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

Fairfield-Suisun Unified School District

Technology Review

July 23, 2010

Joel D. Montero
Chief Executive Officer

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FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
CSIS California School Information Services

July 23, 2010

Jacki Cottingim-Dias, Ph.D., Superintendent
Fairfield-Suisun Unified School District
2490 Hilborn Road
Fairfield, CA 94534

Dear Superintendent Cottingim-Dias:

In April 2010, the Fairfield-Suisun Unfied School District and the Fiscal Crisis and Management Assistance Team (FCMAT) entered into an agreement to provide a review of the district's technology services. Specifically, the agreement states that FCMAT will perform the following:

A. The district is requesting FCMAT to provide a comprehensive analysis of the district's current state of technology including hardware, software, professional development, departmental staffing, student Assessment and Evaluation requirements and the use of technology to determine the feasibility of combining the Technical Services Department and the Assessment and Evaluation departments. The objective of the review will be to provide a detailed report that demonstrates the current state of technology and student assessment requirements and provide recommendations regarding the organizational staffing of the Technology Department and the Assessment and Evaluation Department to form a single department to support the district's needs. The FCMAT team will evaluate the workflow of both departments and create an organizational workflow diagram to assist in the analysis.

   The team will interview site principals, department directors and classified staff to gather data regarding the types of software applications and hardware utilized at the district.

   The team will review and analyze the district's Technology Master Plan and make recommendations, if any.

B. The technology review will include an analysis regarding the level of support for the following:

   - Network Administration
   - Website development and support
   - E-mail support for district and site level staff
   - Student Attendance System
   - Financial Reporting System
   - Hardware installation and setup

- Application software used at district and site levels
- Technology in the classrooms and student data assessment and evaluation protocols

C. Review the job descriptions and staffing of the technology and Assessment and Evaluation departments. This component will also include any site level support and its impact on the both departments

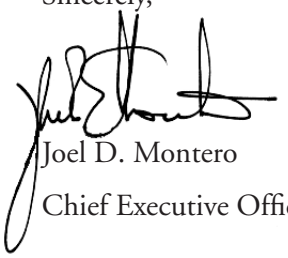
D. Review district board policies on the use and integration of technology for district level- and site-based instructional strategies. This component should include any obstacles or barriers that prevent the use of effective technology

E. Based upon the support level required by the district's technology and Assessment and Evaluation departments, provide staffing comparisons of districts of similar size and structure

F. Review the design network regarding safeguards of the data residing on the systems in the event of a catastrophic event or security breach. Review the processes or planning that exist to upgrade the hardware and software assets to remain current with today's technology. Provide recommendations regarding professional development training and technical expertise of both departments to form a single department.

This report contains the study team's findings and recommendations. FCMAT appreciates the opportunity to serve the Fairfield-Suisun Unified School District and extends its thanks to all the staff of the district for their cooperation and assistance during fieldwork.

Sincerely,



Joel D. Montero

Chief Executive Officer

Table of Contents

Foreword

FCMAT Background

The Fiscal Crisis and Management Assistance Team (FCMAT) was created by legislation in accordance with Assembly Bill 1200 in 1992 as a service to assist local educational agencies in complying with fiscal accountability standards.

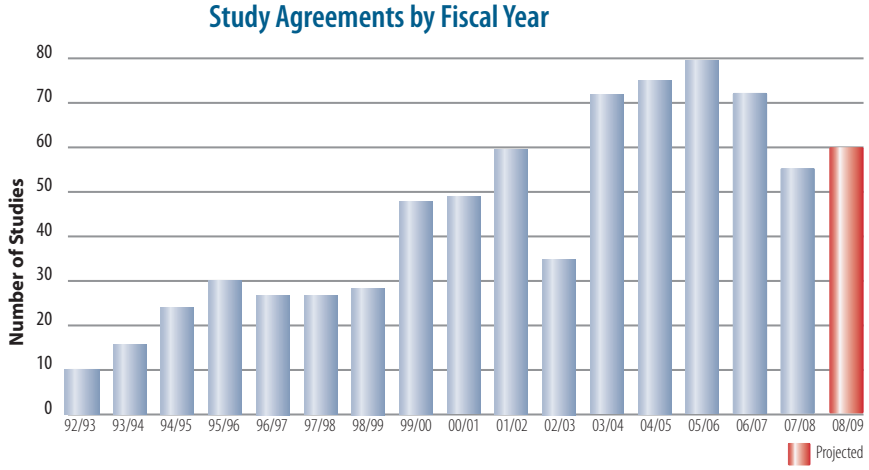
AB 1200 was established from a need to ensure that local educational agencies throughout California were adequately prepared to meet and sustain their financial obligations. AB 1200 is also a statewide plan for county offices of education and school districts to work together on a local level to improve fiscal procedures and accountability standards. The legislation expanded the role of the county office in monitoring school districts under certain fiscal constraints to ensure these districts could meet their financial commitments on a multiyear basis. AB 2756 provides specific responsibilities to FCMAT with regard to districts that have received emergency state loans. These include comprehensive assessments in five major operational areas and periodic reports that identify the district's progress on the improvement plans.

Since 1992, FCMAT has been engaged to perform nearly 700 reviews for local educational agencies, including school districts, county offices of education, charter schools and community colleges. Services range from fiscal crisis intervention to management review and assistance. FCMAT also provides professional development training. The Kern County Superintendent of Schools is the administrative agent for FCMAT. The agency is guided under the leadership of 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.

Total Number of Studies..... 711
Total Number of Districts in CA..... 982

- Management Assistance..... 675 (94.9%)
- Fiscal Crisis/Emergency 36 (5.1%)

Note: Some districts had multiple studies.
Districts (7) that have received emergency loans from the state.
(Rev. 7/30/08)



Introduction

Background

The Fairfield-Suisun Unified School District is located off Interstate 80 in Northern California, halfway between San Francisco and Sacramento. Fairfield-Suisun Unified is composed of two separate districts that unified in 1968. It has an enrollment of approximately 23,000 K-12 students served in 31 schools including five high schools, five middle schools, 20 elementary schools, and one adult school.

The district is implementing technology projects that will have major effects throughout the organization and provide a significant opportunity to make procedural, operational, and functional changes in the way district technology functions to meet ongoing academic challenges. FCMAT also identified educational technology integration projects with exemplary uses of technology at schools the team visited such as Weir Elementary, Grange Middle School, and Fairfield High School.

In February 2010, the district entered into a study agreement with the Fiscal Crisis and Management Assistance Team (FCMAT) for a technology review. The review's objectives are to provide a detailed report that demonstrates the current state of technology issues, technology use, and provides recommendations regarding the organizational staffing of the Technical Services, Assessment and Evaluation, and Educational Technology departments.

The study agreement specifically requests that FCMAT perform the following:

Scope of Review

A. The district is requesting FCMAT to provide a comprehensive analysis of the district's current state of technology including hardware, software, professional development, departmental staffing, student Assessment and Evaluation requirements and the use of technology to determine the feasibility of combining the Technical Services Department and the Assessment and Evaluation departments. The objective of the review will be to provide a detailed report that demonstrates the current state of technology and student assessment requirements and provide recommendations regarding the organizational staffing of the Technology Department and the Assessment and Evaluation Department to form a single department to support the district's needs. The FCMAT team will evaluate the workflow of both departments and create an organizational workflow diagram to assist in the analysis.

   The team will interview site principals, department directors and classified staff to gather data regarding the types of software applications and hardware utilized at the district.

   The team will review and analyze the district's Technology Master Plan and make recommendations, if any.

B. The technology review will include an analysis regarding the level of support for the following:

   - Network Administration
   - Website development and support
   - E-mail support for district and site level staff

- Student Attendance System
- Financial Reporting System
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C. Review the job descriptions and staffing of the technology and Assessment and Evaluation departments. This component will also include any site level support and its impact on the both departments

D. Review district board policies on the use and integration of technology for district level- and site-based instructional strategies. This component should include any obstacles or barriers that prevent the use of effective technology

E. Based upon the support level required by the district's technology and Assessment and Evaluation departments, provide staffing comparisons of districts of similar size and structure

F. Review the design network regarding safeguards of the data residing on the systems in the event of a catastrophic event or security breach. Review the processes or planning that exist to upgrade the hardware and software assets to remain current with today's technology. Provide recommendations regarding professional development training and technical expertise of both departments to form a single department.

Study Team

The study team was composed of the following members:

Mary Barlow
FCMAT Deputy Administrative Officer
Bakersfield, California

Kris Saunders
Network Systems Engineer
FCMAT CSIS
Sacramento, California

Leonel Martinez
FCMAT Public Information Specialist
Bakersfield, CA

Ajit Mandal*
Chief Executive Officer
Proxient, Inc.
Benicia, California

Joseph Baker*
Principal
Proxient, Inc.
Benicia, California

Gary Meisner
Senior IT Consultany
Proxient, Inc
Benicia, California

*As members of this study team, these consultants were not representing their respective employers but were working solely as independent contractors for FCMAT.

Study Guidelines

FCMAT held interviews on March 8, 9, and 10, 2010 at the Fairfield-Suisun Unified School District offices and at Weir Elementary, Grange Middle, and Fairfield High School. FCMAT completed the information discovery for this assessment through a three-day series of interviews with the superintendent, cabinet, directors, technology staff, and interviews with school site principals, teachers, and media specialists. Documentation regarding the district's strategic plan, systems information, and financial application and operating software and compliance information was reviewed and discussed as part of the interview process. The district's 2010-2013 technology plan provided information about the district's vision for technology. The plan was recently completed and will become effective July 2010. This report is the result of those activities.

I. Technology Plan
II. Support Level
III. Job Descriptions and Staffing
IV. Board Policies
V. Design Network Safeguards
VI. Appendices

Executive Summary

The Fairfield-Suisun Unified School District is studying the feasibility of consolidating the operations of the Technical Services, Assessment and Evaluation and Educational Technology departments. The district's Technical Services (TS) Department supports the network, administrative technology and hardware systems with districtwide support and maintenance that includes more than 150 servers. The Assessment and Evaluation Department supports the assessment database and software systems.

Several stand-alone databases and systems were developed by the district's Assessment and Evaluation Department staff. A significant portion of the Assessment and Evaluation staff's time is dedicated to maintaining and supporting these systems. The Educational Technology writes and supports the implementation of the district's educational technology plan. In addition, the staff supports the implementation of those goals and actions at school sites and in classrooms by providing professional development and support. The staff members involved in this activity usually work in isolation. This means they are unable to access the district training provided by the curriculum and instruction staff, which uses an integrated approach that includes instructional strategies as part of curriculum delivery.

To consolidate these departments, FCMAT recommends that the district conduct a full assessment of existing hardware, software, and network infrastructure to facilitate the alignment of all support staff members. In addition, a districtwide assessment should be conducted to determine the technology skills, expertise and experience levels of the district and site certificated and classified staff. This will help the district determine the staff's professional development needs and organize professional development based on the departments and individuals best qualified to provide professional development for specific systems and equipment.

Separate Data Systems

Over last few years, certain key data systems were developed in isolation as a result of necessity, lack of clear vision and/or individual employee choices. While this effort was generally effective and resulted in above-average individualized service, the systems have evolved to a size that requires a significant amount of dedicated time and resources to maintain. These systems have also drawn valuable attention and resources from the district's student information system (SIS).

Data Quality

The staff members responsible for these isolated systems have taken direct ownership of them and maintained and enhanced the quality of data they individually produce. However, this has been accomplished at the expense of the district's main Student Information System (SIS). As a result, the SIS has produced data that is inconsistent, of poor quality, and is occasionally outdated based on industry standards. Complete confidence in the SIS data is critical for the operation of several divisions, yet this is severely lacking among the district's staff. A disproportionate amount of staff time is dedicated to maintaining and enhancing the SIS compared to these isolated, district-developed data systems. Some data collected by district-developed and supported databases will be inherent in the Aries system, eliminating the need for some or part of these stand-alone or duplicate systems. Increased data quality and standardization of data fields will result in more efficient, timely, and usable reporting of student information.

Software Development

The district developed several systems and software applications without a unified vision of technology. Staff members indicated that feature enhancements to systems were made randomly instead of developing a consolidated feature requirements set. The district has developed a culture of developing and supporting home-grown systems. Each system depends on a specific employee's expertise and experience, and cross-training has not been provided to other department staff members. This results in an increased cost of ownership and higher level of risk for the district.

The district has invested heavily in software development and support instead of taking a more strategic approach on whether to purchase software or develop it internally with staff. This practice has driven the structure and staffing of the Assessment and Evaluation Department. The department responds to individual requests for specialized and unique reports by writing the code and developing customized reports. This has resulted in an absence of standardized reports that could be accessed and used by the district, schools, administrators, and teachers. The internal staff resources required to maintain this practice is costly. Standardizing reports and establishing a time line for reports to be generated would free time that staff members could devote to other critical projects.

A considerable amount of district resources is directed to maintaining the assessment and evaluation system called "Results Now" with a relatively low return on investment. The system provides accurate information, but lacks true formative data. In this report, FCMAT provides a comparison of the features and cost of the available industry standard assessment and evaluation systems.

Organization, Staffing and Professional Development

The district has a significant opportunity to consolidate departments, creating efficiencies that include reducing staff costs and streamlining services to schools and departments while maintaining a consistent high quality of service. The Aeries student information system implementation can be used as an opportunity to develop new staff responsibilities and workflow and identify staff strengths and areas where professional development is necessary. This report provides sample organizational charts and staffing ratio comparisons using districts of similar size, revenue limit, and other factors including an assessment of job descriptions in the Technical Services and Assessment and Evaluation departments. This component will include redirecting the roles and responsibilities of the site technology support staff.

The district should assess the technical ability and training of each member of the Technical Services and Assessment and Evaluation departments to determine the professional development needed for the new duties of each position. The staff members should be trained to support educational technology, instructional software, Assessment and Evaluation systems and equipment as well as any future related technology purchases. A rigorous cross-training program should be developed so that at least three support staff members can use any single system, piece of equipment, or infrastructure component.

The district should implement an integrated professional development approach to fully utilize its current investments in technology resources. The educational technology office, the district professional development office, the assessment office and the information technology office provide separate professional development opportunities, which can result in a duplication of effort. Professional development efforts should model the integration of technology into the curriculum by coordinating efforts and using technology to deliver cost-effective training.

Help Desk

Much of the district's IT Department documentation is available online to quickly assist the site staff. The use of Web services reduces the number of calls to the help desk staff by directing the site staff to utilize the website before opening a work order. Although the help desk's operating procedures are available online, the help desk is greatly underutilized because district staff members tend to call the support staff directly. The help desk should be the central location for making all service requests and dispatching work orders, relieving the workload on the support staff.

The district plans to implement a new help desk system to upgrade the current system's functionality. Technology users indicated the technical staff handles service requests well, and the response to problems is above average when compared to industry standards. However, the current system does not monitor all help requests since some requests are not reported through the help desk. This reduces the opportunity for the district to evaluate the level of support needed for specific hardware, systems and network infrastructure. Consequently, the district cannot anticipate the equipment and systems that may require replacement or replenishing, determine professional development needs, and more efficiently prioritize and assign the support staff. The new system should help resolve site support needs and provide valuable data to anticipate the routine repair and maintenance of equipment as well as staff professional development needs.

Network Security

The district lacks a network security policy, which is essential to IT governance in any organization. This type of policy would provide a baseline for networks and infrastructure so that all staff members can have a common understanding of the networking environment. A network security policy usually includes the following components:

- Information on the longevity and scope of the server and infrastructure logs that are maintained and how these are stored
- Guidelines on anti-virus software, wireless communications, and password policies and how these are applied throughout the district
- The district acceptable use policy

The district lacks logical network diagrams (drawings of networking components and their interconnections). This reduces the IT staff members' ability to troubleshoot and remediate problems that are not within their areas of expertise. A lack of diagrams can also result in increased costs if a staff member that is unfamiliar with the system troubleshoots an issue. Developing logical network diagrams will enhance efficiency when IT individuals resolve problems or discuss topics with vendors.

IT staff members stated that a disaster recovery plan is in development but unavailable. An IT department with no disaster recovery plan lacks the resources to quickly recover from an outage and restore district services. This type of plan should continually be tested and updated.

Each site has local resources and authentication for staff/site daily activities. This configuration has advantages and disadvantages. One advantage is that if connection to the district office is lost, each site can function until the connection is restored, so there is little interruption of service. The disadvantage is that each site must maintain the staff and the hardware necessary to support these functions. Increasing the bandwidth between sites and providing redundant links allows the district to consolidate network servers, staff and services to the district office.

Each district information system requires a separate log-on, requiring staff members to spend a significant amount of time and effort. A consolidated approach to a single system log-on will help reduce the time spent by the support staff dealing with lost passwords or user identification issues and reduce the security risk.

The district uses a single firewall, which presents a single point of failure for all Internet connectivity and access. The best approach is to use high availability or failover with all critical network components.

The district lacks a centralized storage system. Using local storage on each server increases the overall cost of systems and support over time. Utilizing a shared storage system will allow all servers to be connected to a centralized device for the maintenance of data.

The district lacks centralized monitoring, alerting, and performance tracking (to include server room temperature monitoring). The most effective, proactive service support uses an automated network monitoring system to provide historical data on infrastructure and server components. This system will allow the IT Department to be more proactive regarding network and server issues and provide the information necessary to plan for hardware upgrades. It also increases efficiency by providing automated infrastructure and environment monitoring. The same approach applies to server room environmental monitoring. An environmental monitor will provide an alert for certain environmental characteristics in the server room such as a high temperature.

VLAN routing between administrative and educational networks is available through authentication. Adding an access control list (ACL) level of security will prevent network traffic from intersecting, but provide exceptions for those who require them such as the IT Department. Adding additional layers of security will prevent data from being compromised between the two networks if any single configuration is compromised.

