changes is the lack of documentation of those changes. Altering the database can cause serious and unintended problems in system performance and reliability. It is possible that the changes made to the database are causing some of the current performance problems. When system updates are provided by the vendor they may or may not be compatible with the changes made locally. The district should make an effort to return the database to its normal, unaltered original configuration.

The student information system is the core of all student data collection, delivery and analysis in any school district. Problems with its use can be costly and far reaching and should be aggressively addressed. Because of the broad nature of expertise required, the district should assemble a committee of content and process experts from around the district. This task force should include but not be limited to teachers, administrators, counselors, data clerks, parents and IT staff. The first task for this committee should be to decide whether to bring in SunGard to repair and streamline the system, upgrade to version 3.0, or start the process of replacing the system. Sample student information system criteria and guidelines are documented in Appendix B.

This project will not be completed quickly, so it is imperative that the district begin immediately, have realistic expectations about timetables, and devote the necessary resources.

Recommendations

The district should:

1. Assemble an SIS committee to evaluate repair, upgrading, or replacement of eSchoolPLUS. Use the samples of guidelines and criteria contained in Appendix B and C to aid the committee in their decision making process.
2. Reconstitute the SIS user group meetings so that end-users can share best practices and develop effective business work-flow processes.

Financial Management System Support

The district uses Escape Online as its financial management system. The district's local computers connect to the county office, where the application host server resides. The county office is responsible for all server upgrades and maintenance, while district IT staff upgrade the local computer software applications. Computer hardware in the human resources and business services offices was replaced approximately three years ago when Escape was first implemented but has not been upgraded since. Users report consistently slow connectivity to the county office servers, and IT reports frustration with the lack of a county office response to the issue. Escape users consistently stated a need for additional and ongoing training. Users say they are self-taught and frequently self-supporting.

FCMAT contacted the Sonoma County Office of Education IT department to discuss the slow connection to the Escape system that was reported by district staff during interviews. The county office was unaware of any problems district staff were having with connectivity speeds to the Escape system. District IT staff should meet with the county office and Escape to determine why connectivity is slow and to develop a remediation plan. Solutions could involve desktop hardware upgrades, network configuration or hardware changes, software version upgrades, server configuration changes, server hardware upgrades and/or network upgrades.

The county office offers many trainings for district staff on the use of the Escape system. A list of past training material can be found on the county office website at http://fb.scoe.org/default.asp?W20 and a calendar of trainings and user group meetings can be found at http://dp.scoe.org/. This information is also available to all Escape users at the home page of the Escape log in screen.

Recommendations

The district should:

1. Audit all computer workstations where Escape Online is used to ensure that they meet the recommended operating specifications. Replace/upgrade any machines that do not meet the standard.
2. Use quality of service rules on the network to prioritize Escape Online traffic.
3. Audit all Escape Online client installations to ensure that staff have current versions of the software.
4. Communicate with the county office and Escape to address any ongoing performance issues that are outside the district's control.
5. Conduct ongoing professional development to ensure that staff know how to properly use the program and understand all district workflow processes and policies. Contact the county office to discuss possible Escape training opportunities.

Email System

The district hosts its own Microsoft Exchange email servers. The software, servers and storage used to provide this service are due for upgrades. One major trend in K-12 education today is the move to hosted services to reduce day-to-day support and recurring annual costs. A hosted email solution generally does not require the purchase of licensing upgrades, server hardware or additional storage and would simplify management and reduce support overhead, thereby reducing annual support costs.

Recommendation

The district should:

1. Evaluate the costs and benefits of migrating to a hosted email service as opposed to upgrading the existing service.

Hardware Installation and Setup

The district does not have defined hardware standards for technology acquisition. School sites receive quotes directly from various vendors and submit them to purchasing, which then often seeks better pricing or lower cost alternatives. This has led to a diversity of hardware across the district. Absent hardware standards, each technology purchase potentially becomes a unique or custom setup and installation that requires more time to install and more complex support. Hardware standards are essential to streamlining and improving initial hardware setup. Many districts have standardized their hardware options, offering users choices while maintaining a reasonable number of makes and models of devices to support.

There is wide variation in how long it takes for new equipment to be set up, ranging from only a few days at the district office to a few months at the school sites. Technology assistants use the software product Clonezilla to install software on computers. This allows a single package or "image" of combined software to be installed on a computer instead of installing each application individually. Clonezilla is an open source solution that works well in small to medium sized organizations but does not scale well to a district such as Santa Rosa. Many districts have moved to remote operating system installation so that technology assistants simply plug in the new hardware to the network and the appropriate operating system and software packages are deployed to a machine based on configurations set at the district office. Remote operating system installations also have the advantage of not being as hardware dependent as image based systems. Given the diversity of district hardware, image management and updating would be simplified.

Recommendations

The district should:

1. Ensure the district technology committee adopts a set of common hardware standards. Review standards periodically and publish them on the IT department's website.
2. Design and implement a purchasing process that supports the standards set by the technology committee.
3. Invest in a systems management and imaging tool to speed deployment and setup of district hardware.

Miscellaneous Software Applications and Support

The district uses several versions of Microsoft Office, resulting in compatibility issues with files sent and received in different Office formats. Standardization on a single version of Microsoft Office across the district would limit these types of issues.

A review of the district-provided software inventory reports revealed that regular system software updates do not occur. Several systems still run Internet Explorer 6 and Adobe Reader 5, both of which are no longer supported by their distributors and could pose security threats if their use continues. Microsoft Office, Java and Firefox are other examples of software applications that have not been updated on many systems and may also pose a security threat. Several management tools are available that would help the IT department keep software applications updated.

Professional development on software applications used by district employees is extremely limited. New employee training is inconsistent depending on the individual department or site. The IT department does not have enough resources or application expertise to provide regular professional development for every software application installed in the district. However, relevant training resources can be made more easily available. Online resources, "how to" documents, step-by-step guides and user groups can be developed to support continuous professional development districtwide. Application experts can assist with creating resources.

The district does not have an education technology staff with responsibility for integrating technology into instruction. This has led sites to rely on vendors and technology assistants for teacher technology training. Teachers expressed frustration with the lack of support for implementing technology in their classrooms. Given the expanding use of technology with Common Core and SBAC online testing, teachers need resources available that have classroom experience and understand how technology can be used in instruction. In response to this, many districts have begun to create teacher technology coaches or technology integration specialists. These teachers on special assignment (TOSAs) assist in educational technology integration and their primary responsibility is to help teachers integrate technology into their daily lessons.

Recommendations

The district should:

1. Standardize its Microsoft Office suite among all users.
2. Evaluate and implement a cross platform enterprise solution for keeping software applications up to date throughout the district.
3. Ensure that the IT department provides tools, training and platforms for departments to create online training resources and build an institutional knowledge base for ongoing professional development.
4. Establish an education technology group in IT to work with teachers in integrating technology into instruction and in support of Common Core, and to coordinate with curriculum and instruction in preparing for the SBAC online assessment.