Priority Ranking of Recommendations

The report is divided into several sections that cover the major areas of technology planning, management, and support. The document is organized in an easy-to-follow format that includes findings followed by their associated recommendations. Each section also includes a recommendation ranking that management can use to prioritize projects.

FCMAT uses a rubric or standards-based assessment in determining the relative risk and rating for specific components of this report. The district's scores, or ratings, are evaluated as Priority One, Two or Three and defined as follows:

- ● **Priority 1 –** An immediate concern that may cause significant operational problems if not addressed in a timely manner.
- ◒ **Priority 2** – May also cause operational problems but does not require immediate attention.
- ○ **Priority 3** – May escalate into operational problems, but can be addressed during the normal course of business through the implementation of new policies, written direction by management, etc.

The findings and recommendations focus on building long-term integrated technology systems that can be expanded to accommodate district growth.

Findings and Recommendations

Technology Plan

This report section analyzes the Fairfield-Suisun Unified School District's technology plan to identify gaps in planning and implementation. The recommendations in this section focus on helping the district develop a working plan with a broad vision and annual goals to demonstrate progress. The following areas of the technology plan were reviewed:

- Stakeholder Involvement
- Curriculum Driven Technology Goals
- Professional Development and Implementation
- Infrastructure, Hardware, Technical Support and Software
- Funding and Budget
- Monitoring and Evaluation

General Assessment

The Fairfield-Suisun Unified School District Technology Plan, dated July 1, 2010-June 30, 2013, was developed as a requirement to qualify for E-Rate, Enhancing Education Through Technology (EETT) and other funding sources. The plan meets all requirements required by the California Technology Assistance Project (CTAP). It is well written and researched, providing a clear view of the current state of technology and future projects. The alignment of technology goals to district curriculum and instruction goals is exceptional and could be considered a model.

The district plan provides a snapshot of the district's organizational structure and processes. Throughout the document, one small department has responsibility for key actions that require coordination across the entire district. While the responsibility of implementing the technology plan may fall to one individual or department, a shared effort by the entire organization is necessary to accomplish the type of major changes outlined in this plan. The district has committee structures to facilitate communication; however, they do not adequately address the need for collaboration at all levels of the organization. The plan outlines a crucial monitoring component as follows:

> The Directors will form ad hoc teams, comprised of teachers, site administrators, site technology coordinators and others who have knowledge of the activities to be evaluated, as needed.

An ad-hoc approach will likely result in a lower level of collaboration and commitment from the necessary staff members and departments and is inconsistent with the high-level results outlined in the plan.

The plan provides above-average data on equipment, the current state of classrooms and funding. If the goal is to create technology equity instead of disparity among schools, the plan should include a section addressing classroom standards. The plan provides an outline of the software and hardware in classrooms, but does not include a minimum standard of equipment and software for all schools, which can be monitored by the district. The plan thoroughly documents the age of equipment, noting the aging desktop computers in schools, but does not provide a

replacement plan. This type of plan is usually the responsibility of the department that maintains hardware, such as information technology. However, the district has an opportunity to work as a team to develop a plan that will have a significant impact on the ability to achieve student and staff goals. Securing funds to support the plan's goals is a challenge in the current fiscal environment, but also an opportunity to promote collaboration between departments and maximize resources.

Professional development is correctly aligned to goals, but does not appear to be supportable based on current staffing levels. The staff members interviewed in every department indicated that the professional development provided by the educational technology coordinator is exceptional. They also agreed that more professional development is needed for the type of change outlined in the technology plan. FCMAT's research strongly indicates that there is insufficient collaboration between departments on professional development. Site staff members expressed a willingness to access more online training.

The key question regarding strategic plans is identifying the strategies necessary for implementation. The plan's monitoring component is strong, but could be improved by including more detailed project planning with actions and specific responsibilities. A matrix of detailed actions with responsibilities that are shared by the Technology Department and the entire district will facilitate collaboration and help the district identify potential barriers. This level of detailed project management should be monitored much more frequently than what is currently included in the plan.

Staff members repeatedly cited a need for a cohesive vision and organization and indicated that different departments block progress on some projects to promote their own preferences.

Staff Involvement

The district's technology plan identifies the stakeholders who developed the plan. For ongoing monitoring, the plan lists committees that range from those that are ad hoc to those that meet on a regular basis. The plan is monitored by the education technology coordinator and a committee consisting mostly of school site teachers who report to the senior staff and annually report to the governing board. The group is isolated and has minimal contact and involvement with other key departments and employees. The group uses Wikis to gather input in developing the plan, but there is little communication about the steps necessary to reach objectives and goals.

Staff members repeatedly cited a need for a cohesive vision and organization and indicated that different departments block progress on some projects to promote their own preferences. Staff interviews indicated some employees are frustrated that departments do not work together to support district goals.

Recommendations

The district should:

1. ● Choose key personnel from district departments and school sites and create a new committee that will help guide the implementation of annual technology goals as well as monitor the progress of plan implementation. The members should include senior staff from various district departments. School-site participants should include administrators and key teacher leaders who understand how to implement objectives at the schools, not just personnel with an interest in technology. The group should focus on identifying barriers to implementation and use an interdepartmental approach to overcoming those barriers.

2. ○ Develop a plan to communicate with all involved parties about the district's business and educational technology initiatives. All parties should be apprised of short- and long-term technology goals and the progress towards these goals, and the staff should be able to provide regular input on these topics. The use of Web-based communication, wikis and other modern communication tools will allow all staff members to participate and become more invested in the plan.

Curriculum-Driven Technology Goals

District technology goals for curriculum support are very strong, but are not supported by management processes or an organizational structure that enables efficient and economical systemwide implementation. The objectives and monitoring process under each goal do not address the steps needed to implement systems and support with equity across all schools. The district had some success in using technology to affect the curriculum. Teachers frequently use assessment data to inform instruction, SMART boards are used in almost every classroom, and software is used regularly in core instruction, but technology use by teachers is not consistent. Technology use at some schools is lower than it should be given the significant district investment. While the district has an impressive list of software to support instruction, it has not been prioritized. This would allow decisions to be made regarding what is essential and what is of lower priority.

Recommendations

The district should:

1. ● Revise the technology plan to reflect an organizational structure where the technology office and the curriculum and instruction office work as a team on all educational technology projects. Integrating educational technology to support the core curriculum has been most successful in school districts where curriculum and instruction staff and technology staff members plan, implement and support agreed-upon initiatives.

2. ● Form a standing district technology steering committee consisting of teachers and district administrators to vet and approve selected technology applications and devices that meet the grade-level curriculum standards. The district should also consider developing minimum standards for the software available to grade levels, special needs students and other student groups to ensure equal access across all schools and programs. Purchasing should continue to be aligned to approve the software listed on http://www.clrn.org.

3. ◒ Create a process and organizational structure to connect the adoption of educational technology software with the curriculum approval process. . Other districts have accomplished this with a curriculum council that develops recommendations for approval of all educational material. This adoption process accomplishes two goals. It standardizes educational technology resources throughout the district, resulting in systems that can more easily be supported, and it creates a strong link between technology resources and the core curriculum.

Professional Development

The technology plan outlines numerous professional development projects. The district's professional development for educational technology is often exemplary and should be replicated. Online courses for students and training units for teachers demonstrate a pragmatic and efficient approach. Information gathered during school site visits reaffirms that teachers have access to professional development resources. These resources are online, on local school servers such as the "H" drive at Fairfield High, or on the district educational technology server.

However, the current educational technology plan does not address the need to create efficiencies that support the expansion of professional development services. A single staff member allocated .5 full-time equivalents (FTEs) supports educational technology professional development for the entire district. Like other areas of district technology, support services relies on one person with no cross-training or back up. The plan's processes and structure do not adequately address these issues. There is some indication of collaboration between the educational technology office and the office of professional staff development, but it appears to be very limited. This is a missed opportunity to address sustainability, take better advantage of resources, and provide a higher level of services to the staff. The district and school site staffs noted a disparity between the professional development office and the educational technology office when it comes to providing services. One example is a textbook adoption in which the related professional development was offered separately despite the opportunity for collaboration between departments.

The staff members interviewed were nearly unanimous in their belief that the professional development was well aligned to needs and well delivered. However, they reiterated that more is needed given the large number of technology-based resources in the district.

Recommendations

The district should:

1. ● Coordinate professional development with other departments. The technology plan should be revised to address the need to grow capacity through collaboration with other departments. The district should consider moving educational technology training out of isolation and integrating it with regular professional development to promote sustainability and cost efficiency.

2. ◒ Revise the technology plan to include pragmatic strategies to expand professional development. These strategies should consider staff reorganization and current financial constraints. Professional development priorities in technology should be developed collaboratively to align with district priorities. The district should also consider assigning professional development responsibilities to staff members in the technology office. Consideration should also be given to using consultants and expert teachers to provide professional development.

3 ○ Revise the technology plan as needed to support the continued expansion of online training opportunities. Teachers, other staff members and students should be able to access these materials from school and home. All resources should be moved to central point to ensure access for all schools.

Infrastructure, Hardware, Technical Support and Software

The district technology plan addresses the current infrastructure, hardware, technical support and software and what is needed to implement the educational technology plan. The documentation of infrastructure hardware and software is very detailed. The technical support section also provides useful details, but will need to be adjusted for the pending reorganization. The plan does not address minimum standards for the classroom for hardware or software. Interviews with the site staff and direct observation by the consulting team at school sites indicated there are inconsistencies in hardware and software. These inconsistencies have created unequal access to vital educational resources for students and teachers. At one school visited by the consultants, the computers in classrooms and one lab had limited access to the online resources provided by the district because of the age of the units. There is no functional replacement plan for technology equipment and software.

Recommendations

The district should:

1. Include in the educational technology plan a minimum standard for all hardware, software and peripheral technology equipment for classrooms. This standard would include wireless access points, computer desktop hardware, operating systems, educational software and equipment like digital projectors and SMART boards. Implementation of standards will ensure equity for all teachers and students and support the ability to train the staff. The appendix section of this report includes an example of baseline standards.
2. Develop an infrastructure, hardware and software plan that considers teacher and student experience in the classroom. The plan's components should focus on delivering tools and training that will support the core curriculum through technology.

Funding and Budget

The technology plan's funding and budget component does not reflect the reorganization of technology staff and funding changes. The budget history shows a steady decline in professional development funding from $760,000 in 2005-06 fiscal year to $671,000 in the 2007-08 fiscal year. The hardware and technical support budget was $4,739,000 in 2005-06 and $4,714,000 in 2007-08. Staff members indicated that equipment replacement was reduced by $1 million the previous year. The funding decline combined with the lack of an equipment replacement plan already affects technology use in the classroom because of aging equipment.

Existing funding is underutilized, and the plan does not adequately address improved utilization of funds for plan implementation. The funding spent by the district has been significant, resulting in an internally-built assessment system, home-grown Web applications to work around the limitations of SASI XP and an internally managed microwave network supporting the district's Wide Area Network (WAN). While the plan notes the potential of tools like Aeries software in improving efficiencies, it does not adequately address other potential savings areas. The funding component is unrealistic given the current fiscal crisis and requires revision based on the state's continued funding decline.

Recommendations

The district should:

1. ● Develop funding priorities for all components of the plan. To make efficient use of existing funding, the district should consider prioritizing all components of the educational technology plan and align funding to priorities. This allows a logical process to be followed to allocate for unfunded priorities as additional funds become available.
2. ● Create a district technology plan for updating hardware and software that includes the budget amount necessary to support technology for business services and educational technology in classrooms.
3. ● Create budget efficiency through interdepartmental collaboration. The current plan should be reviewed and revised to reflect efficiencies that can be realized through the reorganization of staff and the revision of duties.
4. ◒ Identify specific priority needs and seek funding for needs. The district should utilize districtwide technology standards to identify district-level and school-site gaps and needs. Funding should be sought from alternative sources such as grants and community fundraising to meet needs.

Monitoring and Evaluation

The educational technology plan's component on ongoing monitoring and evaluation is strong in its analysis of the impact on teaching and learning. Collaboration with the Assessment and Evaluation Department to analyze the affect of programs on student learning is an effective approach. However, there is no indication of substantive collaboration between the educational technology office and the department supporting the core curriculum. The plan states the following:

> The group shall be an ad hoc committee called the Technology Advisory Group (TAG). It shall meet at least once per year to provide meaningful input for mid-course corrections.

It describes the committee membership and includes a range of affected personnel; however, there is a lack of involvement by the senior curriculum and instruction staff. With initiatives like Read 180 as part of the plan that directly affect the core instruction and at-risk student groups, the evaluation should be a collaborative effort between the Assessment and Evaluation Department and the Curriculum and Instruction department.

The plan also provides for the monitoring and evaluation of each of the initiatives, but does not include details on monitoring project implementation. This is a missed opportunity to foster a team approach and commitment across the departments involved in implementing that component of the plan.

Recommendations

The district should:

1. Develop a monitoring and evaluation plan that includes project implementation The focus should be interdepartmental efforts to identify issues and quickly make adjustments that ensure progress. The implementation of hardware systems, software systems and professional development should be developed in collaboration with the senior staffs of those departments, and progress should be tracked by all involved. This detailed monitoring can be summarized and annually reported to the superintendent and governing board. The structure should be defined in the technology plan monitoring component.

2. Collaborate with curriculum and professional development office on all evaluation that affects teaching and learning. The district should consider integrating the evaluation of all technology initiatives that support teaching and learning with the same evaluation model used by the Curriculum and Instruction and Professional Development offices. By including technology integration with assessment, the district can realize cost saving through the elimination of redundancies and improve the delivery of services to schools.

Support Level

This section focuses on the current level of support in the following business and educational technology functional areas:

- Network Administration
- Website Development and Support
- E-mail Support for District and Site Level Staff
- Student Attendance System
- Financial Reporting System
- Hardware Installation and Setup
- Application Software used at District and Site Levels
- Technology Support to Classrooms

General Assessment

According to the district technology plan 2010-2013, staff interviews, and other documentation, the district is keeping pace with the rapidly increasing demand to provide support for technology in schools and district offices. Budget reductions over the past few years are beginning to have an impact on the district's ability to replace aging hardware and update network infrastructure.

The Technology Department is well staffed and provides exceptional levels of service, exceeding the levels found in many California schools districts. The technology plan states the following:

> The Information Technology Department provides hardware, software, and connectivity support to all sites via its team of 10 computer technicians (includes one at each comprehensive high school), 2 server and project technicians, 3 help desk technicians, an inventory technician, 2 engineers, 2 database administrators/programmers, a network administrator, and 2 managers. The IT Educational Technology division includes a district coordinator, a clerk and site technology coordinators (extended day positions usually held by teachers) at each school site.
>
> Including instructional and administrative computers, the computer-to-technician ratio is about 500:1. Response times currently range from a few hours to one week for most issues.

The plan also states that "School Site Technology Profiles need to be developed and analyzed in order to determine the actual hardware needs of each site…" This indicates that baseline standards for hardware and software should be established for schools, classrooms, and labs along with formal adoption policies for instructional and administrative software. A long list of instructional software is used across the district; however, choices should be more limited or prioritized so that the district can ensure successful implementation, technical support, and staff development for these applications before moving on to more choices.

A computer or hardware replacement plan should be implemented since more than 60% of the estimated 5,179 computers in the district are four or more years old. This can translate to increased support needs and hinders successful use of equipment in classrooms.

Over the past few years, in-house systems have been developed because of necessity, lack of clear vision and/or individual employee choice. While this effort was generally effective and resulted in above-average individualized service, the systems have evolved to a size that requires a significant amount of dedicated time and resources to maintain. The district should consider the feasibility of moving to off-the-shelf software applications for the assessment, absence, Parent Connect, and professional development systems, and the district website. This will allow resources to be used to implement standard- or industry-based applications instead of developing, maintaining, and implementing in-house applications.

The technology plan is continuing to meet demands with projects underway to modernize the network infrastructure. The plan suggests the following:

> In order to meet the growing demand for hardware and software inventories at the sites and the district office, the district needs to develop a plan to address hardware and software support, replacement costs, professional development, software support, and connectivity.

The plan states the following about plan priorities:

> Existing practices with respect to Total Cost of Ownership (TCO) need to be revised on a semi-annual basis to ensure adequate budgeting is being provided to address the following areas:
>
> - Align hardware acquisition plans with Education Technology goals
> - Replace microwave links with Fiber Service
> - Disaster recovery
> - Implementation of Windows Domain Network Infrastructure
> - Enterprise class wireless system
> - Ongoing staff training
> - Maintain an up-to-date, secure, and centralized network infrastructure
> - Enhance computer-based curriculum materials
> - Maintain adequate technical support level
> - Streamline all business related process

Network Administration

The district's comprehensive standards for equipment, including computers, printers, software, and presentation systems, are published on the district website. However, there is little indication that the district has documented standards for network infrastructure. The wide-area network has been developed over many years and is linked with microwave towers. Novell is the prevalent network operating system. The culture of the department tends to support the current state of affairs and is resistant to changing the environment. Examples include moving from microwave to fiber and from Novell to Microsoft.

The culture of the department tends to support the current state of affairs and is resistant to changing the environment.

There is no standardized plan to replace aging computers. The department hardware replacement plan was revised from a five-year to a seven-year rotation because of budget restrictions. The department has a process for purchasing refurbished off-lease hardware for desktop equipment. The last CTAP Technology Survey was completed in 2007. At that time, more than 46% of the district's computers were more than four years old. At present, it is estimated that more than 60% are more than four years old. Older equipment is difficult to maintain and has problems operating modern applications because of speed and memory requirements. The district's current model for technology replacement is insufficient to support long-term viability of technology use in schools.

Recommendations

The district should:

1. ◒ Review, update, and document the network infrastructure of the wide-area network and local-area networks. The district should consider using a qualified network contractor if outside help is needed to analyze, document, and propose ways of improving the existing network's performance and security. Standards should be developed and adopted for the transition from the current environment to the new infrastructure being proposed in the technology plan. The design should include the capacity for voice, video, and data including, wireless capability.