Student Data Assessment and Accountability

Currently, aggregating district data is a labor intensive and lengthy process. District personnel indicate that reports needed by schools and departments take an unacceptable amount of time to be delivered. The use of eSchoolPLUS data is particularly challenging when its reports must be extracted and combined with those from other systems. The IT department has a large report writing and programming staff. This is a result of the general sentiment that it will always be labor intensive to extract data from eSchoolPLUS and that attempts to get the vendor, SunGard, to remedy the problems have been to no avail. The three other data sources, Online Assessment Reporting System (OARS), Data Quest from CDE, and ESP Solutions data management system also present unique challenges, particularly in combining data or creating longitudinal reports. User defined reports are a practical impossibility. Many central office and school site users suggest that a thorough evaluation of eSchoolPLUS and OARS is warranted.

Absent easily obtained data, there is no practical way for the district to develop formative assessment processes. The IT department does not offer the data necessary to make effective program changes for students or teachers. Decisions regarding classroom innovation are not data driven. This is a concern for many school site personnel. With the approach of SBAC testing, many express concerns about having the resources necessary for its implementation. Plans to address the curriculum and technology requirements for Common Core are not yet evident. The recent SBAC pilot revealed numerous deficiencies, and FCMAT saw no evidence of corrective action to address these problems.

The district does not offer professional development regarding how data can be used to make substantive changes in programs or teaching methods. Teachers, unfamiliar with how formative assessment data can assist in instructional delivery, struggle to improve teaching practices. The Common Core implementation will challenge the district as it attempts to meet benchmarks without critical assessment information. The lack of staff development on classroom technology exacerbates these problems. Resources are distributed unequally within and between schools, which prevents collaboration on instructional delivery methods.

It is an opportune time to evaluate the various instruments used and to work toward better integration of data, particularly with eSchoolPLUS and OARS. The resources that support the labor-intensive student and assessment systems need to be redirected to supporting instruction. This can be accomplished by working with the system vendors to provide better support for data reporting and manipulations.

Recommendations

The district should:

1. Establish an ongoing professional development program on technology and software systems for teachers and staff.
2. Thoroughly evaluate its student and assessment systems, and modify or replace those systems that do not meet district needs.
3. Develop a formative assessment process that informs instruction.
4. Develop assessment strategies and support that will address the needs of Common Core and SBAC testing.

E-Rate

E-Rate is a federal discount program administered through the Federal Communications Commission to provide discounts to schools and libraries to offset the costs of telecommunications services, related equipment, and Internet access. These discounts are grouped into Priority 1 and Priority 2 categories and are discounted based on the number of students eligible for the national school lunch program. Priority 1 discounts are provided for telecommunication and Internet services and are guaranteed for all districts. Priority 2 discounts are provided for internal connections and their maintenance. Priority 2 includes such items as wiring, network hardware and other network components required to deliver Internet throughout a school. Priority 2 discounts are not guaranteed for all schools and are issued until the annual funds are depleted. In recent years schools below 85% free and reduced lunch counts were rarely funded for Priority 2 discounts. Even if a district as a whole is ineligible for Priority 2 subsidies, individual schools, based on need, can be "bundled together" for Priority 2 eligible projects such as cabling and network equipment. The Priority 2 portion of the program is at risk of being defunded because the demand exceeds the available funds.

The consulting firm of Aarrestad Gjervik assists the district in managing the filing requirements and application strategies for E-Rate. The district has successfully claimed the available Priority 1 discounts, but has not taken advantage of Priority 2 discounts.

The elementary district has seven schools with over 80% of students eligible for free and reduced meal subsidies. Those schools could be bundled as a consortium with a higher potential of getting funded. Four schools could be bundled at approximately 90% eligibility. At these sites, the district would only be responsible for 10% of the costs for wiring, network hardware and maintenance services. Given the possibility of defunding Priority 2 discounts, the district should maximize its Priority 2 funding opportunities.

Recommendations

The district should:

1. Evaluate the effectiveness of the current E-Rate consultant and determine if a change should be made to optimize funding.
2. Apply for Priority 2 discounts to subsidize eligible needed services and equipment.

Wireless Technologies

The district does not have a centrally managed wireless network and cannot provide ubiquitous access and high density wireless service support. Wireless access is a critical infrastructure component of a modern-day learning environment and requires an effective wireless strategy. The district is installing individual access points that are not centrally managed or configurable and are funded by local sites. As a result, coverage is insufficient to support mobile learning districtwide. The district should commit to providing ubiquitous wireless as a core IT function to all sites and not rely on site based decision making to prioritize wireless network funding. The district should also upgrade the wireless system to be centrally managed and configured, with the goal to eventually install one access point per classroom. This will allow the district to scale out the wireless infrastructure to support classroom instruction and SBAC testing.

Support for all wireless initiatives is provided by one network technician who is also responsible for supporting all wired network systems and all telecommunications systems. This support level is unsustainable for the growth of this technology.

The district's approach to wireless networks and wireless technology has resulted in inequitable distribution of technology, end user frustration, and generally poor results. Some sites are attempting to utilize Apple iPads with various apps for education as the curriculum, while others use Google Chromebooks with Google Apps, and others use netbooks with completely different curricular selections. This lack of standardized practice results in an environment where support, professional development and measuring the success and/or failure of a program are virtually impossible.

The ability to support 1-to-1 wireless device coverage in each classroom and teaching space will be necessary as the district adopts the Common Core Standards and Smarter Balanced Assessments. This coverage will need to be completely reliable and robust enough to support demanding services like video and audio streaming. The addition of wireless networks and devices will not completely replace the existing wired networks and devices but will augment them.

Recommendations

The district should:

1. Plan for comprehensive wireless coverage at all campuses. Wherever possible, use E-Rate Priority 2 discounts to help fund this initiative.
2. Consider wireless network access as a core IT service and provide district wide funding for ubiquitous wireless at all sites. Move to a centrally managed wireless solution prior to scaling out the district wireless network to support the reliable integration of technology into instruction.
3. Hire one additional network technician to support network technologies.
4. Provide guidance and training regarding wireless technology use in the classroom, and establish standardized practice with reasonable goals and expectations regarding the use of wireless devices and their integration with curriculum used in the classroom.

Board Policies for Technology

The board has adopted policies for technology planning, website development, student access to technology, staff development and a wide range of other technology-related items. The administration has produced regulations that are intended to implement these policies. Unfortunately, no process exists to evaluate the extent to which policies are followed. Most administrators are unaware of the policies or regulations. The acceptable use policies (AUP) for staff and students are dated. No clear cut effort is made to maintain the policies or to ensure that every student and staff member has signed a policy. When FCMAT asked staff, "Have you signed an Acceptable Use Policy?" the answer often was, "I think I did a few years ago."

An AUP should be mandatory and should be updated and signed yearly. An AUP also is needed for IT staff members who have access to all sensitive student information. Those who manage and use the video surveillance systems should be made aware of the appropriate use of the systems and should sign an AUP specifically designed for them.