2. ○ Perform a physical inventory to verify all equipment at schools and district offices for computers, printers, projectors, smart boards, and licensed software. Criteria should be developed and information collected on desktops older than four years including memory, operating systems, CPU speeds, along with requirements for educational and business software. This information also should include manufacturer, age, asset number, serial number, and location. The results should be transferred to an asset management system and regularly maintained. This information could be exported and/or linked to a help-desk management system.

3. ○ Desktop replacement plan. Funding for ongoing technology replacement was discontinued in 2008-09 because of districtwide budget reductions. Computer replacement funding falls under site discretionary funds or other special funding to replace aging computers. Because of this diversity, replacements are not evenly distributed, causing inequity at school sites. A cycle should be established to replace desktops, preferably every four or five years. All available funding sources should be reviewed as well as creative ways to optimize purchasing power such as "off lease," donations, grants, and bond measure. It is difficult to maintain old technology that operates modern applications. As a result, some teachers avoid using older technology because it may fail.

Training

There is virtually no cross-training of the technology staff. Employees indicated that if someone is on vacation a function may not be completed until another technician is available. Interviews and documentation indicate the district lacks a sustained program for improving the technology staff's skills and productivity.

Recommendations

The district should:

1. ● Implement cross-training for technology staff. The technical staff agreed that the district provides little or no cross-training. The Technology Department should determine the technical training needed and regularly provide the staff this training.'

Support

The network infrastructure is well supported according to the many technology users interviewed. The department has 21 technical services staff members, including a director, network administrator, database administrator, two senior network engineers, a senior help desk technician, two help desk technicians, a work-order control technician, a SASI support analyst, and 12 computer technicians. The schools combined have 40 technology learning coordinators (TLC teachers) who provide basic technical support and help train other teachers at the school.

If the district consolidates departments and eliminates stipends for the 40 site TLCs, the new system will help maintain quality of service to technology users. The new system will also be instrumental in promoting a single point dedicated to supporting all technology help requests.

Additional efficiencies can be gained by implementing the new network infrastructure, which would allow for processes such as the remote management of desktops, reducing the time necessary to solve desktop problems. The centralization and virtualization of servers will further reduce technical support requirements. Staff members indicated that the district has more than 156 servers to manage, and they should be virtualized.

When called directly, technicians schedule their own work, which may not promote balanced workloads.

Technology users indicated the technical staff handles service requests well, and the response to problems is above average when compared to industry standards. However, the current system does not monitor all help requests since some requests are not reported through the help desk. This reduces the opportunity for the district to evaluate the level of support needed for specific hardware, systems and network infrastructure. Consequently, the district cannot anticipate the equipment and systems that may require replacement or updating, determine professional development needs, and more efficiently prioritize and assign the support staff. The new system should help resolve site support needs and provide valuable data to anticipate the routine repair and maintenance of equipment as well as staff professional development needs.

Recommendations

The district should:

1. ● Continue to implement Zen Works or a similar product to allow the support staff to remotely manage desktops, reducing the time it takes to solve desktop problems.
2. ● Continue to implement a new help desk system to upgrade the current system's functionality.
3. ● Update the district and site lists of support staff, contact information and responsibilities. The list should provide everyone in the district with a clear understanding of the appropriate contacts for each type of technology need.
4. ● Review and update the procedures for school site and district office personnel on making requests to the help desk. Documentation should be created and distributed to the various users explaining how to submit requests for service.
5. ● Eliminate site based-technology learning coordinators (TLCs) and redirect funding to the Technology Department to support the reorganization plan. -

Website Development and Support

All schools have websites maintained by site TLCs, and district sites are maintained by a database administrator.

Recommendations

The district should:

1. ◒ Review and revise the templates for elementary, middle, high schools and district departments to establish a consistent appearance throughout the district for each school and department.
2. ◒ Consider forming a team of principals, teachers, and administrators to develop requirements for district Web-based communication and an Intranet for the staff. These requirements should cover Web pages for teachers, schools, parents, and the district and Intranet features for calendars, pod casting, blogs, collaboration, and any other desired functionality.
3. ○ Purchase and implement a comprehensive Web management tool to replace what is currently used. This should be accomplished once the above requirements have been developed. A comprehensive Web management tool will minimize support issues by allowing the district offices, schools, teachers, and departments to easily manage their websites and pages.

E-mail Support for District and Site-Level Staff

The district uses GroupWise for districtwide E-Mail, however the Web-based version is difficult to access from outside the district. Many employees consider the system dated and in need of replacement.

Recommendation

The district should:

1. ◒ Consider changing its current e-mail system from GroupWise to Microsoft Exchange, enabling improved management and support. Most teachers and administrators use e-mail to communicate, but GroupWise does not work well from outside the district.

Student Attendance System

Over last few years, certain key data systems were developed in isolation as a result of necessity, lack of clear vision and/or individual choice. While this effort was generally effective and resulted in above-average individualized service, the systems have evolved to a size that requires a significant amount of dedicated time and resources to maintain. These systems have also drawn valuable attention and resources from the district's student information system (SIS).

The staff members responsible for these isolated systems maintained and enhanced data quality. However, this has been accomplished at the expense of the district's main SIS. As a result, the SIS has produced data that is inconsistent, of poor quality, and is occasionally outdated. Confidence in the SIS data is critical for the operation of several divisions, yet this is severely lacking among the district's staff. Some data collected by district-developed and supported databases will be inherent in the Aries system, eliminating the need for some or all of these stand-alone systems. Increased data quality and standardization of data fields will result in more efficient, timely, and usable reports.

Staff members indicated they have concerns about the transition to Aeries. They stated that Aeries will be able to provide reliable information on free and reduced-price lunches and the California High School Student Exist Exam (CAHSEE). The expectations are that Aeries could also be utilized to conduct an analysis of staffing needs. However, not all those affected are directly involved in Aeries planning. Employees suggested the establishment of an ongoing committee to support Aeries implementation.

Recommendations

The district should:

1. ● Adopt a single standard for a grade book to minimize training and ongoing support needs.
2. ◒ Review data entry requirements, monitoring, and timing for Aeries data collection. A data management calendar should be developed outlining responsibilities across schools and departments to ensure the district maximizes its funding potential as well as meeting state and federal reporting requirements.
3. ● Work with Aeries to develop a project management plan that accounts for the implementation of these new components and includes monitoring. A project manager should be assigned and the revised plan should be disseminated to all those affected by Aeries.

4. ● Re-evaluate training roles and responsibilities that provide for basic Aeries functions and ABI attendance. The district should develop written procedures, training aides or video of screen shots with narration to assist with training.

5. ◒ Evaluate all existing staff resources at schools and district offices and determine how they could be utilized to ensure ongoing support of Aeries. The district should prepare an Aries implementation plan and report of actions and implement those actions.

Hardware installation and Setup

When distributing new equipment, clear expectations should be communicated to the recipients about what to expect. Examples include the type of equipment received, who will conduct the installation, available training, and the contact person to resolve problems after installation. Technology Services should develop a project management plan that includes this information as well as a time line. Meeting or communications with those affected should occur before distribution.

Recommendation

The district should:

1. ● Develop a hardware installation plan

Application Software Used at District and Site Levels

The district uses a significant number of software applications. The technology plan provides a thorough overview of the educational applications used to support learning. The district tracks other business and productivity software, but the lists were not comprehensive. The district staff provides significant support for applications such as Results Now Significant resources have been dedicated to writing programs to extract data from SASI XP to support Results Now. . Other applications like Ed Stop One and Study Island receive training support from the educational technology office. However, this is insufficient support for software when compared to the extensive list provided. Further, there is no formal priority for the areas that should receive support because they are essential to education or business operations.

The district should consider developing a system of software standards that are implemented districtwide. As noted in findings on the technology plan, software that supports the core instructional program should be part of curriculum adoption. Other software should be vetted by the technology committee with input from the school sites and approval from the cabinet. This process ensures staff acceptance and can lead to a more systemic approach for software purchasing.

The district technology teams should provide support to the district and school site staff to analyze and select the appropriate software solution. Expertise and research practices should be provided to help with the selection of all software systems.

Recommendations

The district should:

1. ● Develop application software standards and implement them districtwide.

2. ◒ Implement application software advisory services.

Technology in the Classrooms

District technology is well above average when compared to the average classroom in the state. The large majority of classrooms has a SMART board, and all classrooms have a digital projector, and networked computers. Many have advanced peripheral equipment such as response clickers or document cameras. There are strong indications that standards guide purchasing. The district has Web-based guidance so that the Purchasing Department and staff can support the school sites and departments purchasing technology hardware. However while most classrooms are well equipped, there are no formal minimum classroom standards. The same is true for educational software, which has a wider variance from classroom to classroom than hardware. This lack of standards has resulted in an ad-hoc approach at many schools, creating a lack of equity for some students and teachers.

The district should utilize professional development to reduce the need for technology support. Professional development should be systematically planned and implemented for every new software or hardware deployment. These should be combined with curriculum and instruction, and other departments to take full advantage of limited resources. The professional development model should not be created in isolation, making full use of the resources of departments and vendors.

The district should utilize professional development to reduce the need for technology support.

The Technology Department should be reorganized and retrained to provide comprehensive support at the school sites, focusing on the needs of teachers and students in classrooms. A needs analysis should be developed for each school site. The district's limited amount of staff members and resources will require the technology support staff to be realigned and sent to schools based on need and provide services that are not limited to hardware or the network. Customer satisfaction should be regularly assessed and analyzed to identify successes and areas for improvement.

Recommendations

The district should:

1. Develop classroom technology standards focused on creating equity for all students and staff (The appendix section of this report includes sample standards).
2. Combine all efforts districtwide for professional development at schools.
3. Reorganize technology support to provide comprehensive support for all schools on problems that cannot be resolved remotely through the help desk.
4. The technology staff deployed to school sites should be organized by geographic area creating maximum efficiency. Staff should be deployed to schools after the problem cannot be resolved at a lower level or remotely.

Job Descriptions and Staffing

This section addresses the organizational structure of the district Technology Department, current job descriptions and the staff members occupying those positions. The purpose of the analysis is to identify opportunities and options to improve department performance, supporting the priorities of the school district. This section will review and provide recommendations in the following areas:

- Organization and reporting structure
- Job description analysis
- Current staffing

General Assessment

The district has a long history of using technology to improve student learning and creating efficiencies in operations management. This history has created a foundation of technology staffing and support that exceeds standards for districts of similar size and many larger districts. In interviews, district and site staff members indicated they receive a superior level of support.

According to the district 2010 technology plan, the district supports 4,179 student computers and approximately 1,000 teacher and administrative computers for a total of 5,179 computers across the network. The district has 12 computer technicians, three help desk technicians, and two network engineers that provide direct support to the schools and administrative offices. Additionally, the district employs 40 TLCs, which are teachers that provide technical support and coaching to other teachers at their schools.

Depending on criteria used to calculate ratios, district computers to support staff ratios range from 273 to 431 to one while the standard for most K-12 educational organizations have ranges from 500 to 1,000 to one.

Source: District Documentation and 2010 Technology Plan	FSUSD Computers to Support Staff Ratios				
	# of Computers (includes student, plus estimated teacher, and administrative - 1000)	# of Computer Technicians	Plus 3 - Helpdesk Technicians	Plus 2 - Network Engineers	Plus 40 - TLC Teachers (40/.01) = 4
Number of Computers and Technical Support	5179	12	15	17	21
Ratios of Computers to Technicians		431:1	345:1	304:1	246:1

While district technology support is impressive, it has created challenges and opportunities. Plans are underway to continue to standardize and modernize the network making it more supportable, with industry standard features such as Microsoft Active Directory replacing the current Novell.

This is a clear opportunity to make full use of the strong technology foundation to streamline staff functions and deliver more resources directly to the classrooms. Aeries is one example of a system that will have more direct impact on teachers, parents and students while reducing the number of redundant tasks currently performed with several databases, which are used to extract data from SASI XP. There are other opportunities to streamline support operations while realizing equal if not improved support for critical district goals. An article in the respected technology publication CoSN suggested that the following:

Highly standardized networks can reduce the number of support staff required by a factor of 10, according to some estimates-from one staff person for every 50 to 70 computers to one for every 500 to 700.

Centralized network management systems can also help control support costs by reducing the travel time to individual schools and permitting security and back-up functions to be handled centrally. In addition, tight restrictions on access to the network can also help contain support costs. One possibility is using thin-client architecture, where all the network intelligence resides in a centralized server and individual computers are used only to communicate with the server. Centralization and cost control can be taken one step further with the use of application service providers (ASPs), in which applications reside on the servers of an outside company that is responsible for many technical support operations.

Over last few years, the district has had challenges in supporting certain key data systems that were developed in isolation as a result of necessity. Examples of these systems include the reporting databases attached to SASI XP, Web-based parent-portal attendance reporting and other databases spread over 150 servers across the district. While these efforts were generally effective, resulting in above-average individualized service, the systems have evolved to a size that requires a significant amount of dedicated time and resources to maintain. These systems have also drawn valuable attention and resources away from the district's student information system (SIS) and goals such as supporting and training teachers to use educational technology tools.

The district wants to reduce costs because of statewide budgetary issues. As part of those reductions, the district is considering a reorganization of the technology staff. This staff is spread across several departments, reporting to several staff members. The reorganization should result in one cohesive department and create efficiencies in technical support, applications, and network infrastructure.

Staffing Comparisons

Data for a comparison of Technology Department staffing was obtained from four California unified school districts with enrollments similar to the district. The comparison districts surveyed were Redlands Unified School District, Manteca, Hesperia, and Downey.

Although comparative information is useful, it should not be considered the only measure of appropriate staffing levels. The state's school districts are complex and vary widely in demographics and resources. Careful evaluation is recommended because generalizations can be misleading if significant circumstances are not taken into account.

FCMAT's comparison took into account the following factors:

- Grade level configuration
- Size of district

- Revenue limit districts

The following table lists the student enrollment and staffing levels of the comparison districts as reflected in the 2008-09 California Basic Educational Data System (CBEDS) as well as data obtained from the comparison districts.

Comparison of Technology Department Staffing In Selected California School Districts

District	Redlands Unified School District	Manteca	Hesperia	Downey
Enrollment	21,427	23,077	22,345	22,464
Total Employees	1,322	1,879	1,918	1,760
Division	Educational Services	Personnel	Business Services	Business Services
Technology Director	Coordinator Technology Services	Systems Administrator Supervisor	Director of Information Technology	Information Technology Manager
Technology Department Staff	Network Specialist Provide administration and maintenance of LAN and Wide Area Network (WAN) system servers,applications, and equipment; assure system stability, security and maximum uptime System Specialist maintain ongoing availability and security of vital computer servers and systems; install, configure, support, and monitor Microsoft server operating systems, server applications, SQL database applications and security and management systems; support other manufacturer operating systems and applications. Computer Specialist plan, organize, and manage the District's e-mail system and e-mail servers; assist with and support the maintenance of the District network and data management systems; instruct and train personnel at various sites in the use of E-mail and related areas Computer Technician perform skilled and responsible work in the installation, maintenance, repair, and support of computers and related peripherals and networks; Desktop Support Technician Provide hardware and software support to end users on site Help Desk Technician Identify, diagnose, and resolve level one problems for users of the servers, personal computer software and hardware, District network, the Internet and new computer technology in a call center	Data Analyst/Technician Provides support and training for end users on SIS, runs reports Computer Technician/ Trainer Develop, adapt, and demonstrate curriculum, maintains and supports desk tops and software 3 Computer Technicians Network Technician Server System Analyst Performs a variety of systems engineering duties of an entry to mid-level degree of complexity with server systems, storage and applications, and/or mid to high-end computing platforms Wireless Analyst Installs and configures LAN/ WAN and wireless internet service provider (WISP) and mid level computing platforms Telecom Analyst Desktop Support Technician Provide hardware and software , operating systems support to end users Secretary Network Analyst Performs system engineering duties LAN/WAN and mid-level computing platforms Technology Support Analyst Coordinates computer labs and provides site level support to end users Nonpublic schools Computer Aides	Information Systems Analyst supporting the Student Administrative Software System (SASI) software; assisting personnel in the use of computer applications; maintaining the database for state reporting Data Systems Analyst Assess network operations, hardware and/ or software; assist personnel in the use of computer applications; ensure availability of required technology Data Systems Analyst SASI Data Systems Analyst Phone and Remote Technical Assistance Data Systems Analyst Software development and Mac Hardware and Software trouble shooting and support. Data Systems Analyst PC hardware and software troubleshooting and support Web Developer - vacant	Student Information Systems Manager Plan and manage SIS create and maintain data bases required to support student testing, supervise support staff System Administrator Servers operating systems (3 FTE) Computer Network Support Technician Help Desk PC Printer Network Specialist Installation, configuration, maintenance and operation of LAN/ WAN networks and equipment (2 FTE) Maintenance Electronic Technician Audiovisual fire alarms phones Programmer Analyst Designs codes tests analyze installs and maintains computer application programs and systems to support administrative and educational computing Information Technology Manager Plan and manage information system applications hardware software LAN/WAN, supervise staff Database Administrator Configuration, maintenance and support database driven applications, Web applications and servers, security auditing
Assessment and Accountability Staff	Coordinator Assessment and Evaluation also reports to the Asst. Superintendent Educational Services		Technology Department	
Educational Technology Staff	Aligned through educational services division		Computer Learning Specialist Maintain operation of educational technology, research potential software application educational technology; train users on software applications and technology.	

**2008-09 CBEDS (Source: CDE DataQuest) and interviews with districts*

Every school district organizes its technology department differently. Of the four districts that responded to the survey, three different organizational structures were reported with technology departments reporting to the assistant superintendent of business services, personnel, or education services. Of the districts surveyed, each Technology Department has a senior position that supervises department staff, and requires at least a bachelor's degree or higher education in computer science or a similar field. Districts segregate technology support differently. There are three areas of technology support: administrative or business systems; instructional and classroom technology; and data management or assessment and accountability.

Included in the administrative and business systems support are the network and infrastructure, servers, hardware and system software necessary to functional administrative, financial and student information systems. Support to maintain the functionality of these systems is divided into hardware and systems software. Technicians generally specialize in a specific system and hardware. In addition, equipment or user support is managed and prioritized through a work-order system with lower-level support directed to technician I level staff and more complex issues filtered up to more senior staff. Every district has at least one systems and network engineer, at least one staff member responsible for installation of hardware, servers, peripherals; at least one staff member responsible for supporting database systems such as the Student Information System, financial and assessment and accountability systems.

In most districts surveyed, there is support for work stations (student and staff) through a remote work-desk system. In some cases, site-level support is also available through a partial FTE technology technician, a stipend position or teacher on special assignment (TOSA). In some, the computer lab technician also resolves low-level user support issues and supports end users with educational software. All districts maintain a help desk management system for tracking and managing support and track site-level support.

Each district organizes data management and assessment and accountability differently. In some cases, all staff report to the director of information technology, and in some districts, the Assessment and Accountability Department reports to the educational services administrator and coordinates with the Technology Department. In either case, the Accountability and Assessment Department tends to manage state testing, develops reports and queries for the administrative staff to assess student progress, provides administrative support and maintains the student assessment data system. In no case did this department provide scanning and clerical support for the assessment process.

Generally, the more work stations (both student and staff) that the district acquires, the more Technology department staff is needed to support those systems. The following chart compares the student-to-computer ratio for the selected comparison schools.

Students per computer	Fairfield Suisun	Downey	Redlands	Hesperia	Manteca
Elementary	4.8	6.5	4.8	4.4	5.1
Middle	2.8	4.9	3.6	3.6	N/A
High	4.2	5.1	4.8	4.7	3.3
Continuation	6.1	3.2	1.5	2.9	4.6
Community Day	1.3	N/A	N/A	0.9	4.3

Specific Comparison with the Redlands Unified School District

Technical Support

The Redlands Unified Technology Services Department is responsible for all network level installation and troubleshooting; the technical staff is responsible for repairing Mac and PC computers. The coordinator of technology services oversees all technology staff, sets department standards and goals, and approves technology-related purchases. To obtain these services, the site staff submits a work order through the district SPMMS system. The following personnel provide technical support and service:

- One network specialist provides network support for the district office, the district transportation and service center sites, and all 22 school networks.
- One systems specialist provides back-office systems support to all district and school sites. This person sets computer standards, coordinates the distribution of new systems, and handles server operating systems, desktop security and management, printing interface, etc.
- Nine technology support technicians provide first-level response for hardware and software problems at all 27 schools and three district office campuses
- One Help Desk Technician provides help with the phone service, schedules fieldwork for technicians, and monitors recurring problems.
- Thirteen schools have a site-funded computer help-desk technician that provides on-site technology support and in-class troubleshooting and support for teachers using technology in the curriculum.
- Additional support personnel include a student information system database analyst, webmaster, postmaster, and communication specialist. The communication specialist provides all adds, moves, and changes support for the VoIP telephone and voicemail system.

The ratio of computers per technician improved in the last four years from the 2004 ratio of 536 to one to the current ratio of 371 to one (based on the March 2008 School Technology Survey). To compensate for this ratio, the sites are required to purchase three-year warranties on computers and printers. Also included in the purchase of new computers is a fee for licensing for network access and deployment software tools. Review of technician logs indicates the initial response time is typically three to six days. Modifications to this plan will be made as required.

California School Technology Statistics – 2007

Comparing FSUSD to Redlands USD

Source: DataQuest - California School Technology Survey -2007 (most recent information available); District web sites	Statistics Comparing Fairfield-Suisun USD and Redlands USD	
	FSUSD	Redlands USD
Number of Schools	31	27
Number of Students	22,496	21427
Number of Student Computers	3926	4209
Student to Computer Ratios	5.73	5.09
Number of Technology Support Staff - does not include ed-tech or clerical staff	25	17
Computers over 4+ years of age as of 2007 (%)	46%	43%
Expected Change in new computers as of 2007 (%)	2%	1%
Computers in Classrooms (%)	68%	59%
Average Time to Fix Hardware (days)	2.73 days	2.83 days
Tech Support Staffing per 1000 Students	.19 FTE	.31 FTE
Curriculum Support Staffing per 1000 Students	.07 FTE	.25 FTE

Organizational and Reporting Structure

The district is studying the feasibility of consolidating the Technical Services, Assessment and Evaluation, and Educational Technology departments to create efficiencies and reduce costs. Possible cost saving might include the reduction of technical support and the reorganization and consolidation of departments along with creating efficiencies in technical support, applications, and network infrastructure.

The district should consider completing technology reorganization in two steps to minimize the impact of these changes. The first step is to combine Technical Services and Assessment into a single department along with creating support efficiencies. The second step is to merge Educational Technology with Technology Services including changing the way staffs work both through the reorganization, and in the use of new applications and infrastructure. These steps may be combined if the district chooses to move more aggressively to create organizational efficiency. The technology staff has not developed the necessary collaboration regarding jobs and systems and has worked in isolation of the district's technology vision. The sites often lack critical information when specific employees are on extended absences.

Step One

The first step of reorganizing and consolidating the Technical Services and Assessment and Evaluation departments would be to take the following measures:

- The elimination of the director of technical services position and replacement with the position of director technology support services. The position would supervise the combined department.
- Assignment of the technology support staff to report to a single network supervisor and the completion of a review of the staffing of technology support positions and the help desk. Reductions may be possible to align with the computer ratios of similar districts and through the utilization of advanced management tools.
- Creation of an Assessment and Application Support Department. All database management and reporting functions would be consolidated into one area reporting to the director of technology support services. By moving the management of databases into one area, the staff can more effectively collaborate on how to create efficiencies in management and reporting. Clear responsibilities for critical database management and reporting should be assigned to each staff member in this area.
- The transfer of benchmark assessment processing to the schools. Currently, evaluation and assessment office staff members process every scan sheet for every teacher in the district to generate the results of benchmark assessments taken by students. This change will support the tests to be formative by reducing the turnaround time it takes the district level processing. The savings from this change can be used to purchase the necessary high-speed scanners at schools and obtain professional development on how to utilize the system and analyze results.
- The elimination of TLC stipends. The effect of the TLC staff at school sites has been varied as noted by principals, interviews with the TLC staff and observation of the consultant team while visiting school sites.
- The transfer of bilingual instructional assistants to Student Services. The staff that reports to the Assessment and Evaluation Department, coordinates CELDT testing, and provides CAHSEE support should report to director, EL Services or director, student services. This staff should continue to coordinate with the staff that manages the student information system and the assessment database.
- The combination of these departments in a common work area. The new combined technology support services staff should be moved to a common work area on the same floor to increase communication and improve workflow.
- The cross-training of staff members in the areas of network support area assessment and application support. A minimum of two staff should be trained to support critical network and database systems.

Efficiencies could be improved through the use of new systems and applications, which cannot be separated from the recommended staffing changes. As part of staff reorganization, new applications such as Aeries, Microsoft Active Directory and others can be used to create efficiencies and define staff duties in the newly reorganized department. Some of the essential systems and process listed below should be considered part of reorganization.

- Aeries Implementation: Implementation of Aeries could be used to define staff roles and create efficiencies. All aspects of Aeries ABI should be used to provide data to teachers and the district staff. The reporting capabilities could be utilized to eliminate the redundant reports being created with employee-developed databases.
- Network Management System: Proceeding with network upgrades and moving to systems like Microsoft Active Directory would improve network management through reduced staff time.
- Remote desktop support and management: Using remote desktop management would allow the technology support staff and help desk staff to provide direct support to schools and departments remotely. If this change were adopted, the staff should be trained to use and monitor these tools.
- A new help desk management system: Implementation of this type of system would allow more effective tracking of support requests, assignment of technology staff and resolution of support issues.
- An inventory of backup equipment: There is some indication that the sites and district office have back-up equipment, but consideration should be given to implementing an inventory of back-up equipment that can quickly replace failing equipment. Even with less staff, this can reduce down time for staff.

Step Two

The second step of organization and consolidation would entail the following:

- Refinement of the job descriptions, alignment of staff to positions, and the retraining of staff members as needed. As part of this step, the district would integrate the educational technology office function with the Technology Services Department. The objective would be to focus the entire department on delivery of services to the primary point of educational service delivery, the classroom. The role of the educational technology staff would be to work as part of the technology support services team, to fully implement the educational technology plan.
- A review of secretarial requirements and adjustments of support need. Consideration would be given to sharing secretarial services.
- A review of programming and database support needs. Following staffing reorganization in step I and the implementation of Aeries and other new data management systems, the district could evaluate the job programming and database support needed for these new systems.
- The use of technology application coaches. A system of coaches could be used to train teachers and staff on critical management applications and educational software. Research has shown that the coaching model has resulted in significant impact on classroom practices.

Efficiencies could continue to improve through the use of new systems and application that would increase district control of data and create staffing efficiencies. Implementing the systems and process listed below should be considered part of the reorganization.

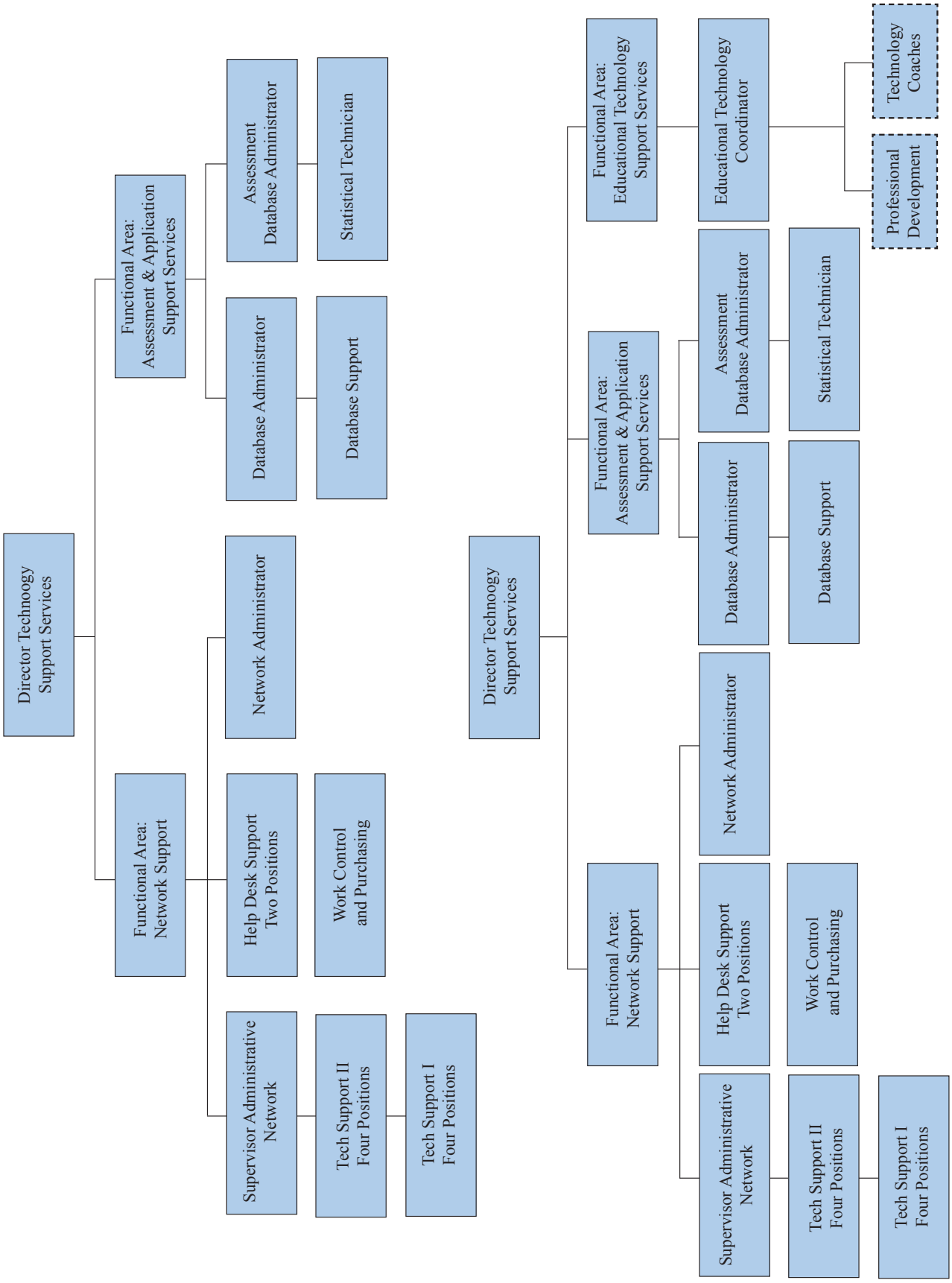
- The transfer of Results Now to an industry-standard package. The Results Now system has accomplished the important goal of helping the staff utilize data to inform instruction. However, other commercial assessment systems exceed the performance of Results Now. The district could switch to a commercial system that does not depend on a single in-house programmer for support.
- Implementation of all aspects of Aeries to eliminate redundant databases. Following the initial implementation of Aeries, the district could transition away from peripheral database systems to manage SASI XP data. One example would be moving from the internally developed OASIS system to the Aeries Parent Portal, which provides parents with access to student information.
- A transition to an integrated Web-management system. These products allow for improved communication with fewer staff members to support the system.
- A transition from Novell to Microsoft Active Directory. Network management with Novell is expensive and requires numerous servers that necessitate additional staff support. The move to Active Directory will promote a more efficient staffing structure.
- A transition from the current microwave network to a fiber network. This would reduce the staffing costs of maintaining the microwave network.
- Implementation of Microsoft Outlook to manage all district e-mail. This would increase functionality and better manage support. Currently, numerous servers manage an e-mail system that does not provide the functionality desired by the staff.
- Centralization and reduction of the number of servers for applications and data storage: Advanced data storage tools such as VMware would reduce the number of servers in the district and centralize those remaining in the data center.
- A transfer to ASP hosted applications. Many districts provide a high level of technology services with a significant reduction in support costs by moving from in-house supported software and data systems to ASP services and applications.
- Implementation of a hardware replacement plan. If the district is to effectively reduce the daily support needed for hardware, it should have an equipment replacement plan. An effective replacement plan will allow the district to maintain student and teacher access to desired resources with fewer support staff.

Recommendation

The district should:

1. ● Consolidate the Technical Services and Assessment and Evaluation departments into one department by taking the detailed steps described above.

   The following organizational charts depict the recommended changes of Step 1 followed by Step 2.


Director Technoogy Support Services
Functional Area: Network Support
Network Administrator
Help Desk Support Two Positions
Work Control and Purchasing
Supervisor Administrative Network
Tech Support II Four Positions
Tech Support I Four Positions
Functional Area: Assessment & Application Support Services
Assessment Database Administrator
Statistical Technician
Database Administrator
Database Support
Director Technoogy Support Services
Functional Area: Network Support
Network Administrator
Help Desk Support Two Positions
Work Control and Purchasing
Supervisor Administrative Network
Tech Support II Four Positions
Tech Support I Four Positions
Functional Area: Assessment & Application Support Services
Assessment Database Administrator
Statistical Technician
Database Administrator
Database Support
Functional Area: Educational Technology Support Services
Educational Technology Coordinator
Technology Coaches
Professional Development

Job Descriptions

The technology staff does not operate as a cohesive and efficient team. The staff is divided into departments and positions that do not effectively work together to implement systems that support district goals. FCMAT evaluated job descriptions, interviewed staff members and reviewed the lists of the job duties provided by most technology staff members. While these descriptions are standard to most educational organizations, a review of the actual responsibilities provided by the employees found that there is considerable specialization. This creates significant performance problems. When a staff member with a certain skill is unavailable, the task usually remains undone until that person becomes available. The IT and Assessment and Evaluation offices do not make efforts to develop cross-training or redundancy concerning vital hardware or software systems. In the implementation of the new Escape financial software, additional cross-training clearly would have been useful.

The current approach creates a system of dependence in which staff members rely on IT or the assessment staff to complete tasks that they are capable of performing.

The current approach creates a system of dependence in which staff members rely on IT or the assessment staff to complete tasks that they are capable of performing. For example, the help desk staff runs labels for school sites, and the assessment staff collects, scans and returns the results to teachers. While the district has TLCs to provide support and training at schools, the results vary widely by school. One administrator indicated a TLC was ineffective while another complimented the training provided by another TLC.

Implementing new hardware and software applications will require a review and revision of job descriptions and duties. Current implementations including the move to Aeries and transition from Novell to Microsoft Active Directory are significant opportunities to review and change the way positions and people are organized.

An effective review and revision of staff members and duties would include the following changes:

- Creation of a single position to supervise technology support. Under this scenario, the district would eliminate the position of director of technical services and create the position of director of technology support services.
- Creation of a new area in the Technology Support Services Department called Network Support Services. This area would report to the director technology services. The staff would focus on using improved network and desktop management to improve problem solving. The technician-to-computer ratio would change to between 500 and 1,000 to one, reflecting the use of improved management tools and implementation of replacement standards. The following changes would also be implemented:

    - The supervisor of the administrative network would report to the director technology services. This position would supervise all technology support 1 and 2 staff members and manage the support of all desktop and network systems at schools sites and departments. The director would also be involved in reorganization and regularly review support staff allocations to sites and departments.
    - The technology support 1 and 2 staff members would report to the supervisor of the administrative network and have the additional responsibility of using remote

desktop management tools to manage problems. The coverage zones adjusted to ensure inclusion of all school sites and departments.