Recommendations

The district should:

1. Establish a review process for board policies and administrative regulations to ensure compliance with intended outcomes.
2. Develop and maintain AUPs that reflect current and emerging technologies.
3. Ensure that every employee and student signs an AUP annually.
4. Assign the IT department to manage the AUP process and coordinate with Human Resources to ensure all employees sign the document.

Catastrophic Event or Security Breach

The district's strategy for backing up critical data is incomplete and outdated. Servers are backed up via tape archive on a regular schedule. Server administrators have restored data and servers from tape archives in the past, but no regular testing is done. There is no regular schedule for replacing tapes, and they are regularly overwritten. Backups and other administrative functions of the core server environment are handled by IT personnel using the shared "Administrator" login rather than with individual logins that have been assigned Administrator rights.

Without a clear backup and restoration plan that is well-documented and rehearsed by IT staff, the district is at risk for critical data loss. Staff should not wait until an IT outage to discover problems with the data restore plan, process or infrastructure. All relevant staff should be cross-trained to perform data and system restoration in case some staff are not available during a crisis. Relying on one staff member to perform these critical functions may be easier and more efficient when all systems are operating normally, but cross-trained staff are essential in case of a serious system outage or catastrophic event.

The ability to restore data and servers from valid backups is essential to business continuity. If there is a hardware or software failure, or a catastrophic security breach, the IT department must be able to restore data and services to users in an acceptable period of time.

To develop a comprehensive backup plan, the IT staff must identify all potential failure points that could lead to extended system outage and/or serious data loss. These points might include databases for the SIS, NutriKids, Active Directory, Exchange Email servers and data, firewall hardware and configurations, and core network hardware and configurations. Outages to any of these systems would have wide-ranging impacts to instruction and mandatory reporting processes. Once the potential failure points are identified and cataloged, a backup plan must be implemented for each system and key personnel identified as the owners of that system's backup plan. The backup plan must identify the schedule of the required backups (daily, weekly, etc.) and any required hardware required (spare network hardware, disk space, etc.). The plan must also clearly detail the district's backup retention policy. The backup retention policy refers to both disk and tape rotation schedules and must be decided upon in conjunction with the key stakeholder and end users of data and systems. The data owner should specify the data retention length, which in many cases may be dictated by state or federal laws or board policies. It is then the responsibility of the appropriate system owner to delete backups that are outside the range of the retention length to make space for new backups.

The appropriate system administrator must diligently perform the system and data backups outlined in the comprehensive backup plan. Most if not all of these backup functions can be scheduled to execute automatically, but a backup log and regular reviews of data backups are necessary to ensure that the automated systems do not fail unexpectedly and without being noticed.

IT staff also should schedule time to perform validation testing of backups to all essential systems and data. This should include:

- Database restoration testing to ensure that the data backups of essential databases can be restored in the event of data corruption, data deletion, etc.
- Network hardware restoration to validate the backups of stored configuration files for critical portions of the district's network including core switch configurations, router configuration, Internet content filter configurations and rule sets, and firewall

configurations and rule sets. The network administrator should be able to restore to backup hardware with minimal downtime.

- Complete system restoration. The IT staff should periodically test and practice the ability to restore servers as well as data from tape backup as part of the comprehensive backup plan and the disaster recovery plan.

After an event such as a fire or earthquake it may be necessary to restore essential data, servers and services at an offsite location. This type of disaster recovery planning should be done in collaboration with district stakeholders including the superintendent, business office, human resources, public relations, and legal counsel. The district should identify what systems must be restored and reasonable timeframes. Accommodations will need to be made for remote access into these systems. The district will need to identify where backups will be stored so that the ability to restore data and systems is isolated from the effects of the event causing the outage. The district will need to identify where and how systems will be brought back online. It is essential for procedures and manuals to be stored at this backup location along with access to data backups.

Recommendations

The district should:

1. Develop a comprehensive backup plan. Share this plan with all key stakeholders to ensure that this plan meets the district's needs.
2. Perform backups of critical servers, network hardware, and data according to the schedule and priorities in the district's comprehensive backup plan.
3. Perform periodic database and server restore tests for ongoing process validation.
4. Have a disaster recovery plan in place that includes the storage of critical data backups as well as restoration procedures at an offsite location.
5. Effectively cross-train server and network administrators to ensure that the necessary knowledge and skill sets to perform effective recovery of key systems reside with more than one individual.
6. Ensure that the data backups of critical databases can be restored in the event of data corruption, deletion, etc.
7. Validate the backups of stored configuration files for critical portions of the district's network including core switch configurations, router configuration, Internet content filter configurations and rule sets, and firewall configurations and rule sets.
8. Ensure that IT staff periodically test and practice restoring servers and data from tape backup as part of the comprehensive backup plan.
9. Develop a disaster recovery plan with key stakeholders that identifies what critical systems must be restored at an offsite location after a catastrophic event. Establish reasonable timetables for system restoration.

10. Ensure that all relevant IT staff members are cross-trained in data and system restoration.

11. Store procedures and manuals at the district's backup location along with data recovery tapes or disks and hardware.

SBAC Testing

As part of the Common Core State Standards implementation, California has joined the Smarter Balanced Assessment Consortium (SBAC) and is in the process of piloting online computer adaptive assessments for all students in 3rd-8th grade and 11th grade in English language arts (ELA) and mathematics. SBAC testing requirements represent a significant technology challenge for districts. SBAC released a Technology Readiness Tool and a Technology Readiness Calculator to help districts calculate the number of computers and system requirements needed to successfully administer the tests in a given testing window.

While the district participated in the SBAC scientific and volunteer pilots, the interim assessment director is relatively new in the position and is not fully up to speed on the district's preparedness for SBAC. The IT department does not appear to have engaged with the curriculum department in meaningful conversations around requirements and planning for SBAC online assessments. The IT department has not completed the SBAC Technology Readiness Tool (http://www.cde.ca.gov/ta/tg/sa/sbac-itr-index.asp), which would provide needed insight into the readiness of each school to administer the online assessments. FCMAT reviewed the existing PC hardware and software inventory along with the district's technology plan, and it appears that much of the district's student technology will need to be upgraded to meet recommended minimums for administering the assessments online.

The district has no automated tools to easily deploy and install software applications, so deployment of the secure test browser will be a challenge The district's Internet connection may also need to be upgraded to support the numbers of students being tested simultaneously, depending on test schedules and number of students testing per site. The district should use the tools provided by the SBAC to assess the district's readiness for online testing.

Additionally, in the Technology Strategy Framework document released on 2-6-13 (http://www.smarterbalanced.org/wordpress/wp-content/uploads/2011/12/Technology-Strategy-Framework_2-6-13.pdf), SBAC states, "...all districts interviewed operated with an 8:1 to 11:1 student-to-computer ratio and were able to manage processing all students in a three-to-four-week assessment window." This student to computer ratio should be considered a minimum goal to support administering SBAC online assessments in the future. Other suggestions from SBAC include:

- Plan to migrate from Windows XP to a newer OS within two years of Microsoft's support end date of April 2014.
- Upgrade computers to at least 1 GB of internal memory.
- Ensure that devices have a visual display of no less than 9.5-inch screen dimension (10-inch class) supporting at least 1024x768 resolution.
- Be prepared to operate student testing on secure browsers.
- Once the assessment is running, estimates show it draws approximately 5–10 Kbps per student in the current testing. Ensure that the district has adequate network performance and bandwidth to support these needs.