- The help desk technicians would report to the director of technology services with responsibilities adjusted to eliminate tasks that can be completed by the school site staff. The technicians would focus on remotely resolving primary support problems. The staff members in these positions will need training in remote desktop management and software systems including Aeries, assessment software and other highly used systems.
- Work Control would be responsible for supporting and reviewing all purchasing and contracted support services. Increase percentage of role in direct support through help desk or as tech support 1.
- The network administrator would report to the director technology of support services. This position's responsibilities would be revised to include management of Microsoft Active Directory, the E-mail system, a transition to centralized server management, and other responsibilities that may be necessary in the implementation of reorganization.

- Creation of a new area in the Technology Support Services Department called Assessment and Application Support Services. This area would report to the director of technology services. The staff would be reorganized to combine the IT staff responsible for database management with the Assessment and Evaluation staff. The new area would be responsible for all databases ranging from Aeries to Results Now. The near-term focus would be to consolidate the various databases managed in more than 150 servers districtwide into a more efficient and manageable system. Therefore, this area would require constant monitoring and evaluation of progress and reevaluation of the roles and responsibilities of staff. This change also includes the following:
  - The database administrator would report to the director of technology support services. This position would responsible for Aeries, Oracle databases, Web-based communication systems and other database systems used by employees in district offices and schools. This position would be responsible for working with departments to create data entry standards that improve data quality. Other responsibilities would include all Aeries data to support district-level compliance reporting such as CSIS/CALPADS, CBEDS, the consolidated application, other district reports, and support of the business office on attendance reporting. Near-term responsibilities include the full implementation to Aeries, the transfer from OASIS to Aeries Parent Portal, the switch to the Web communication management system, and the consolidation of various databases used to generate reports from SASI XP. The database administrator would work directly with the assessment database administrator to develop processes to align Aeries with the assessment database.
  - Database support would report to the database administrator and provide support managing Aeries and all other database systems as needed. Supports consolidation of disparate database systems. Additional duties would include supporting all data reporting for school sites and district departments as needed, and providing training and support to the school site staff on the use of database systems to generate the necessary reports. Support for CSIS/CALPADs, CBEDS and all other reporting would be included as needed.

- The assessment database administrator would report to the director of technology services, support the district assessment database, and provide support and training to the school sites and district departments on the use of the assessment system. This position would also work with the database administrator to ensure data quality and support district-level strategic reporting. A near-term responsibility would be supporting the transition from central benchmark assessment processing to a school-based process.
- The statistical technician would report to the assessment database administrator and be responsible for developing reports from Aeries and the district assessment database for CELDT, CAHSEE, GATE and other programs and departments as needed. This position would also support training school site staff in using Aeries and the district assessment database for reporting.

In a comprehensive review and revision of staff members and duties, the district would also consider adjusting the roles and responsibilities of the coordinator educational technology and creating new positions to support professional development and technology coaching. This would entail the following:

- Creation of a new area under the Technology Support Services Department called Educational Technology Support Services. This area would support the implementation of the educational technology plan, provide professional development, and support technology coaching at school sites. This area would also interact with all other areas of the Technology Support Services Department to help align goals to support the educational technology plan.
- The educational technology coordinator would report to the director of technology support services and secondarily to the directors of elementary and secondary education. This position would be responsible for coordinating the implementation of the district educational technology plan and coordinating districtwide professional development on technology integration. The coordinator would support site-based coaching by supervising and training technology coaches, work with appropriate departments regarding the adoption of new educational software, monitor the progress of the educational technology plan, and work with committees to develop updates and reports.
- As funding allows the district should also consider adding positions to support professional development for the school site staff. These positions would be full- or part-time consultants with the primary responsibility of providing professional development on using technology-based tools to support student learning. The position(s) would report to educational technology coordinator.
- The district may also consider using technology coaches to support teacher use of technology-based resources in the classroom. These could be full- or part-time position(s) or full-time certificated staff members with experience in using technology to support improved student achievement.

Recommendations

The district should:

1. ● Review and revise the staff's roles and responsibilities to reflect the reorganized department as described above. Duties should be developed based on the critical functions necessary to support essential technology systems. Job descriptions should be aligned to support district goals for technology and should include the following steps:

2. ◒ Develop job descriptions to support reorganization as detailed above regarding the roles and responsibilities of the coordinator educational technology and the new positions to support professional development and technology coaching.

3. ● Evaluate staff roles and responsibilities after reorganization and adjust as needed It is strongly recommended that following the initial reorganization, senior district management work with the director technology services to evaluate and make adjustments to roles and responsibilities of staff as needed. This evaluation should take place following the initial implementation of Aeries so staff performance and skills can be aligned to future needs.

Board Policies

General Assessment

The district has board policies on technology, including "Employee Use of Technology" dated May 2001 and "Student Use of Technology" dated June 2002. However, board policies have not been updated for five years. The district lacks board policies and administrative regulations regarding instruction that include references to the use of any technology-based systems. While both of the policies mentioned above include the standard language and topics, they do not reflect current technologies used by students and teachers.

The district educational technology plan 2010-2013, documents provided by the district, FCMAT interviews, and site visits confirm that schools work to meet the board-approved instructional goals. The Information Technology Office, Assessment and Evaluation Office and the Educational Technology office demonstrated that they support the district's instructional goals and acceptable use policies for students and staff. However, some senior district staff members and site administrators strongly perceive that there are no clear policies regarding technology adoption.

Board Policies

No board policies on technology have been updated since June 2002, which is particularly problematic given the use of communication tools such as Wikis and blogs that effectively did not exist in K-12 education at that time. The study team also viewed supposedly official school websites in which the domain name and effectively the site were owned and operated by a single teacher. The lack of current policies to guide management on using these and other technology tools will create significant challenges as the district proceeds to increase the use of technology to support instruction.

Recommendations

The district should:

1. ○ Review and update all board policies related to technology. This is especially important considering increased technology use by the staff, students and parents. As the district implements Aeries with access for the staff and parents, the policies related to access and privacy should be updated. The teaching staff uses online tools, including Web pages, blogs and e-mail, and policy updates are necessary to clearly define acceptable use. The staff can utilize resources provided by the California School Boards Association (CSBA), GAMUT online services to access templates.

2. ○ Train the staff in these policies once they have been adopted. It is important to review key policy changes at meetings of the cabinet, principal, and faculty.

Board Policies on Instruction

The various technology-related departments support board policies on instruction, but these policies have not been updated to reflect technology use in supporting core instruction.

Implementing technology-based systems such as Aeries, Scholastic Read 180, and Study Island has a significant impact on student, teacher and parent access to instructional information and confidential student data. Board policies or administrative regulations are not necessary for every new program. However, many districts update their policies to address new technologies for instruction or the communication of confidential student information.

Recommendations

The district should:

1. ◒ Update the board policies on instruction (6100s) to include references to the alignment of technology to support core instructional goals. In many districts, specific references to technology-based resources are included in board-adopted instructional policies. The district should consider linking the adoption of strategic technology resources related to instruction to board policies for adopting other instructional materials.

2. ○ Align the Technology Department's goals to support the board-approved instructional goals of the district.

Technology Department Support of Board Policies on Instruction

The technology office does not provide consistent and coordinated support of instruction policies on a systemwide basis. Through interviews and a review of documents, the team found consistent examples showing that the Technology Department either does not support instructional goals or inadvertently blocks progress towards those goals.

The standards-aligned elementary report card implementation is being piloted at the identified elementary school sites; however there is lack of coordination and collaboration between sites and minimal guidance from the district. Professional development by the district is lacking as well.

The pilot of the research-based ELA intervention program (Read 180) for targeted ELs, EDS, and SWDs has begun at the selected junior and senior high school sites, but both sites have had problems with the program setup and implementation. Following are few examples that were identified in interviews:

- One site received constant opposition from Technology Services when it wanted to change how the equipment was to be installed, even though the changes requested were focused on better meeting the needs of students. In addition, Technology Services was not able to provide an analysis of the existing site equipment to determine whether the proposed software applications would function properly. Overall, this resulted in additional costs for the site to implement Read 180.
- The district did not provide either site with professional development on how to use the application with these students, and district technical support has been minimal.

Implementation of the grade K-6 Envision math adoption has begun, but because of lack of technical support and professional development from the district, many teachers struggle in using the technology components of this curriculum with their students. Support in this area is provided at the school-site level and other than the study groups, it is limited to one staff member asking another for assistance.

Recommendations

The district should:

1. ○ Update board policies on instruction (6100s) to include references to the alignment of technology to support core instructional goals. In many districts, specific references to technology-based resources are included in board-adopted instructional policies. The district should consider linking the adoption of strategic technology resources related to instruction to the board policies for adopting other instructional materials.

2. ○ Align the Technology Department's goals to support the board-approved instructional goals of the district. While the current technology plan reflects alignment of technology goals to instructional goals, there is no real connection to the functional goals of the Technology Department to drive the daily activities of the staff. Board policy can help to bridge this disparity.

Design Network Safeguards

This section of the assessment reviews the network operations in the following areas across the enterprise:

- Disaster Recovery Readiness
- Data Backup and Restore Systems
- Security and Threat Management
- Updating Hardware and Software Assets to Keep Infrastructure Current

Network Security

The district lacks a network security policy, which is essential to IT governance in any organization. The district has a centralized antivirus server for installation and updates. It has an undocumented, informal procedure for wireless and password security. Although some elements of the security policy exist in practice, they should be documented in policy. This type of policy would provide a baseline for networks and infrastructure so that all staff members can have a common understanding of the networking environment. A network security policy usually includes the following components:

- Information on the longevity and scope of the server and infrastructure logs that are maintained and how these are stored
- Guidelines on anti-virus software, wireless communications, and password policies and how these are applied throughout the district
- The district acceptable use policy

The district lacks logical network diagrams (drawings of networking components and their interconnections). This reduces the IT staff members' ability to troubleshoot and remediate problems that are not within their areas of expertise. A lack of diagrams can also result in increased costs if a staff member that is unfamiliar with the system troubleshoots an issue. Developing logical network diagrams will enhance efficiency when IT individuals resolve problems or discuss topics with vendors.

IT staff members stated that a disaster recovery plan is in development but unavailable. An IT department with no disaster recovery plan lacks the resources to quickly recover from an outage and restore district services. This type of plan should continually be tested and updated.

Each site has local resources and authentication for staff/site daily activities. This configuration has advantages and disadvantages. One advantage is that if connection to the district office is lost, each site can function until the connection is restored, so there is little interruption of service. The disadvantage is that each site must maintain the staff and the hardware necessary to support these functions. Increasing the bandwidth between sites and providing redundant links allows the district to consolidate network servers, staff and services to the district office.

Each district information system requires a separate log-on, requiring staff members to spend a significant amount of time and effort. A consolidated approach to system log-on will help reduce the time spent by the support staff dealing with lost passwords or user identification issues and reduce the security risk.

The district uses a single firewall, which presents a single point of failure for all Internet connectivity and access. The best approach is to use high availability or failover with all critical network components.

The district lacks a centralized storage system. Using local storage on each server increases the overall cost of systems and support over time. Utilizing a shared storage system will allow all servers to be connected to a centralized device for the maintenance of data.

The district lacks centralized monitoring, alerting, and performance tracking (to include server room temp monitoring). The most effective, proactive service support uses an automated network monitoring system to provide historical data on infrastructure and server components. This system will allow the IT Department to be more proactive regarding network and server issues and provide the information necessary to plan for hardware upgrades. It also increases efficiency by providing automated infrastructure and environment monitoring. The same approach applies to server room environmental monitoring. An environmental monitor will provide an alert for certain environmental characteristics in the server room such as a high temperature.

VLAN routing between the administration and educational is available through authentication. Adding an access-control-list (ACL) level of security will prevent network traffic from intersecting, but provide exceptions for those who require them such as the IT department. Adding additional layers of security will prevent data from being compromised between the two networks if any single configuration is compromised.

Network Security Policy

A network security policy has not been developed for districtwide use. An industry-standard network security policy encompasses many items including the existing acceptable use policy. A network security policy provides a baseline for networks and infrastructure for all staff to have a common understanding of the current networking environment. Some of the items usually included within a network security policy are the longevity and scope of server, infrastructure logs, anti-virus guidelines, wireless communications, and password policies and how each is applied throughout the district. A network security policy is an essential component to IT governance in any organization.

Recommendations

The district should

1. ● Create a district network security policy. This would allow all staff members to have a common understanding of the current networking environment and include items such as the longevity and scope of server, infrastructure logs, anti-virus guidelines, wireless communications, and password policies and how each is applied throughout the district.

2. ● Develop network diagrams. The district lacks logical network diagrams (drawings of networking components and their interconnection). This practice prevents the ability for IT staff to troubleshoot and remediate issues which are not within areas of expertise. This point lends itself to the lack of cross-training interaction and an increased overhead if an unfamiliar staff member is troubleshooting an issue. Developing logical network diagrams can save time and cost when IT individuals troubleshoot issues or discuss topics with vendors.

3. ● Incorporate a disaster recovery plan into the technology master plan. A disaster recovery plan is also known to be a portion of business continuity planning. An IT Department with no disaster recovery plan lacks the resources to recover from a power outage quickly and restore district services. The staff indicated that the disaster recovery plan was in development but unavailable. The industry best practice is to continually test and update the plan.

Local Resources for Staff/Site Daily Activities

Each site has local resources for staff/site daily activities. This configuration poses an advantage and a disadvantage. The advantage is that if connection to the district office is lost, each site has the ability to function until the connection to the district office is restored. The disadvantage is that each site must maintain the staff and hardware necessary to support these functions. Increasing the bandwidth between sites as well as providing redundant links allows the district to consolidate network servers, staff and services to the district office.

Recommendation

The district should:

1. ● Develop authentication processes for all local resources.

Help Desk

In contrast to many organizations, much of the Fairfield-Suisun's IT Department documentation is available online to quickly assist site staff. This use of Web services reduces the load on the help desk staff call volume by allowing the site staff to utilize the website as a tier 1 support before a work order is opened. However, even though the help desk operating procedures are available online, the help desk is severely underutilized. The district staff tends to call support staff directly rather than calling a centralized help desk for dispatch and tracking of work orders. The help desk should be the central location for all service requests and for dispatching of work orders. This will relieve workload on support staff.

Recommendation

The district should:

1. ◒ Develop written documentation and policies to support the use of the help desk

Log-Ons

Each district information system utilizes requires a separate log-on. A consolidated approach to system log-on will help in two ways. First, the staff will no longer need to have passwords reset if forgotten or if accounts are locked out. Second, this alleviates the security risk present when individuals are required to remember multiple passwords without writing them down. Individuals inevitably will make each password the same or write down passwords.

Recommendation

The district should:

1. ● Create consolidated system log-on procedures for all school sites.

Firewall

The district uses a single firewall that presents a single point of failure for all Internet connectivity and access. The best approach is to employ the use of high availability or failover with all critical network components.

Recommendation

The district should:

1. ◒ Use high availability or failover with all critical network components.

Centralized Storage and Monitoring

The district does not use centralized storage. Using local storage on each server increases the overall cost of systems and support over time. Utilizing shared storage will allow all servers to be connected to a centralized device providing storage.

The district lacks centralized monitoring, alerting, and performance tracking (to include server room temp monitoring). To provide top-level, proactive service support, a network monitoring system should be in place. A system that will provide historical data on infrastructure and server components will allow the IT Department to be more proactive regarding the network and server issue while providing the ability to better plan for upgrades of hardware as well as alerting services for configured criteria. This can provide an increase in efficiency by providing an automated rather than manual server, infrastructure and environment monitoring. The same approach applies to server room environmental monitoring. An environmental monitor will provide alerting for potentially harmful conditions in the server room, such as high temperatures.

Recommendations

The district should:

1. ● Utilize shared storage to allow all servers to be connected to a centralized device.
2. ◒ Develop proactive service support and a network monitoring system.

VLAN Routing

VLAN routing between the administrative and educational networks is available through authentication. An ACL level of security should be added to prevent traffic from intersecting but allow by those who require it such as the IT department. Adding layers of security will prevent the compromise of data between the two networks if any one configuration is compromised. This level of security takes the same approach as high availability of network infrastructure components.

Recommendation

The district should:

1. ● Develop protocols for an added level of security to prevent the compromise of data between networks.

Appendices

A: Recommendation Matrix
B: Project Implementation– Example
C: Sample Instructional Computer Replacement Plan and Policy
D: Sample Baseline Standards for Classrooms
E. Assessment Systems Summary
F: Sample Job Descriptions
G: Study Agreement

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	**Appendix E – Recommendation Matrix**													
2	Fairfield-Suisun Unified School District - Technology Review - May 2010													
3	*Recommendation Matrix*								***Priority 1***	***Priority 2***	***Priority 3***	***Status***	***% Complete***	***Cost***
4	**4. Technology Plan Assessment**													
5														
6	**A. Stakeholder Involvement**													
7	*Create a technology implementation committee - Priority 1*								*1*					
8	*Develop a communication plan to engage all stakeholders - Priority 3*										*3*			
9														
10	**B. Curriculum Driven Technology Goals**													
11	*Create an organizational structure linking Curriculum and Instruction and Educational Technology - Priority 1*								*1*					
12	*Recommendation: Develop a process to vet and approve and prioritize educational technology software - Priority 1*								*1*					
13	*Link educational technology and curriculum adoptions - Priority 2*									*2*				
14														
15	**C. Professional Development**													
16	*Recommendation: Coordinate professional development with other departments - Priority 1*								*1*					
17	*Develop strategies to prioritize and expand professional development - Priority 2*									*2*				
18	*Continue to expand online training opportunities - Priority 3*										*3*			
19														
20	**D. Infrastructure, Hardware, Technical Support and Software**													
21	*Develop Baseline Standards for Classrooms - Priority 2*									*2*				
22	*Develop a plan that builds back from the classroom - Priority 2*									*2*				
23														
24	**E. Funding and Budget**													
25	*Develop a funding priorities for all components of the plan - Priority 1*								*1*					
26	*Create a district technology refreshment plan - Priority 1*								*1*					
27	*Create budget efficiency through interdepartmental collaboration – Priority 1*								*1*					

	A	I	J	K	L	M	N
2	Fairfield-Suisun Unified School District - Technology Review - May 2010						
3	*Recommendation Matrix*	***Priority 1***	***Priority 2***	***Priority 3***	***Status***	***% Complete***	***Cost***
28	*Identify specific priority needs and seek funding for needs - Priority 2*		*2*				
29							
30	**F. Monitoring and Evaluation**						
31	*Develop monitoring and evaluation plan that includes project implementation - Priority 1*	*1*					
32	*Collaborate with curriculum and professional development office on all evaluation that impacts teaching and learning – Priority 1*	*1*					
33							
34	**5. Analysis Regarding Current Level of Support**						
35							
36	**A. Network Administration:**						
37	*Network Infrastructure Standards – Priority 2*		*2*				
38	*Hardware and Software Inventory – Priority 3*			*3*			
39	*Desktop Replacement Plan – Priority 3*			*3*			
40	*Cross Training for Technology Staff – Priority 1*	*1*					
41	*Implement Remote Management System – Priority 1*	*1*					
42	*Implement a Help Desk System – Priority 1*	*1*					
43	*Identify Support Rolls and Responsibilities – Priority 1*	*1*					
44	*Trouble Request Procedure – Priority 1*	*1*					
45							
46	**B. Website development and support:**						
47	*Website Standards and Support for Sites – Priority 2*		*2*				
48	*Intranet Requirements for Sharing Information – Priority 2*		*2*				
49	*Implement a Web Management Tool – Priority 3*			*3*			
50							
51	**C. Email support for district and site level staff**						
52	*Migrate E-Mail from GroupWise – Priority 2*		*2*				
53							
54	**D. Student Attendance System:**						

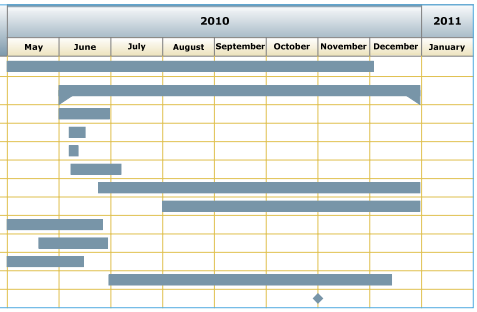
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
2	Fairfield-Suisun Unified School District - Technology Review - May 2010													
3	*Recommendation Matrix*								***Priority 1***	***Priority 2***	***Priority 3***	***Status***	***% Complete***	***Cost***
55	*Grade Book Standards – Priority 1*								*1*					
56	*Data Entry Standards for Aeries – Priority 2*									*2*				
57	*Aeries Roll Out Plan – Priority 1*								*1*					
58	*Aeries Basic Training – Priority 1*								*1*					
59	*Aeries Support Plan – Priority 2*									*2*				
60														
61	**E. Financial Reporting System**													
62														
63	**F. Hardware installation and setup**													
64	*Hardware Installation Deployment – Priority 1*								*1*					
65														
66	**G. Application software used at district and site levels**													
67	*Application Software Standards – Priority 1*								*1*					
68	*Application Software Advisory Services – Priority 2*									*2*				
69														
70	**H. Technology in the classrooms**													
71	*Classroom Technology Standards – Priority 1*								*1*					
72	*Professional Development at Schools– Priority 1*								*1*					
73	*Technology Support at Schools – Priority 1*								*1*					
74														
75	**6. Review of the Job Descriptions and Staffing of the Technology Department**													
76														
77	**A. Staffing comparisons of districts of similar size and structure**								*1*					
78														
79	**B. Organizational and Reporting Structure**													
80	*Step 1 of reorganization, combine Technical Services and Assessment and Evaluation departments into one department - Priority 1*								*1*					
81	*Improve efficiencies through the use of new systems and applications - Priority 1*								*1*					

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
2	Fairfield-Suisun Unified School District - Technology Review - May 2010													
3	*Recommendation Matrix*								***Priority 1***	***Priority 2***	***Priority 3***	***Status***	***% Complete***	***Cost***
82	*Step 2 of reorganization, Ed-Services into Technology Services organization - Priority 1*								*1*					
83	*Continue to improve efficiencies through the use of new systems and applications - Priority 1*								*1*					
84														
85														
86	**C. Job Descriptions**													
87	*Revise roles and responsibilities of Technical Service and Assessment and Evaluation Staff as part of the Step 1 reorganization - Priority 1*								*1*					
88	*Develop job descriptions to support Step 2 reorganization – Priority 2*									*2*				
89	*Evaluate staff roles and responsibilities after reorganization and adjust as needed -- Priority 1*								*1*					
90														
91	**7. District Board Policies on the Use and Integration for District Level and Site Based Instructional Strategies**													
92														
93	**A. Board Policies**													
94	*Update board policies - Priority 3*													
95	*Provide training to staff on updated board policies - Priority 3*										*3*			
96														
97	**B. Technology Department Support of Board Policies on Instruction**													
98	*Board policies on instructional technology - Priority 3*										*3*			
99	*Align technology department goals - Priority 3*										*3*			
100														
101	**8. Design Network Regarding Safeguards of the Data Residing on the Systems**													
102	*Network security policy - Priority 1*								1					
103	*logical network diagrams - Priority 3*										3			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
2	Fairfield-Suisun Unified School District - Technology Review - May 2010													
3	*Recommendation Matrix*								***Priority 1***	***Priority 2***	***Priority 3***	***Status***	***% Complete***	***Cost***
104	*Disaster recovery plan - Priority 1*								1					
105	*Local resources and authentication - Priority 3*										3			
106	*Help desk operating procedures - Priority 2*									2				
107	*Separate logons for each system/service - Priority 2*									2				
108	*redundant firewalls - Priority 1*								1					
109	*centralized storage - Priority 3*										3			
110	*centralized monitoring - Priority 3*										3			
111	*VLAN routing - Priority 2*									2				
112														
113														
114														
115														
116														
117														
118														
119														
120														
121														

2010 Technology Projects Example - Fairfield-Suisun USD

Number	Task	Resource	% Complete	Start	End	Duration
1	Technology Plan Assessment			5/1/2010	12/2/2010	154
2	Develop a Functional Technology Master Plan	Technology Committee		6/1/2010	12/30/2010	153
2.1	Select Committee Members	Mary and Adam		6/1/2010	6/29/2010	21
2.2	Hold First meeting	Group		6/7/2010	6/15/2010	7
2.3	Assign Responsibilities	Group		6/7/2010	6/11/2010	5
2.4	Develop Time line	Group		6/8/2010	7/6/2010	21
2.5	Publish Timeline	Mike		6/24/2010	12/30/2010	136
2.6	Schedule Monthly Meetings	Mary		8/1/2010	12/30/2010	109
3	Standardize Desktop images	Adam		5/1/2010	6/25/2010	40
4	E-Mail Access Policy	Adam		5/20/2010	6/28/2010	28
5	Technology Purchasing Policy	Susan		5/1/2010	6/14/2010	31
6	Implement Help Desk System	Tech Department		6/30/2010	12/13/2010	119
7				11/1/2010	11/1/2010	



April 19, 2010

Appendix F – Monitoring Example.

Activities	Timeline	Person(s) Responsible	Monitoring & Evaluation
Complete the implementation plans for the Technology Bond Funded Projects	Completed	JE	Plans published
Establish and maintain a status report on the Technology Bond Funded Projects and implementation of recommendations from the 2006 Assessment Report/	Completed Review bi-annually	JE	Reports prepared for Superintendent
Deploy the SAN – Wide Area network storage solutions (including VM Ware, Sharepoint)	June 2010	JE	Migration to new systems complete
Deploy the SAN – Wide Area network storage solutions (including SASI hardware and backup equipment upgrade)	Completed	JE	Equipment deployed (Work orders)
Deploy Subfinder, the District online application for substitute teachers	June 2010	JE	System activated System reports
Migrate to Microsoft 2003 to replace GroupWise	June 2009	JE	System activated
Deploy the VOIP servers to support the new phone system	June 2011	JE	Servers deployed (work orders)

Example

Fairfield-Suisun Unified School District

Example Replacement Policy for Instructional Computers

Approved by the Technology Committee July 201x

Recommendation: The Petaluma City Schools has made a significant investment in technology to improve student achievement over the last several years. This investment has resulted in a robust infrastructure and the installation of 4179 computers in the district's classrooms.

Technology Committee recommends that the Board now adopt a policy for the ongoing replacement of these instructional computers to ensure that:

1. Students and teachers have equitable access to updated computers capable of supporting the district's curriculum standards and instructional programs,

2. The district can reduce the total cost of ownership of computers,

3. School sites and the district can better plan for and manage their technology needs.

The Technology Committee recommends the following policy:

1. The district will support the ratio of students to instructional, Internet connected computers adopted in the Petaluma City Schools District Master Plan for Technology: 5 students per computer for secondary schools, and ten students per computer in elementary schools.

2. The district will replace instructional, Internet connected computers needed to maintain the target student to computer ratios on a five-year cycle as part of the annual operational budget.

3. All new computers will continue to be purchased with a three-year warranty that includes on-site repair. During the fourth and fifth year of life, the district will repair a desktop computer as long as the cost of repair does not exceed 25% of the replacement value of the computer. Computers that are older than five years will not be maintained by the district and will be declared surplus at the discretion of the site. If the site opts to retain equipment longer than five years, the maintenance and support of this equipment will be the individual site's responsibility.

Under this policy, schools may acquire additional computers through site funds, grants and/or donations to further decrease the ratio of students to computers. However, the

district will not be obligated to replace computers that exceed the district-adopted target ratios.

Background: The Board has made a significant investment over the last three years to give students and teachers access to the technology tools that support student achievement of high curriculum standards. As a result, the district has been able to deploy Internet connected, instructional computers in classrooms, library/media centers and computer laboratories over the last five years. All schools now meet or exceed the student to computer ratio goals set out in the Technology Master Plan. This investment has enabled the district to implement a range of instructional applications to facilitate student achievement, to support teachers' efforts to meet individual student academic needs and to make record keeping and student assessment timely and efficient.

However, most of these computers were acquired through special funding and other one-time funding, and most state technology programs, such as EETT, have been cut or suspended. In the absence of a stable funding stream for computers, schools keep computers well beyond their useful life and are unable to plan for their future needs. The district tries to maintain aging computers, which further strains limited resources and increases the overall cost of ownership of computers. The inconsistent funding for computers also results in inequities between schools. The combination of obsolescent computers and uneven access is a barrier to full implementation of critical district-wide applications, such as the Edusoft assessment, integrated learning systems and Accelerated Reading and Math, and the Aeries based information systems.

The Technology Committee recognizes that most schools currently have student to computer ratios that are lower than the targets set in the Technology Master Plan. The district would need a total of 1,356 computers to maintain the target ratios at each school site. **While there are now 5179 computers in the district according to the last CTAP Technology Survey completed in 2007, over 45% of the District's computer were over four years of age, and many are not functional or have limited usefulness. Current estimates have the percentage 4+ computers at over 60%.** Clearly, this policy would not resolve all school site technology needs or replace all existing computers, nor would it preclude individual schools from using site or non-district funds, grants or donations for additional computers. However, the policy would give the sites a stable, baseline level of support, set clear boundaries for the district's future financial commitments for computers, reduce overall costs of ownership, and give students in each school equitable access to reliable computers that are capable of supporting the district's curriculum.

The district has established technology standards for computers that support the district's curriculum, and that are aligned with state standards. The district's donations policy ensures that donated computers are consistent with the district's standards and the Technology Master Plan. By adopting the computer replacement policy, the Board will ensure continued and equitable access to critical instructional tools, lower total costs of ownership and enable school sites to plan more effectively.

Costs: Based on its research, the Technology Committee recommends a five-year replacement cycle of computers. This policy will result in standardized, up-to-date computers that will allow the district to reduce costs of technical support and to implement critical district wide applications.

Ongoing, Annual Costs: The Technology Committee estimates that the cost of the five-year replacement plan will be $528,752 to replace 661 instructional computers per year. The average cost would be $26 per student per year. This policy does not take into consideration replacement of administrative computers or network infrastructure components.

It is recommended that funds be allocated to school sites based on the formulae in the Excel Chart, which also provides a detailed analysis of costs by school.

The Technology Committee projects that the per computer maintenance costs will decline over time as a larger proportion of the computers are covered by warranty and aging, unreliable computers are removed from the classroom.

Funding: The Technology Committee recommends that the costs of the five-year replacement policy be part of the district's annual operational budget.

Fairfield-Suisun Unified Schools District
Example - Instructional Computers Replacement Plan - Five Year Cycle
To Meet Target Student to Computer Ratios

Draft - May 2010

	Annual Funds Needed for Computer Replacement Plan - Draft							
Site	**Student Population [1]**	**# of Current Computers [2] (Not Availble)**	**Current Student to Computer Ratio [3] (Not Availble)**	**Target Ratio: Student to Computer [4]**	**# of Computers Needed to Maintain Ratio**	**# of Computers to be Replaced Annually (1/5 of column F)**	**Annual Replacement Costs [5] [6]**	**Annual Cost per Student [7]**
Elementary Schools				**10:1**				
Any Blanc Elementary	613				61	12	$9,808	
Anna Kyle Elementary	702				70	14	$11,232	
B. Gale Wilson Elementary	769				77	15	$12,304	
Bransford Elementary	503				50	10	$8,048	
Cleo Gordon Elementary	486				49	10	$7,776	
Cordelia Hills Elementary	592				59	12	$9,472	
Cresent Elementary	672				67	13	$10,752	
Dan O. Root Elementary	741				74	15	$11,856	
David A. Weir Elementary	478				48	10	$7,648	
E. Ruth Sheldon Elementary	506				51	10	$8,096	
Fairview Elementary	563				56	11	$9,008	
H. Glen Richardson Elementary	538				54	11	$8,608	
K. I. Jones Elementary	674				67	13	$10,784	
Laurel Creek Elementary	771				77	15	$12,336	
Mary Bird Elementary Community	19				2	0	$304	
Nelda Mundy Elementary	728				73	15	$11,648	
Oakbrook Elementary	438				44	9	$7,008	
Rolling Hils Elementary	504				50	10	$8,064	
Suisun Elementary	519				52	10	$8,304	
Suisun Valley Elementary	268				27	5	$4,288	
Tolanes Elementary	711				71	14	$11,376	
Subtotal Elementary	**11795**	**0**			**1180**	**236**	**$188,720**	**$16**
Secondary Schools				**5:1**				
Angelo Rodriguez High	2346				469	94	$75,072	
Armijo High	2473				495	99	$79,136	
Charles L. Sullivan Middle	736				147	29	$23,552	
Crystal Middle	751				150	30	$24,032	
Dover Middle	582				116	23	$18,624	
Fairfield High	1857				371	74	$59,424	
Grange Middle	554				111	22	$17,728	
Green Valley Middle	846				169	34	$27,072	
Mary Bird Secondary Community	94				19	4	$3,008	
Sem Yeto Continuation High	387				77	15	$12,384	
Subtotal Secondary	**10626**	**0**			**2125**	**425**	**$340,032**	**$32**
Total	**22421**	**0**			**3305**	**661**	**$528,752**	**$24**

[1] Enrollment figures from Data Quest reported in 2008-2009
[2] Number of Computers from FCMAT document request - March 2010 - (Information not available)
[3] Current student to computer ratio - computed = Students / # of Current Computers (Number of computer by school not available)
[4] Target Ratio Students to Computer - As an example 10:1 for Elementary and 5:1 for Secondary was picked. The ratio should come from the Technology Plan
[5] Annual Replacement Costs = # of Computers to be Replaced Annually * $800
[6] Estimated 2010 cost of $800 per multi-media, Internet capable instructional computer and desktop software.
[7] Annual cost per student for Elementary and Secondary

	=Feature Part of ELAR	=Feature Not Part of ELAR	Major Focus					
Assessment System Title and Publisher	DataDirector (Riverside Publishing)		Edusoft Assessment System (Riverside Publishing)		Online Assessment Reporting System (OARS) (Red Schoolhouse Software)		Results Now Fairfield Suisun Unified School District	
Electronic Learning Assessment Resources (ELAR)	**?**	**Major Focus**	**Contains Feature**	**Major Focus**	**Contains Feature**	**Major Focus**	**Contains Feature**	**Major Focus**
A. Sources of student academic assessment data								
1. State administered norm-referenced test. (CAT/6).	●		●	●	●	●	●	N/A
2. California Standards Test (CST).	●	●	●	●	●	●	●	N/A
3. California High School Exit Exam (CAHSEE).	●	●	●	●	●	●	●	N/A
4. California English Language Development Test (CELDT).	●	●	●	●	●	●	●	N/A
5. School or district performance tests.	●	●	●	●	●	●	●	N/A
6. Assessments incorporated in the district/school adopted textbooks.	●	●	●	●	●	●	●	N/A
7. Student grades.	●	●	●		⊘	●	●	N/A
B. Sources of relevant background data that could impact achievement								
1. Student ethnicity.	●	●	●	●	●		●	N/A
2. Student gender.	●	●	●	●	●	●	●	N/A
3. Socioeconomic background of students (free & reduced lunch, etc.).	●	●	●	●	●	●	●	N/A
4. Drop-out rates and/or attendance data.	●	●	⊘		⊘		Unknown	N/A
5. Student participation in special programs (Title I, Sp. Ed., GATE, ELL, etc.).	●	●	●	●	●	●	●	N/A
6. Adequate Yearly Progress (AYP) rating for the school/district.	●	●	⊘		⊘		⊘	N/A
C. Reporting and analysis of student assessment and background data								
1. District-wide reporting and analysis of assessment results.	●	●	●	●	●	●	●	N/A
2. School level reports suitable for school/grade-level instructional planning	●	●	●	●	●	●	●	N/A
3. Displays and compares student data with comparable API schools by grade level.	●	●	⊘		⊘		⊘	N/A
4. Displays data of the same students over two or more years:	●	●	●	●	●	●	●	N/A
a. By group (i.e. grade 4 year one to grade 5 year two)	●		●		●		●	N/A
b. By individual students from one year to another.	●	●	●	●	●	●	●	N/A
5. Allows for disaggregation of student data according to background factors.	●	●	●	●	●	●	●	N/A
6. Allows for disaggregation by specific intervention or program participation	●	●	●	●	●	●	●	N/A
7. Allows for analysis of data at the school level by grade and/or subject.	●	●	●	●	●	●	●	N/A
8. Allows for analysis of data at the classroom level.	●	●	●	●	●	●	●	N/A
9. Allows for analysis of data at the student level.	●	●	●	●	●	●	●	N/A
10. Allows user to select all reports based on current-year class lists.	●	●	●	●	●	●	●	N/A