CDE Resources for SBAC - http://www.cde.ca.gov/ta/tg/sa/smarterbalanced.asp

In addition to preparing for SBAC assessments, districts also need to integrate technology into instruction in support of Common Core. The district does not currently have staff dedicated to assisting teachers with integrating technology into their instructional practice on a regular basis.

Many districts have realized the necessity of this function and are creating professional development coordinator and technology integration specialist teacher on special assignment (TOSA) roles in support of their Common Core implementation strategies.

Recommendations

The district should:

1. Assess bandwidth and computer readiness for each school site by completing the SBAC Technology Readiness Tool.
2. Upgrade or replace existing computer systems that will be used for SBAC testing that do not meet the SBAC guidelines with systems that support the recommended minimums for SBAC administration.
3. Develop a plan to deploy and update the SBAC secure browser districtwide.
4. Develop a plan, budget and support resources to increase student to computer ratios to support administering SBAC online assessments in the allotted window.
5. Ensure that the IT department engages the curriculum and instruction department in discussions regarding SBAC readiness and technology to support learning and assessment for Common Core.
6. Begin building education technology capacity to support teachers in integrating technology into Common Core by creating and staffing an education technology support team in the IT department.

Appendices

Appendix A

Study Agreement

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

FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
STUDY AGREEMENT
April 25, 2013

The Fiscal Crisis and Management Assistance Team (FCMAT), hereinafter referred to as the team, and the Santa Rosa City Schools, hereinafter referred to as the district, mutually agree as follows:

1. BASIS OF AGREEMENT

The team provides a variety of services to school districts and county offices of education upon request. The district has requested that the team assign professionals to study specific aspects of the Santa Rosa City Schools 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.

The district is composed of the Santa Rosa Elementary School District (grades K-6) and the Santa Rosa High School District (grades 7-12) and operates with a common administration and board of trustees. The district is requesting a comprehensive analysis of its current state of technology including hardware, software, professional development, departmental staffing, student assessment and accountability requirements and the use of technology.

2. SCOPE OF THE WORK

A. Scope and Objectives of the Study

The scope and objectives of this study are as follows:

1. Evaluate the organizational structure, staffing, workflow, efficiency and duties of technology department personnel. This component will include a review of technology-related board policies, administrative procedures, and operational practices, technology master plan and educational master plan. The team will

evaluate the workflow and distribution of the department's technology-related duties and provide recommendations for improved efficiency, if any and will include the following:

a. User, desktop and workstation support
b. Network administration
c. Website development and support
d. E-mail support for district and site staff
e. Student attendance system
f. Financial reporting system
g. Hardware installation and setup
h. Application software used at district and sites
i. Technology in the classrooms, and student data assessment and accountability protocols
j. E-Rate administration and support
k. Wireless technologies

2. Review the technology department's workflow and provide recommendations to improve efficiency that may reduce costs or require additional positions. Any additional positions recommended will include sample job descriptions if they are position classifications not already established by the district.

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

3. Evaluate the department's ability to implement, use and support technology used to provide remote training to staff and school sites. This component will include reviewing the district's preparedness for current and emerging technology. The team will provide recommendations to improve implementation and support.

4. Review the delivery of educational technology services to district classrooms, focusing on the quality and suitability of infrastructure and of educational technology software selection, implementation and support. Evaluation will be based on staff interviews and network documentation provided by the district. The team will provide recommendations for improved quality and efficiency, if any.

5. Review the district's business continuity planning including design of security and safeguards for data in the event of a catastrophic event or security breach.

6. Review and provide recommendations regarding professional development training for department staff.

B. Services and Products to be Provided

1. Orientation Meeting - The team will conduct an orientation session at the district to brief district management and supervisory personnel on the team's procedures and the purpose and schedule of the study.
2. On-site Review - The team will conduct an on-site review at the district office and at school sites if necessary.
3. Exit Report - The team will hold an exit meeting at the conclusion of the on-site review to inform the district of significant findings and recommendations to that point.
4. Exit Letter – Approximately 10 days after the exit meeting, the team will issue an exit letter memorializing the site visit and 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, FCMAT will return to the district at no cost six months after completion of the study to assess the district's progress in implementing the recommendations included in the report. Progress in implementing the recommendations will be documented to the district in a FCMAT management letter.

3. PROJECT PERSONNEL

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

A. Scott Sexsmith	FCMAT Management Analyst
B. Andrea Alvarado	FCMAT Management Analyst
C. To be determined	FCMAT Consultant
D. To be determined	FCMAT Consultant
E. To be determined	FCMAT Consultant

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

4. PROJECT COSTS

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

A. $500 per day for each team member while on site, conducting fieldwork at other locations, preparing and presenting reports, or participating in meetings. The cost of independent consultants will be billed at the actual daily rate based on the provisions of Education Code section 84041.

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

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

Based on the elements noted in section 2 A, the total estimated cost of the study will be $19,000.

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

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

5. RESPONSIBILITIES OF THE DISTRICT

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

B. The district will provide the following if requested:

1. A map of the local area.
2. Existing policies, regulations and prior reports that address the study scope.
3. Copy of all job descriptions for the technology department
4. Copy of the Educational and Technology Master Plans
5. Current or proposed organizational charts for the district and technology department
6. Current and two prior years' audit reports.
7. 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.

8. Documents should be provided in advance of field work; any delay in the receipt of the requested documents may affect the start date of the project. Upon approval of the signed study agreement, access will be provided to FCMAT's online SharePoint document repository, where the district will upload all requested documents.

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

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

6. PROJECT SCHEDULE

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

Orientation:	May\June 2013
Staff Interviews:	to be determined
Exit Meeting:	to be determined
Preliminary Report Submitted:	to be determined
Final Report Submitted:	to be determined
Board Presentation:	to be determined, if requested
Follow-Up Support:	if requested

7. CONTACT PERSON

Name: Douglas Bower, Associate Superintendent of Business Services
Telephone: (707) 528-5381
E-mail: dbower@srcs.k12.ca.us
SRCS BOARD APPROVED: APRIL 24, 2013

4-25-13
Douglas Bower, Associate Superintendent Date
Santa Rosa City Schools

April 25, 2013
Anthony L. Bridges, CFE Date
Deputy Executive Officer
Fiscal Crisis and Management Assistance Team

Appendix B

Sample Student Information Systems Criteria and Guidelines

1. What is the district specifically hoping to get from a SIS system? At a minimum, the district should consider the following SIS system functional criteria:
    a. Attendance
        i. California attendance formulas are required
        ii. Alternative programs, summer school, hourly programs, special education, and after school programs must be accounted for
        iii. Automatic attendance letter generation?
    b. Demographics
        i. How does the district want to handle mandatory permanent record data?
    c. Enrollment
        i. Does the district require centralized or distributed registration?
        ii. Is the district interested in online registration?
    d. Discipline
        i. Discipline referral process control?
        ii. Discipline letter processing?
        iii. Mobile apps for discipline referral outside of the classroom?
    e. Medical Reporting
        i. CA approval for transfer of electronic student medical records?
        ii. CA compliant immunization verification.
        iii. How is medical alert information presented to relevant staff?
    f. Scheduling
        i. Master schedule processing
        ii. Automatic matriculation of students
        iii. What is the process for entering and updating course requests and alternates?

iv. What is the process for moving a student or group of students between classes or sections?

v. What is the process for scheduling new students in classes after the beginning of the term?

vi. What is the process for a school to see the next school year's student's data for scheduling purposes before the end of the current school year?

vii. Are multiple school year scheduling options required?

g. Grades and Transcripts

i. What types of report cards are required?

ii. Does the district require a system that supports narrative comments?

iii. How does the system need to handle cumulative GPA calculation?

iv. How does the district need to handle transcript printing, processing and delivery?

v. Does the district need the SIS system to overtly identify missing course and credit requirements for graduation?

h. Assessments

i. How does the system need to handle pre-id files?

ii. How does the system need to store, report and display standardized test data?

iii. Does the district require the ability to view and report on the progress of students from year to year by student, classroom and school?

i. Gradebooks

i. How will the district evaluate the validity and value of the grade entry process of different systems?

ii. Does the district intend to require a standard and uniform gradebook across the district?

iii. Does the district require integrated online assessment capabilities?

iv. Does the district require gradebook data that is automatically published into the Student and Parent Portals?

j. Parent Portals

i. What registration process for parent does the district require? (Self-registration, facilitated, etc.)

ii. What languages does the district require for display of the parent portal?

iii. Does the district want parents to be able to update information such as address, phone numbers, email address, emergency contact, etc.?

iv. Does the district desire the ability for parents to make online payments?

v. Does the district Desire the ability for parents to fill out Free and Reduced meal applications through the portal?

k. Student Portals

i. What information does the district want to be available for students to view and/or update within the student portal?

ii. Does the district desire the ability for students to submit assignments through the student portal?

iii. Does the district desire the ability for students to register for courses online through the student portal?

iv. Does the district need the student portal to provide online collaboration space for students?

l. Reporting

i. What are the district's processes and procedures for CALPADS and other mandatory reporting?

ii. What are the district's ad hoc reporting requirements?

iii. Does the district require the ability to provide meaningful and flexible data dashboards to key stakeholders?

iv. Does the district desire the ability to set thresholds for defining at risk students and then notifying key stakeholders when those thresholds have been exceeded?

v. What options for printing labels, envelopes, letters, etc. are required?

m. Logging and Security

i. Does the district desire access to the SIS system from home for teachers, administrators, counselors, etc.?

ii. Does the district require change logs and/or version control for critical data?

n. 3rd Party Program integration

i. What systems will need to be seamlessly integrated into the SIS in order to eliminate multiple data entry points? (OARS, NutriKids, Follett, etc.)

ii. Can the SIS vendor facilitate all required 3rd party software integration?

Appendix C

Sample Job Descriptions

Norwalk-La Mirada Unified
Director of Assessment and Evaluation

DIRECTOR OF ASSESSMENT AND EVALUATION

I. JOB DESCRIPTION
The Director of Assessment and Evaluation is responsible to develop and maintain a system of data collection and management for educational evaluation: to supervise and coordinate the District's testing, evaluation and research activities related to student achievement and success, program effectiveness, categorical programs, and organizational development; provide K-12 staff development in the areas of assessment and evaluating, work with stakeholders to develop the district assessment plan, sites, and to perform related duties as assigned.

II. ADMINISTRATIVE RELATIONSHIPS
Directly responsible to the Area Superintendents.

III. MAJOR DUTIES AND RESPONSIBILITIES
§ In collaboration with the Area Superintendents, provide K-12 staff development in the area of assessment and evaluation, and coordinate the District testing programs and prepare reports on results.
§ Work closely with school staff to analyze a variety of assessment data and plan next steps for instruction.
§ Collaborate with stakeholders and conduct student, staff, and parent surveys as required.
§ Collaborate with a variety of stakeholders as it relates to assessment and evaluation.
§ Coordinate the integration of curriculum and technology.
§ Provide direction for the design, piloting, revision, implementation and standardization of locally developed assessment tools which correlate with district K-12 curriculum standards.
§ Coordinate the development, implementation, and scoring of student writing samples.
§ Build and maintain a research-based library of current assessment and evaluation best practices.
§ Foster innovative classroom assessment strategies for teachers to employ on a daily basis.
§ Collaborate with teacher/administrators on design and implementation of criteria for exhibitions of student achievement and development of student portfolios.
§ Provide and facilitate training of teachers and administrators on multiple assessments.
§ Recognize and promote informal teacher assessment and testing practices.
§ Gather informal measures of student growth and program effectiveness.
§ Report findings through quantitative/qualitative means (case studies, interviews, longitudinal data, surveys, narratives)
§ Establish local norms for standardized, commercial testing, aggregate results over years and re-norm periodically.
§ Provide leadership in the staff development and implementation of classroom, school, and district criteria and rubrics to match specific units of learning.
§ Communicate assessment practices effectively throughout the district.
§ Establish protocols for examining student work across the district.
§ Collaborate with ITS and school sites to develop a system for Data Driven Decision Making.
§ Perform other related duties as assigned.

IV. EXPERIENCE AND TRAINING
§ Knowledge of K-12 curriculum and how to design and present staff development in assessment and evaluation of student learning.
§ Knowledge of research design and methods, techniques of data collection, organization, analysis and interpretation, statistical methods and graphic and narrative representation of data, data processing and electronic information systems related to educational program evaluation, test development, scoring and interpretation, oral and written communication.
§ Ability to conduct educational research, collect, analyze, and interpret data, organize, write and prepare reports and make oral presentations; plan, coordinate, direct and evaluate the work of others; communicate effectively both verbally and in writing; establish and maintain effective working relationships with others, facilitate and coordinate group meetings.

§ Experience in such areas as student data collection, statistical analysis, testing, research and evaluation in an educational setting.

V. QUALIFICATIONS
§ A valid California Teaching or Pupil Personnel Services Credential
§ A valid California Administrative Credential.
§ Master's Degree from an accredited institution of higher learning.
§ Ability to work effectively in a multi-ethnic community.

VI. DESIRABLE QUALIFICATIONS
§ Site administrator experience
§ Bilingual

VII. WORK YEAR
§ 12 Months

VIII. PHYSICAL, MENTAL AND ENVIRONMENTAL DEMANDS:
Physical:
Sitting, walking level surface, bending, use of both legs; fine coordination, wrist/arm motion, use of all fingers, use of both hands; lift objects 1-25 lbs., carry/push 1-25 lbs.; color vision, near vision, night vision, use of both eyes, normal hearing, distinguish sounds in transmission, speaking.