11. Sorts/filters students by proficiency levels in terms of meeting standards.	●	○	●	○	●	○	●	N/A
12. Reports for parent(s)/guardian(s) on progress of their students.	●		●		●	○	⊘	N/A
13. Reports for parent(s)/guardian(s) on school level progress.	●		●		⊘		⊘	N/A
14. Reports for students on their own progress are provided.	●		●	○	●	○	●	N/A
15. Charting and graphing functions are integrated into the system	●	○	●		●	○	●	N/A
D. Standards used to guide ELAR design								
1. The ELAR notifies users of the limitations of data from particular assessments for informing instructional decisions.	●		⊘		⊘		⊘	N/A
2. It is clear that the assessments used are appropriate to the instructional decisions suggested or implied for this ELAR.	●	○	●	○	●	○	●	N/A
3. For any test not part of the CA assessment program, documentation of alignment with the California Program Assessment Blueprints and/or the National Assessment of Educational Progress is provided.	⊘		⊘		⊘		⊘	N/A
4. Instructional resources that link to the assessments are provided.	⊘		●		⊘		⊘	N/A
5. If lessons/unit plans are provided, information about how they are aligned to the California Content Standards is provided.	⊘		⊘		⊘		⊘	N/A
6. If the ELAR offers assessments or tests, reliability and validity information are provided.	●	○	●		●	○	●	N/A
7. The ELAR meets known and established standards for interoperability based on the Schools Interoperability Framework (SIF).	⊘		⊘		⊘		⊘	N/A
8. ELAR meets the minimum requirements of Family Education Rights and Privacy Act (FERPA).	●	○	●	○	⊘		⊘	N/A
E. Features that allow users to modify or add elements								
1. Reports on state assessment data can be locally customized.	●	○	●	○	●	○	●	N/A
2. Users can modify assessment items already included in the ELAR item-bank or database.	●	○	●	○	⊘		⊘	N/A
3. Users can customize the work area of the ELAR.	⊘		●		⊘		⊘	N/A
4. Users can easily link, branch, or add other web-resources to the ELAR.	⊘		●	○	⊘		⊘	N/A
5. Users can purchase desired components or features of larger comprehensive programs.	●	○	●	○	●		⊘	N/A
6. The ELAR allows users to input locally developed instructional intervention strategies.	⊘		●	○	⊘		●	N/A
7. The ELAR allows users to update student records, as needed, to ensure that reports are based on the most current information available.	●	○	●	○	●	○	●	N/A

8. Ownership of data and ability to transfer between districts/programs is described.	●	○	●	○	●	○	●	N/A
9. Method for data input is clearly described.	●	○	●	○	●	○	●	N/A
10. This ELAR allows for linking to the *CA School Information Services* (CSIS)	●		●		⊘		⊘	N/A
11. This ELAR allows for linking to the *CA Longitudinal Pupil Achievement Data System* (CALPADS)	⊘		●		⊘		⊘	N/A
F. Other features								
1. If this ELAR links to educational websites or other resources, the resources are correlated to CA Content Standards.	⊘		●		⊘		⊘	N/A
2. Links to research-based instructional strategies for educators that can be used to address achievement gaps identified by the ELAR.	⊘		●		⊘		⊘	N/A
3. Any test item banks used in the ELAR are aligned to the CA Content Standards.	●	○	●	○	⊘		⊘	N/A
4. Strategies and tips for parents to assist in addressing student academic needs at home are aligned to assessment results.	⊘		⊘		●		⊘	N/A
5. Assessments and related instructional strategies that address the issues of students with special educational needs are included.	●	○	⊘		●		Unknown	N/A
6. Calendar program for scheduling assessments and related instructional resources is provided.	⊘		●		⊘		⊘	N/A
7. The ELAR includes a student data management and record-keeping system that includes:	●	○	⊘		⊘		●	N/A
a. student-grades								N/A
b. records of work completed and at what level	●	○	●		⊘		●	N/A
c. portfolio assessment results	●		⊘		●		⊘	N/A
d. anecdotal information	●		⊘		⊘		⊘	N/A
e. teacher-observations	●		⊘		⊘		⊘	N/A
f. addressing special needs	●		⊘		⊘		⊘	N/A
g. actions taken to address achievement gaps	●		⊘		⊘		⊘	N/A
8. A planning template is provided to enable users to develop school-level plans based on data used in the ELAR.	●		⊘		⊘		●	N/A
9. A planning template is provided to enable users to develop classroom- or student-level educational plans.	⊘		●		⊘		⊘	N/A
G. Support for using the ELAR								
1. Online 'help-desk' is included as part of the ELAR package.	●		●	○	●	○	⊘	N/A
2. Telephone 'help-desk' is included as part of the ELAR package.	●	○	●	○	●		⊘	N/A
3. Availability of tech support, hours, days, etc., is described.	●	○	●	○	●	○	⊘	N/A
4. Training on how to use the ELAR is included in the price of the package	●	○	●	○	●	○	⊘	N/A
5. Streaming video tutorials are available on using the ELAR.	⊘		●	○	⊘		⊘	N/A

6. User prerequisite skills needed to use the ELAR are described.	⊘		⊘		⊘		⊘	N/A
7. User prerequisite knowledge of assessments is described.	⊘		⊘		⊘		⊘	N/A
8. Sample reports generated by the ELAR are provided with explanations.	●	?	●	?	●		●	N/A
9. Information regarding cost(s) and process for obtaining ELAR upgrades is described.	●	?	●	?	●		⊘	N/A
10. User feedback on the ELAR is available.	●		●	?	●	?	●	N/A
11. Resources for obtaining professional development for using the ELAR are listed.	⊘		●	?	⊘		●	N/A
H. Technical requirements								
1. The hardware and network requirements necessary for use of the ELAR at the school, district, county, or regional level is described.	●	?	●	?	●		⊘	
2. Information about the necessary bandwidth for optimal use of the ELAR in a variety of situations is provided.	●	?	●	?	●		⊘	
3. The "total cost of ownership" to obtain, install, and maintain the necessary equipment for using the ELAR is itemized (including licensing, technical support, additional network software/plug ins, etc.).	●		⊘		●		⊘	
4. File format and/or software to which this ELAR will interface for uploads/downloads is clearly described (Excel, ACSI, Access, FileMaker Pro, real-time, etc.).	●	?	●	?	●		⊘	
5. If the product is web-based, security requirements are clearly detailed	●	?	●	?	●		⊘	No web access outside district
I. Development and Research								
1. The method for relating student assessment data to ELAR-generated conclusions or suggested instructional strategies is explained.	⊘		●		⊘		Unknown	

The analysis provided is derived from the CLRN assessment of Educational Learning Assessment Resources analysis page and information gathered from the Fairfilield Suisun Unified School District for Results Now. While results now has evolved into a relatively robust system for one that was developed in house, it lacks some key functions and features of other commercial products currently available in the market. Of the utmost importance is the basic code design of the system that creates functionality. When interviewed, the sole developer of the program noted that some of the code use to write the program was substandard and could create problems. The other areas notable in the comparison is that all other products are fully web based and accessible both inside the district and outside of the district. To support this functionality, significant security protocols must be built into the system and the system must meet the minimum requirements of the Family Education and Privacy Act. While other commercial product do, there is no evidence that Results Now does. The support needed for assessment programs is significant. Updates that enable the loading of STAR data and other

Redlands Unified School District

SYSTEMS SPECIALIST

DEFINITION

Under general supervision, maintain ongoing availability and security of vital computer servers and systems; install, configure, support, and monitor Microsoft server operating systems, server applications, SQL database applications and security and management systems; support other manufacturer operating systems and applications, as needed; clearly communicate technical solutions in a user-friendly, professional manner; provide one-on-one, end-user training, as needed; conduct hardware and software inventory database maintenance and reporting; perform other related work as required.

ESSENTIAL FUNCTIONS

Perform a variety of assignments associated with monitoring and controlling computer operating systems; provide daily network support and troubleshooting; monitor email, firewall, and file/print servers daily for optimum performance; configure and maintain Windows 2000 network and Windows XP/2000 computer system; analyze system faults; troubleshoot and run diagnostic tests on operating systems and hardware to detect problems; initiate preventive maintenance on the operating systems and respond reactively to system/environment problems; configure workstations; install security patches and virus protection software; monitor Intranet site resources and secure system for security, product quality, and operational functionality; evaluate, install and configure developed software during various phases of testing and deployment; review requirements and assist in the implementation, configuration, and security of IT systems; review and prepare documentation for system configurations, tests and software installations; provide technical support, training, and security education; work in a team environment to accomplish all tasks; provide resolution information and collaborate with other teams to complete impact analysis where appropriate; provide detailed solution documentation; perform other duties as assigned or required.

EMPLOYMENT STANDARDS

KNOWLEDGE AND ABILITIES

Knowledge of:

Microsoft server operating systems including Windows 2000 and Windows 2003;
Microsoft Windows 2003 network services including AD, Group Policies, DNS, WINS, and IIS;
Microsoft server applications including Exchange 2003, SQL 2005, and SMS;
Microsoft desktop operating systems including Windows 98, 2000, XP, and Vista;
Microsoft desktop application suites including Microsoft Office 97, 2000, XP and 2003;
Symantec applications including AntiVirus Corporate Edition and Backup Exec;
Products and services that meet overall security objectives;
Networked computer system environments and device capabilities;
Local Area Network (LAN) management and configuration principles;
Electrical safety procedures;
Effective telephone skills and techniques of customer service.

Ability to:

Identify, troubleshoot and resolve a wide range of technical network and computer-related problems;
Identify, evaluate, and solve network problems;
Support and train end-users in a wide range of software applications as needed;
Read, understand, and apply complex technical information;
Master new computer technology;
Communicate effectively in oral and written form;
Establish and maintain an effective working relationship with those contacted in the course of work;
Relate effectively with racially and ethnically diverse staff, students, and community;

Ability to (continued):
Design and implement new technical solutions;
Coordinate and oversee maintenance and changes to the production environment;
Develop and update processes and procedures;
Work effectively with cross-functional teams to define technical requirements and identify/resolve technical issues;
Work independently;
Analyze data and implement solutions;
Design and evaluate telecommunication and computer systems;
Design and manage complex projects involving people and technology;
Solve complex technical problems involving integrated operating systems and hardware platforms;
Assess and prioritize multiple tasks, projects, and demands.

Skills:
In some positions where typing is less than 25% of the job function, the typing requirement may be waived at the discretion of the District administration.

EDUCATION AND EXPERIENCE

A Bachelor's Degree in Computer Science; **AND** three (3) years of computer systems installation and maintenance experience; **OR** an equivalent combination of education and experience.

REQUIRED LICENSES AND/OR CERTIFICATES

Must possess one or more of the following certifications: MCSE (Microsoft Certified Systems Engineer), or MCSA (Microsoft Certified Systems Administrator). Other network and/or industry certifications or experience may be substituted where appropriate. This classification requires the use of a personal or District vehicle while conducting District business. Must possess a valid and appropriate California driver's license; an acceptable driving record; qualify for insurability with the District's insurance carrier.

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

Strength:
Work may involve lifting, carrying, pushing and/or pulling of objects weighing up to 75 pounds with frequent lifting of objects that weigh up to 50 pounds; physical dexterity in limbs and digits necessary to operate hand tools and power tools used in the electronic trade; ability to bend, stoop, climb, grasp, and reach.

Working Conditions:
Must be able to sit for prolonged periods of time in front of a computer; may require a significant amount of walking during the course of the work day.

Additional Requirements:
May be required to work outside the traditional work schedule. May be called out to work off-shift in emergency situations. According to the needs of the organization, some incumbents in this job class may be required to obtain specific technical certifications.

Pre-placement Physical: Class I

Redlands Unified School District

HELP DESK TECHNICIAN

DEFINITION

Under general supervision, provide technical software, hardware, and network problem resolution to District computer users by performing question/problem diagnosis and guiding users through step-by-step solutions in a call center and/or on-site environment; clearly communicate technical solutions in a user-friendly, professional manner; provide one-on-one, end-user training as needed; assist Computer Technicians; troubleshoot network printer problems; pass more complex end-user problems on to Computer Technicians; conduct hardware and software inventory database maintenance and reporting; and perform other related work as required.

ESSENTIAL FUNCTIONS

Identify, diagnose, and resolve level one problems for users of the servers, personal computer software and hardware, District network, the Internet and new computer technology in a call center and/or on-site environment; communicate solutions to end-users; provide one-on-one end-user problem resolution over the phone for District approved PC and Macintosh software; deliver, tag, set up, and assist in the configuration of end-user PC and Macintosh desktop hardware, software and peripherals; diagnose and resolve end-user network or local printer problems, PC and Macintosh hardware problems and mainframe e-mail, Internet dial-in, and local area network access problems; coordinate timely repair of PC and Macintosh computer equipment covered by third party vendor maintenance agreements; perform minor desktop hardware repair for PC and Macintosh computer equipment and peripherals that are not covered by third-party vendor maintenance agreements; help install local area network cabling systems and equipment such as network interface cards, hubs and switches; assist Network Technicians in creating materials for end-user frequently asked questions, and other related functions; and other duties as assigned.

EMPLOYMENT STANDARDS

KNOWLEDGE AND ABILITIES

Knowledge of:

Desktop operating systems, various software applications, and basic hardware for the PC and/or Macintosh;
Principles and theories of network systems and management;
Internet technologies and products;
Basic understanding of electrical safety procedures;
Effective telephone skills and techniques;
Customer Service.

Ability to:

Deliver technical customer support over the phone in a call center environment;
Identify, troubleshoot and resolve a wide range of technical, computer-related problems;
Make the distinction between Level One and Level Two end user problems;
Identify, evaluate, and solve end-user workstation problems;
Support and train end-users in a wide range of software applications, as needed;
Read, understand, and apply complex technical information;
Master new computer technology;
Communicate effectively in oral and written form;
Establish and maintain an effective working relationship with those contacted in the course of work;
Relate effectively with racially and ethnically diverse staff, students, and community.

Skills:
In some positions where typing is less than 25% of the job function, the typing requirement may be waived at the discretion of the District administration.

EDUCATION AND EXPERIENCE

Education:
Completion of the twelfth grade and supplemented by coursework and additional training in the use of computers, software, peripherals and the various systems currently in use in the district.
One year college level coursework and Microsoft Certified Professional certification desired.

Experience:
One year providing end-user phone and/or on-site support for current PC and/or Macintosh desktop and application software OR one year installing, upgrading, troubleshooting, and repairing personal computers in a network environment. Previous customer service experience strongly desired.

REQUIRED LICENSES AND/OR CERTIFICATES

This classification requires the use of a personal or District vehicle while conducting District business. Must possess a valid and appropriate California driver's license, an acceptable driving record, and qualify for insurability with the District's insurance carrier.

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

Strength:
Work may involve lifting, carrying, pushing and/or pulling of objects weighing up to 75 pounds with frequent lifting of objects that weigh up to 50 pounds; physical dexterity in limbs and digits necessary to operate hand tools and power tools used in the electronic trade; ability to bend, stoop, climb, grasp, and reach.

Working Conditions:
Must be able to sit for prolonged periods of time in front of a computer. May require a significant amount of walking during the course of the work day.

Pre-placement Physical: Class I

REDLANDS UNIFIED SCHOOL DISTRICT

JOB DESCRIPTION

TITLE Coordinator, Technology Services

QUALIFICATIONS

EDUCATION:	Required	B.A. or B.S. in Computer Science and/or equivalent related field.
	Desired	Possession of MSCE or CNNA Certificate, experience in an education setting
EXPERIENCE:	Required	A minimum of two years experience working in the technology field that includes some management experience. Experience in installing hardware and software and troubleshooting network problems.
PERSONAL QUALIFICATIONS:		Character, personality, and proper social capability to relate effectively with racially and ethnically diverse staff, students, and community. Demonstrated ability to work with a wide variety of community groups and organizations.

BRIEF DESCRIPTION OF POSITION

Under the direction and supervision of the supervisor**,** supervises and coordinates the Technology Services Department including the development of fiscal management practices and procedures; directs the efficient operation of the department; and evaluates assigned personnel; and performs related work as required.

DUTIES AND RESPONSIBILITIES

As assessed by the supervisor, the outcomes of the Coordinator, Technology Services' job performance will be as follows:

1. Leadership and assistance in the implementation of policies and procedures for network maintenance and computer operations will be effectively provided.

2. Efforts to supervise and, where necessary, participate in the evaluation, installation, testing and maintenance of complex networks and the software on the District's Wide Area Networks (WAN) and Local Area Networks (LAN) will be ably provided.

3. Effective management of the budget and expenditures of the department will have been provided.

4. Informed direction and support for the purchase, maintenance and troubleshooting of all types of equipment related to all aspects of technology will be provided.

5. Supervise and manage the District E-mail server.

6. Assist and develop District e-mail policy and practices.

7. Maintain District Acceptable Use Policies.

8. Manage and oversee the installation and maintenance of the District's Telecommunication system.

9. Supervise and oversee the District web page.

10. Coordinate and ensure that the updates of all school site School Accountability Report Cards and web pages are maintained.