Mental:
Stress of deadlines, stress of interpersonal conflict, normal work standards stress, ability to work with interruption, concentrate for long periods of time, reading, interpreting codes, laws, policy, calculate, perform routine math process, memorize and recall objects, people, analyze problems and generate alternatives, reconcile apparent ambiguities, solve multi-variant problems.

Working Conditions:
Work in an office environment where overtime is required during peak season.

VIII. APPLICATION PROCEDURE
§ Candidates send letter of interest, application, resume and three letters of recommendation and/or placement file to: Norwalk-La Mirada Unified School District, c/o Robert G. Diaz, Ph.D., Human Resources Division, 12820 Pioneer Blvd., Norwalk, CA 90650-2894. Phone (562) 868-0431, Ext. 2127. To download an Administrative Application, go to www.nlmusd.k12.ca.us

CAPISTRANO UNIFIED SCHOOL DISTRICT
San Juan Capistrano, California

DIRECTOR IV, EDUCATIONAL TECHNOLOGY

DEFINITION

Under direction of the Executive Director of Technology and Information Systems, provides leadership and guidance in the implementation of district wide educational technology; provides and directs technical assistance and support to schools in a variety of computer programs and functions; plans, organizes, recommends and directs district wide training, software adoptions and implementation; oversees application systems and websites.

EXAMPLES OF DUTIES

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

DIRECTOR IV, EDUCATIONAL TECHNOLOGY
Page 2

QUALIFICATIONS

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

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

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

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

11/98 Revised 7/03; 9/03; 3/04, 6/05; 2/06; 11/09; 3/13

Range 58

CAPISTRANO UNIFIED SCHOOL DISTRICT
San Juan Capistrano, California

DIRECTOR IV, TECHNICAL SERVICES

DEFINITION

Under direction of the Executive Director of Technology and Information Services acts as decision-maker related to the technology vision and information technology (IT) management of the district; ensures the smooth and effective operation of the extended IT infrastructure for all district facilities; works closely with department staff senior management to help IT deliver strategic benefits to the business side the district and educational benefits of the students; provides leadership and direction for network technology and technical services; coordinates work with user departments and other TIS units.

EXAMPLES OF DUTIES

- Provides leadership and direction in technology planning, equipment acquisition, assistance to schools and establishment of standards for hardware and software.
- Plans, schedules, coordinates and supervises personnel engaged in network design, installation, and maintenance.
- Participates in development and implementation of District and department technology goals, priorities, standards, and procedures.
- Coordinates work with user departments and other TIS units.
- Oversees the management of computer installation, repair, maintenance services, technical training, and customer support.
- Supervises and evaluates the computer and network support staff for performance review and advancement.
- Determines the level and nature of specialized training required to keep staff current with emerging technologies; implements training as appropriate.
- Makes recommendations for department level positions.
- Prepares bid requests, evaluates proposals, and oversee vendor contracts.
- Assists in the preparation and oversite of departmental budgets.
- Performs other duties as assigned.

QUALIFICATIONS

Knowledge of:

Network server operating systems; workstation hardware and software; procedures and techniques for ongoing maintenance and support of computer users; wide area network technologies including routers, video monitoring, and telephone systems; local area network technologies including wiring, hubs, and switches; emerging trends in networking as it applies to educational technology.

Ability to:

Coordinate and direct network design, implementation, maintenance, and troubleshooting; communicate clearly and concisely, orally and in writing; incorporate new technology into future hardware and network service delivery plans; work with vendors and other third parties to coordinate installations, solve problems, and complete projects; communicate with multiple stakeholder groups; comply with the District's customer service standards, as outlined in Board Policy.

EXPERIENCE AND EDUCATION

Minimum of five years' progressively responsible experience in the areas of systems engineering, networking, communications, and operating systems. Experience equivalent to graduation from college with a Bachelor's Degree in information technology, business administration, computer science, or related field. Valid Driver License required.

Revised: 5/01; 6/06;10/08;11/09

JOB DESCRIPTION
Grossmont Union High School District

EDUCATIONAL TECHNOLOGY SPECIALIST

Purpose Statement:

The job of Educational Technology Specialist is done for the purpose/s of interfacing with teachers to facilitate the integration of knowledge into teaching and learning by developing and conducting training classes on application software products; maintaining training facility resources and equipment; providing input and recommendations regarding software purchases and both site and district technology plans; and providing input/insight on ways to increase teachers' use of technology as it positively impacts student performance in the classroom.

This job reports to Director, Educational Technology

Essential Functions

- Collaborates with BTSA program administrators to plan and manage technology requirements for the purpose of assisting all teachers participating in the BTSA program.
- Designs and leads professional development programs for the purpose of increasing student performance using technology.
- Develops computerized solutions (e.g. customizing and/or designing electronic documents, creating and/or updating user databases, specialized queries, etc.) for the purpose of providing users with information customized to their specific needs.
- Develops user job aids and online library of supplements for the purpose of enhancing staff ability to utilize software application.
- Installs instructional software applications for the purpose of providing operational computer technology and instructional materials.
- Maintains a variety of files, documents and/or records (e.g. reports, logs, databases, agreements, licenses, etc.) for the purpose of documenting activities, providing written, and complying with mandated requirements.
- Maintains department websites and MySQL database for the purpose of delivering service in conformance with established regulations.
- Maintains instructional software applications for the purpose of providing up-to-date resources for classroom use.
- Oversees assigned projects and/or program components (e.g. grant tracking, training facility inventory, electronic lesson plan database, teacher survey, etc.) for the purpose of ensuring availability of information and/or materials and delivering services in compliance with established guidelines and mandated requirements.
- Participates in developing and monitoring districtwide software standards for the purpose of minimizing costs and ensuring data compatibility.
- Prepares documentation (e.g. reports, instructions, memos, etc.) for the purpose of providing written support and/or conveying information.
- Recommends computer hardware and software application acquisitions for the purpose of assisting with the design and implementation of the district master plan for technology.
- Trains certificated staff in the use of Instructional and District standard software products for the purpose of improving work efficiency and effectiveness by enhancing the ability to use new and/or existing software.
- Trains new employees on district data & communicating protocols and acceptable use policies for the purpose of ensuring the efficient use of District technology and compliance with District policies.

Other Functions

- Assists other personnel as may be required for the purpose of contributing to the efficiency and effectiveness of the work unit.

Job Requirements: Minimum Qualifications

Skills, Knowledge and Abilities

SKILLS are required to perform multiple, technical tasks with a need to periodically upgrade skills in order to meet changing job conditions. Specific skills required to satisfactorily perform the functions of the job include: operating standard office equipment using pertinent software applications including web page editing programs such as Dreamweaver and web development using server-side scripting in PHP and MySQL; preparing and maintaining accurate records; planning and managing projects; strong writing ability; and instructional design skills.

KNOWLEDGE is required to perform algebra and/or geometry; read technical information, compose a variety of documents, and/or facilitate group discussions; and solve practical problems. Specific knowledge required to satisfactorily perform the functions of the job includes: CA State credentialing requirements related to technology, methods, procedures, materials and techniques used in the installation and maintenance of computer and computer systems including both hardware and software; create multimedia and digital video presentations and promotions; policies, regulation and guidelines as they relate to use of software (specifically, copyright laws and the use of licensed equipment and materials); and educational and classroom management software.

ABILITY is required to schedule a significant number of activities, meetings, and/or events; gather, collate, and/or classify data; and consider a number of factors when using equipment. Flexibility is required to work with others in a wide variety of circumstances; work with data utilizing specific, defined processes; and operate equipment using a variety of standardized methods. Ability is also required to work with a significant diversity of individuals and/or groups; work with data of varied types and/or purposes; and utilize a wide variety of types of job-related equipment. In working with others, problem solving is required to analyze issues and create action plans. Problem solving with data frequently requires independent interpretation of guidelines; and problem solving with equipment is moderate. Specific abilities required to satisfactorily perform the functions of the job include: adapting to changing work priorities; communicating with diverse groups; meeting deadlines and schedules; and working as part of a team, and ability to mentor teachers.

Responsibility

Responsibilities include: working under limited supervision using standardized practices and/or methods; leading, guiding, and/or coordinating others; and operating within a defined budget. Utilization of some resources from other work units is often required to perform the job's functions. There is a continual opportunity to impact the Organization's services.

Working Environment

The usual and customary methods of performing the job's functions require the following physical demands: occasional lifting, carrying, pushing, and/or pulling; some stooping, kneeling, crouching, and/or crawling; and significant fine finger dexterity. Generally the job requires 60% sitting, 20% walking, and 20% standing. This job is performed in a generally clean and healthy environment.

Experience Job related experience within specialized field is required.

Education Targeted job related education that meets organization's prerequisite requirements.

Required Testing

As required for position

Certificates & Licenses

Valid State Driver's License & Evidence of Insurability
Advanced training in Educational Technology

Continuing Educ. / Training

None Specified

Clearances

Criminal Justice Fingerprint/Background Clearance
TB Clearance

FLSA Status	Approval Date	Salary Grade
Non Exempt	6/15/2006	Unit II 62

EL DORADO COUNTY OFFICE OF EDUCATION

CLASS SPECIFICATION

CLASS TITLE: **Help Desk Technician - III**

Job Purpose Statement: Under General supervision of the Director of Information Services, position is responsible for meeting the expectation of both internal and external customers in a call center environment. Primary responsibility is user support and customer service. Be present and visible in the Help Desk area and available to users requiring technical assistance. Operates audio-visual and related equipment; assists school personnel in setting up and operating such equipment. Guides the customer regarding the use of a broad range of products, offerings, and services. Provides identification, prioritization, and resolution of problems following well-defined guidelines and procedures. Performs backup of critical data files. Prepares progress reports for work performed.

Distinguishing Characteristics:

Help Desk Technician III – Demonstrates a mastery of knowledge and skill set. Requires only follow up on most tasks.

Essential Job Functions:

- Respond to questions from callers and walk-ins; remotely assist staff with technology problems in offices and classrooms for the purpose of resolving and/or clarifying problems.
- Learn fundamental operations of commonly used software, hardware, and other equipment for the purpose of assisting customers.
- Follow standard Help Desk operating procedures; accurately log all Help Desk contacts using call tracking software for the purpose of timely and efficient resolution of problems.
- Accept general responsibility for the computer data center and ensure that it is ready for use, systems up and available, stock paper and toner in printers for the purpose of efficient use of facilities.
- Become familiar with available help resources; stay updated on technology changes or problems for the purpose of assisting customers.
- Operate computer to produce, print, and sign vendor and payroll checks, prepare/print check registers for the purpose of ensuring distribution of funds and payroll.
- Analyzes comparable equipment for the purpose of recommending equipment purchases.

- Assists EDCOE staff and outside agencies with video-taping for off-air, live events, and copying for the purpose of supporting them in the completion of their work activities.
- Sets up and runs sound systems for special events for the purpose of providing delivery of media.
- Makes masters and distribution copies of educational programs for the purpose of maintaining a film and video library.
- Become familiar with EDCOE policies, services, and staff for the purpose of effective communication.
- Direct calls to appropriate EDCOE staff as necessary for the purpose of resolving problems.
- Setup of VOIP phones.

Job requirements - Qualifications

Education: High school diploma or equivalent. Education at a level to demonstrate the ability to perform the duties and responsibilities as described.

Experience: One year of increasingly responsible computer applications and systems analysis experience in a help desk environment. Experience in assisting an Audio Visual/Computer Technician to carry out the duties and responsibilities of the class or experience maintaining and repairing audio visual and computer components. Demonstrated competency in systems documentation. A-1 computer certification highly desirable.

Skills, Knowledge and/or Abilities:

Skills to Answer staff questions in person and via phone on all EDCOE supported applications; Troubleshoot computer problems; Determine source of computer problems (hardware, software, user access, etc.); Advise staff on appropriate action; Serve as liaison between staff and the technology department to resolve issues; Work one-on-one with staff on application projects; Document resolutions for future reference; Follow written directions to produce reports and print checks; Perform hardware and software installations; Provide on-the-job training to new department staff members; Provide computer orientation to new EDCOE staff.

Knowledge of Concepts of computer and network operating systems, scheduling and applications; Terminology and practice of financial and statistical work; Concepts of data storage and communications; Principles, practices, and techniques in the installation, maintenance and troubleshooting of hardware and software; operation of audio visual and computer components; tools, materials, equipment and procedures used in the

repair and maintenance of audio visual and computer components; safety practices; billing practices.

Abilities to Sit for prolonged periods, maintain and verify completeness of records, meet schedules and deadlines, orient others in equipment operations, establish and maintain effective working relationships, communicate with persons with varied cultural and educational backgrounds, and communicate in oral and written forms.

Licenses, Certifications, Bonding, and/or testing required: TB test clearance, Criminal Justice fingerprint clearance. Required to operate own vehicle during the course of employment, must possess a valid California Driver's license and evidence of insurability. Skills test may be administered during selection process.

Schedule D, Range 35
Approved by Personnel Commission 6/11, 12/12/12

CAPISTRANO UNIFIED SCHOOL DISTRICT
San Juan Capistrano, California

MANAGER V, INFORMATION SYSTEMS

DEFINITION

Under the direction of the Executive Director, Technology and Information Services, supervise and coordinate the daily operations of staff and system support for student information systems, financial and personnel systems; computer maintenance and installation; software installations and upgrades; and manage system performance and security.

EXAMPLES OF DUTIES

- Manage district data systems including, but not limited to, the Student Information System (Aeries), Integrated HR, Finance, Budget System (QSS), Substitute Management System, and systems related to educational needs.
- Supervise installation and maintenance of hardware and software for the District centralized and distributed computer operations.
- Acts as a liaison for the Education Division, attending instructional events and meetings with other district and site leaders.
- Prepare and implement goals and objectives for technological advances that will serve the needs of employees, students, school sites, and the public at large.
- Facilitate reporting processes and deadlines for CALPADS (CSIS/CBEDS) and other state and federal mandated reports.
- Provide leadership and direction in applications development, to increase access to information and facilitate productivity.
- Manage user account activity and security.
- Coordinate professional services for feasibility studies, systems analysis, designs, and programming.
- Recruit, evaluate and support assigned staff.
- Direct the professional development of the information systems staff to maintain pace with technological progress and district needs.
- Develop and maintain a thorough understanding of school site operations and data needs, including processes for scheduling, attendance taking, course development, home-school communication and reporting requirements.
- Prioritize requests for support and new projects, balancing district need and staff workload.
- Work with hardware and software vendors to maintain an optimal computing environment.
- Direct information specialists in the implementation and development of software programs to service District operations.
- Provide in-service training opportunities for District staff related to use of software programs and their periodic revisions.
- Troubleshoot hardware and software problems at the District office and school sites.
- Participate in software user group meetings to maintain open communication regarding services to schools.
- Maintain and enhance skills related to system and application software.
- Participate in short and long range planning for system operations District wide.

QUALIFICATIONS

Knowledge of:
Computer operating systems including Windows and Linux; SQL server knowledge; knowledge of QSS financial and personnel software; and Aeries student record keeping; knowledge of ETL (extract, transform, load) and automation; data communications, backup and recovery procedures.

Ability to:
Lead, organize, and support staff members; develop and maintain good interpersonal relations with District staff and site personnel; analyze problems and prepare written and oral reports; incorporate new technology into future district systems; exercise individual initiative; work systematically to accomplish goals; communicate effectively orally and in writing; comply with the District's customer service standards, as outlined in Board Policy.

Experience:
Prior experience in information technology and information retrieval environments; experience in supervising personnel and data processing.

Education:
Minimum of an Associates Degree in information technology, business administration, computer science, or any combination of professional training or experience equivalent to four years in technology, or in fields directly related to position requirements.

11/92
Revised 9/03; 3/04; 2/10; 3/13

JOB DESCRIPTION
Roseville City School District

NETWORK ANALYST II

Purpose Statement

The job of Network Analyst II was established for the purpose/s of planning, analyzing, designing, installing, maintaining, implementing, testing and repairing the district's information systems equipment focusing on wired and wireless networks, routers, switches, servers, enterprise software and telecommunications.

This job is distinguished from similar jobs by the following characteristics: Incumbents in this class perform at an advanced level from the Network Analyst I position.

This job reports to Director of Technology

Essential Functions

- Collaborates with supervisor, other department staff and district staff to establish department priorities and schedule equipment installation and repairs for the purpose of providing optimal service.
- Communicates with administrators, support staff, end users and vendors for the purpose of providing information and/or direction.
- Communicates with department staff regarding system problem detection and corrective action for the purpose of optimal technological service.
- Designs and supports the Local Area/Wide Area Network System for the purpose of ensuring availability of instructional materials and district operations.
- Develops and maintains manuals, databases and documentation for the purpose of documenting activities, providing written reference and/or conveying information.
- Implements security systems for the purpose of maintaining system security and complying with district policies.
- Installs and maintains network and telecommunication systems for the purpose of providing optimal service to district users.
- Installs, maintains, troubleshoots and repairs microcomputers, telecommunications equipment, network equipment and peripherals for the purpose of establishing and maintaining an effective information systems environment.
- Monitors Local Area/Wide Area Network traffic and remote devices for the purpose of determining appropriate actions to maintain computer and network operations.
- Performs software installation and upgrades for the purpose of ensuring availability of materials and prolonging the life of the work unit.
- Performs special projects and other duties as assigned for the purpose of providing optimal department service.
- Provides training and technical assistance for the purpose of ensuring effective and efficient use of district information systems.
- Transports and installs equipment at various district locations for the purpose of providing equipment to job sites or transporting equipment for repair.
- Troubleshoots and diagnoses Local Area/Wide Area Network protocols for the purpose of maintaining computerized communication.

Job Requirements: Minimum Qualifications

Skills, Knowledge and Abilities

SKILLS are required to perform multiple, highly complex, technical tasks with a need to routinely upgrade skills in order to meet changing job conditions. Specific skill-based competencies required to satisfactorily perform the functions of the job include: adhering to safety practices; operating equipment used in information systems; operating standard office equipment; planning and managing projects; preparing and maintaining accurate records.

KNOWLEDGE is required to perform algebra and/or geometry; understand written procedures, write routine documents, and speak clearly; and analyze situations to define issues and draw conclusions. Specific knowledge-based competencies required to satisfactorily perform the functions of the job include: understanding a routed and switched TCP/IP environment; microcomputers, hardware, software and networks; concepts, principles and practices of information networks; effective equipment utilization, UNIX, Windows 7, Mac OS X in an enterprise environment.

ABILITY is required to schedule activities and/or meetings; routinely gather, collate, and/or classify data; and consider a wide variety of factors when using equipment. Flexibility is required to work with others in a wide variety of circumstances; analyze data utilizing defined but different processes; and operate equipment using a variety of processes. Ability is also required to work with a diversity of individuals and/or groups; work with data of varied types and/or purposes; and utilize a variety of types of job-related equipment. Some problem solving may be required to identify issues and select action plans. Problem solving with data requires analysis based on organizational objectives; and problem solving with equipment is significant. Specific ability-based competencies required to satisfactorily perform the functions of the job include: adapting to changing work priorities; displaying tact and courtesy; meeting deadlines and schedules; working with detailed information/data; instructing users on proper usage of information systems; learning new concepts in technology; installing, configuring and troubleshooting network equipment; analyzing areas in person and over the phone and training support technicians and other staff in new technologies as they emerge.

Responsibility

Responsibilities include: working under limited supervision following standardized practices and/or methods; leading, guiding, and/or coordinating others; and operating within a defined budget. Utilization of resources from other work units is often required to perform the job's functions. There is a continual opportunity to impact the organization's services.

Working Environment

The usual and customary methods of performing the job's functions require the following physical demands: significant lifting, carrying, pushing, and/or pulling; some climbing and balancing; frequent stooping, kneeling, crouching, and/or crawling; and significant fine finger dexterity. Generally the job requires 60% sitting, 30% walking, and 10% standing. The job is performed under minimal temperature variations and in a generally hazard free environment.

Experience Job related experience with increasing levels of responsibility is required.

Education Targeted job related education that meets organization's prerequisite requirements.

Equivalency None Specified

Required Testing
Pre-employment Proficiency Test

Certificates & Licenses
A+, Network+ and/or Cisco Certified Network Associate (CCNA) are highly desirable
Valid Driver's License

Continuing Educ. / Training
As needed

Clearances
Criminal Justice/Fingerprint Clearance
TB Clearance

FLSA Status
Exempt

Approval Date
12/8/2005

Salary Grade
Classified Management E