11. Assist schools, as needed, with the implementation of technology related grants.

12. Work closely with departments, sites and divisions to ensure optimum acquisition, deployment installation, maintenance, utilization, repair and security of available technology.

13. Assist in the development and implementation of the District's Information Technology Plan, responding to short and long term administrative and instructional technology needs will be provided.

14. Implement a District computer maintenance and upgrade program.

15. Effectively direct and coordinate communication efforts to the district administration regarding policies, practices and procedures related to professional and instructional technology.

16. A current knowledge of trends, events and potential challenges in the area of technology will be continuously maintained.

18. Work with vendors, selected hardware and software and provided project management for LAN, WAN, Internet, PC and data hardware and software.

19. Communications regarding incidents and/or situations which might impact the district, its divisions or its schools will have been consistently provided to appropriate district office/school personnel in a timely and effective manner.

20. A positive relationship will built and maintained with the county Technology Department.

21. Active and consistent efforts will have been made to maintain or improve the external and internal image of the district, its divisions and its schools.

22. Annual objectives deemed appropriate by the supervisor will have been established.

23. Appropriate data in support of the status of annual objectives and job description elements will have been gathered.

24. Other duties assigned by the supervisor will have been effectively accomplished.

Redlands Unified School District

COMPUTER SPECIALIST

DEFINITION

Under the general direction of the supervisor, plan, organize, and manage the District's E-mail System and e-mail servers; assist with and support the maintenance of the District network and data management systems; instruct and train personnel at various sites in the use of E-mail and related areas; perform other related work as required.

ESSENTIAL FUNCTIONS

Perform a variety of technical functions including installing, configuring, and managing Windows NT 4.0, Windows 2000, and Linux networks and servers; evaluate, install, test, implement, monitor, and maintain complex systems, e-mail software and hardware, application software, and appropriate hardware; maintain network backups of E-mail, licensing, security, and virus protection; provide remote and on-site E-mail administration; maintain network documentation and disaster prevention and recovery plans; communicate effectively with end users both orally and in writing; work with student attendance system (Aeries) both at the District and site levels; other duties as assigned.

EMPLOYMENT STANDARDS

KNOWLEDGE AND ABILITIES

Knowledge of:

Windows NT 4.0 and 2000 Server, Local Area Networks in a multi-platform environment;
Ethernet and Windows 95, 98, Windows 2000 Pro, Red Hat Linux 7.XXX ;
Data Base Management Systems programming;
Macintosh networking;
HTML to customize the District Internet mail client interface if it is required and District Home Pages.

Ability to:

E-mail System Management

- Evaluate, plan, and design an Enterprise e-mail system
- Specify the hardware and software requirements for the District e-mail system
- Install, configure, manage, and secure a comprehensive e-mail system
- Evaluate, configure, and support e-mail clients that need to work with the District electronic mail system
- Troubleshoot E-mail system and experience of supporting and training end users to utilize e-mail more productively

Networking

- Install, configure, manage, and secure Windows NT 4.0, Windows 2000, and Linux networks
- Add servers and services to the existing District networks
- Configure, manage, and troubleshoot DNS, WINS, DHCP, IIS, and FTP servers in a multiplatform networking environment
- Manage user accounts and groups
- Backup and restore data in a network environment

EDUCATION AND EXPERIENCE

Education:

Completion of the twelfth grade and supplemented by coursework and additional training in the use of computers, software, peripherals, and the various systems currently in use in the District.

Desirable:

Bachelor's Degree in Computer Science or an equivalent related field; possession of MSCE, CCNA, RHCE, Network+ Certificate from Microsoft, Cisco, Red Hat, or CompTIA

Experience:

Minimum of two (2) years of experience managing Microsoft NT or Server 2000 Local Area Networks in a multi-platform environment.

Desired:

Experience in installing hardware and software; experience with Ethernet and Windows 9X, 2000 and Windows NT; data base programming software (Microsoft Access, SQL).

REQUIRED LICENSES AND/OR CERTIFICATES

If driving a vehicle is required in the course of work, operator must possess a valid and appropriate California driver's license; have an acceptable driving record; qualify for insurability by the District's insurance carrier.

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

Strength:

Work may involve lifting, carrying, pushing, and/or pulling of objects weighing up to 75 pounds with frequent lifting of objects that weigh up to 50 pounds; physical dexterity in limbs and digits necessary to operate equipment used in the electronic trade.

Working Conditions:

Duties will require working both at the District Office and at other sites throughout the District.

Pre-placement Physical: Class I

Redlands Unified School District

COMMUNICATION SPECIALIST

DEFINITION

Under general supervision, plan, organize, manage, and maintain the telephone systems at various sites throughout the district; instruct and train district personnel at various sites in the use of the telephone system; have a working knowledge in multi-platform environments; and do other related work as assigned.

ESSENTIAL FUNCTIONS

Perform a variety of technical functions including evaluate, install, test, implement, monitor, and maintain complex systems, application software, and hardware on the district's communication systems; maintain network backups, licensing, security protection; provide remote and on-site voice-mail administration; manage and maintain network documentation and disaster prevention and recovery plans; manage and troubleshoot switches and other communication equipment; anticipate and resolve issues related to resource use and other technical areas; communicate effectively with end users both orally and in writing; implement and maintain local area network system; perform periodic updates to district's communication systems; other duties as assigned.

EMPLOYMENT STANDARDS

KNOWLEDGE AND ABILITIES

Knowledge of:
Methods, procedures, materials and techniques used in the installation and maintenance of communication systems including both hardware and software;
Methods of testing and troubleshooting hardware/software problems;
Remote and on-site voice-mail administration;
Local area network systems.

Ability to:
Skillfully install, maintain, and support a variety of communications hardware and software products;
Perform skilled tasks utilizing electronic and diagnostic equipment/software in support of the district's telephone system;
Maintain network backups, licensing, and security protection;
Schedule work and organize activities in ways to optimize working time;
Communicate effectively in oral and written form;
Establish and maintain an effective working relationship with people contacted in the course of work;
Relate effectively with racially and ethnically diverse staff, students, and community.

EDUCATION AND EXPERIENCE

Education:
Equivalent to the completion of the twelfth grade, including training on Northern Telecom and TIE systems and switches

Experience:
A minimum of five (5) years experience managing telephone networks, including experience in installing hardware and software and trouble shooting network problems. Experience with Ethernet, Windows 9X, and Windows NT & NT server preferable, but not required. Experience on Tie Communications equipment and Northern Telecom equipment.

LICENSE AND CERTIFICATES

Possession of a valid and appropriate California driver's license; qualify for insurability with the District's insurance carrier.

Certification Requirements or Equivalent:

TIE communications systems installation, testing, and maintenance;
Northern Telecom meridian 1 options 21 through 71 installation;
Northern Telecom X11 feature administration;
Northern Telecom Option 11E installation and database;
Northern Telecom Options 21E through 81C installation and maintenance;
Northern Telecom Meridian mail installation and maintenance;
Williams Communications certificate in LAN/WAN integration.

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

Strength:

Work may involve lifting, carrying, pushing, and/or pulling of objects weighing up to 75 pounds with frequent lifting of objects that weigh up to 50 pounds; physical dexterity in limbs and digits necessary to operate equipment used in the electronic trade.

Pre-placement Physical: Class I

Redlands Unified School District

NETWORK SPECIALIST

DEFINITION

Under general supervision, maintain ongoing availability and security of vital district network; install, configure, support, and monitor Cisco Systems routers, switches, voice, video, and security devices; support other manufacturer Local Area Network (LAN) devices, as needed; clearly communicate technical solutions in a user-friendly, professional manner; provide one-on-one, end-user training, as needed; conduct hardware and software inventory database maintenance and reporting; perform other related work as required.

ESSENTIAL FUNCTIONS

Provide administration and maintenance of LAN and Wide Area Network (WAN) system servers, applications, and equipment; assure system stability, security and maximum uptime; monitor access to system resources and track connectivity and security problems; analyze problems and implement solutions according to District procedures; perform circuit and network troubleshooting to diagnose system problems; analyze system functionality; identify, locate, and resolve complex network problems to ensure minimal disruption of critical applications; monitor and review system log reports and network documentation; resolve and repair problems within scope of authority; monitor system environment, utilization, and system log reports; resolve connectivity, performance, security, configuration and access problems; monitor system for operating efficiency, make corrective adjustments to data management settings, and assure optimum performance and system integrity; install and configure hardware, equipment, and system software applications, including remote site deployments, as required; install, configure, and update network server software upgrades, file sharing, and domain security protocols; detect and correct software errors; provide referral to Technology Services Coordinator when problems occur which are beyond the skills of the Network Specialist, and track the problem until it has been resolved; oversee design and implementation of individual solutions and ongoing maintenance and management of the network; provide resolution information and collaborate with other teams to complete impact analysis where appropriate; provide detailed solution documentation; perform other duties as assigned or required.

EMPLOYMENT STANDARDS

KNOWLEDGE AND ABILITIES

Knowledge of:

Methods of administrating and managing Cisco hardware/software;
Methods, procedures, material, and techniques used to design, configure, and install routers/switches/ firewall/VPN concentrators;
Methods to resolve network problems using Cisco Works and other network tools;
Design elements and implementation strategies for new technical solutions;
Security issues with regards to networks under management, and ability to respond to those issues;
Methods and procedures to ensure that products and services meet overall security objectives;
Networked computer system environments and device capabilities;
LAN and WAN management and configuration principles;
Networks, security guidelines and industry “best practices;”
Fiber Optic, Coaxial, DS3, ATM, T1, fractional T1, and Ethernet transmission systems;
Private line, Point to Point, and frame relay WAN protocols;
Telecommunications industry and infrastructure;
Fast-paced, stressful environments;
Techniques and skills to design and evaluate telecommunications and network systems;
Techniques and skills to design and manage complex projects involving people and technology;
Techniques and skills to solve complex technical problems involving integrated operating systems and hardware platforms;

Ability to:
Identify, troubleshoot, and resolve a wide range of technical network and computer-related problems;
Identify, evaluate, and solve network problems;
Support and train end-users in a wide range of software applications as needed;
Read, understand, and apply complex technical information;
Master new computer technology;
Communicate effectively in oral and written form;
Establish and maintain an effective working relationship with those contacted in the course of work; Relate effectively with racially and ethnically diverse staff, students and community;
Coordinate and oversee maintenance and changes to the production environment;
Develop and update processes and procedures;
Work effectively with cross-functional teams to define technical requirements and identify/resolve technical issues;
Provide statistical information upon request in relation to system and security activities;
Work independently;
Implement data solutions;
Assess and prioritize multiple tasks, projects, and demands;
Operate a personal computer utilizing a variety of software applications;
Basic understanding of electrical safety procedures;
Effective telephone skills and techniques of customer service.

Skills:
In some positions where typing is less than 25% of the job function, the typing requirement may be waived at the discretion of the District administration.

EDUCATION AND EXPERIENCE

A Bachelor's Degree in Computer Science; **AND** three (3) years of computer network installation and maintenance experience; **OR** an equivalent combination of education and experience.

REQUIRED LICENSES AND/OR CERTIFICATES

Must possess one or more of the following certifications: CCNP (Cisco Certified Network Professional), or CCNA (Cisco Certified Network Associate). Other network and/or industry certifications or experience may be substituted where appropriate. This classification requires the use of a personal or District vehicle while conducting District business. Must possess a valid and appropriate California driver's license; have an acceptable driving record and qualify for insurability with the District's insurance carrier.

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

Strength:
Work may involve lifting, carrying, pushing and/or pulling of objects weighing up to 75 pounds with frequent lifting of objects that weigh up to 50 pounds; physical dexterity in limbs and digits necessary to operate hand tools and power tools used in the electronic trade; ability to bend, stoop, climb, grasp, and reach.

Working Conditions:
Must be able to sit for prolonged periods of time in front of a computer. May require a significant amount of walking during the course of the work day.

Additional Requirements:
May be required to work outside the traditional work schedule. May be called out to work off-shift in emergency situations. According to the needs of the organization, some incumbents in this job class may be required to obtain specific technical certifications.

Pre-placement Physical: Class I

Redlands Unified School District

SYSTEMS SPECIALIST

DEFINITION

Under general supervision, maintain ongoing availability and security of vital computer servers and systems; install, configure, support, and monitor Microsoft server operating systems, server applications, SQL database applications and security and management systems; support other manufacturer operating systems and applications, as needed; clearly communicate technical solutions in a user-friendly, professional manner; provide one-on-one, end-user training, as needed; conduct hardware and software inventory database maintenance and reporting; perform other related work as required.

ESSENTIAL FUNCTIONS

Perform a variety of assignments associated with monitoring and controlling computer operating systems; provide daily network support and troubleshooting; monitor email, firewall, and file/print servers daily for optimum performance; configure and maintain Windows 2000 network and Windows XP/2000 computer system; analyze system faults; troubleshoot and run diagnostic tests on operating systems and hardware to detect problems; initiate preventive maintenance on the operating systems and respond reactively to system/environment problems; configure workstations; install security patches and virus protection software; monitor Intranet site resources and secure system for security, product quality, and operational functionality; evaluate, install and configure developed software during various phases of testing and deployment; review requirements and assist in the implementation, configuration, and security of IT systems; review and prepare documentation for system configurations, tests and software installations; provide technical support, training, and security education; work in a team environment to accomplish all tasks; provide resolution information and collaborate with other teams to complete impact analysis where appropriate; provide detailed solution documentation; perform other duties as assigned or required.

EMPLOYMENT STANDARDS

KNOWLEDGE AND ABILITIES

Knowledge of:

Microsoft server operating systems including Windows 2000 and Windows 2003;
Microsoft Windows 2003 network services including AD, Group Policies, DNS, WINS, and IIS;
Microsoft server applications including Exchange 2003, SQL 2005, and SMS;
Microsoft desktop operating systems including Windows 98, 2000, XP, and Vista;
Microsoft desktop application suites including Microsoft Office 97, 2000, XP and 2003;
Symantec applications including AntiVirus Corporate Edition and Backup Exec;
Products and services that meet overall security objectives;
Networked computer system environments and device capabilities;
Local Area Network (LAN) management and configuration principles;
Electrical safety procedures;
Effective telephone skills and techniques of customer service.

Ability to:

Identify, troubleshoot and resolve a wide range of technical network and computer-related problems;
Identify, evaluate, and solve network problems;
Support and train end-users in a wide range of software applications as needed;
Read, understand, and apply complex technical information;
Master new computer technology;
Communicate effectively in oral and written form;
Establish and maintain an effective working relationship with those contacted in the course of work;
Relate effectively with racially and ethnically diverse staff, students, and community;

Ability to (continued):
Design and implement new technical solutions;
Coordinate and oversee maintenance and changes to the production environment;
Develop and update processes and procedures;
Work effectively with cross-functional teams to define technical requirements and identify/resolve technical issues;
Work independently;
Analyze data and implement solutions;
Design and evaluate telecommunication and computer systems;
Design and manage complex projects involving people and technology;
Solve complex technical problems involving integrated operating systems and hardware platforms;
Assess and prioritize multiple tasks, projects, and demands.

Skills:
In some positions where typing is less than 25% of the job function, the typing requirement may be waived at the discretion of the District administration.

EDUCATION AND EXPERIENCE

A Bachelor's Degree in Computer Science; **AND** three (3) years of computer systems installation and maintenance experience; **OR** an equivalent combination of education and experience.

REQUIRED LICENSES AND/OR CERTIFICATES

Must possess one or more of the following certifications: MCSE (Microsoft Certified Systems Engineer), or MCSA (Microsoft Certified Systems Administrator). Other network and/or industry certifications or experience may be substituted where appropriate. This classification requires the use of a personal or District vehicle while conducting District business. Must possess a valid and appropriate California driver's license; an acceptable driving record; qualify for insurability with the District's insurance carrier.

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

Strength:
Work may involve lifting, carrying, pushing and/or pulling of objects weighing up to 75 pounds with frequent lifting of objects that weigh up to 50 pounds; physical dexterity in limbs and digits necessary to operate hand tools and power tools used in the electronic trade; ability to bend, stoop, climb, grasp, and reach.

Working Conditions:
Must be able to sit for prolonged periods of time in front of a computer; may require a significant amount of walking during the course of the work day.

Additional Requirements:
May be required to work outside the traditional work schedule. May be called out to work off-shift in emergency situations. According to the needs of the organization, some incumbents in this job class may be required to obtain specific technical certifications.

Pre-placement Physical: Class I

Redlands Unified School District

HELP DESK TECHNICIAN

DEFINITION

Under general supervision, provide technical software, hardware, and network problem resolution to District computer users by performing question/problem diagnosis and guiding users through step-by-step solutions in a call center and/or on-site environment; clearly communicate technical solutions in a user-friendly, professional manner; provide one-on-one, end-user training as needed; assist Computer Technicians; troubleshoot network printer problems; pass more complex end-user problems on to Computer Technicians; conduct hardware and software inventory database maintenance and reporting; and perform other related work as required.

ESSENTIAL FUNCTIONS

Identify, diagnose, and resolve level one problems for users of the servers, personal computer software and hardware, District network, the Internet and new computer technology in a call center and/or on-site environment; communicate solutions to end-users; provide one-on-one end-user problem resolution over the phone for District approved PC and Macintosh software; deliver, tag, set up, and assist in the configuration of end-user PC and Macintosh desktop hardware, software and peripherals; diagnose and resolve end-user network or local printer problems, PC and Macintosh hardware problems and mainframe e-mail, Internet dial-in, and local area network access problems; coordinate timely repair of PC and Macintosh computer equipment covered by third party vendor maintenance agreements; perform minor desktop hardware repair for PC and Macintosh computer equipment and peripherals that are not covered by third-party vendor maintenance agreements; help install local area network cabling systems and equipment such as network interface cards, hubs and switches; assist Network Technicians in creating materials for end-user frequently asked questions, and other related functions; and other duties as assigned.

EMPLOYMENT STANDARDS

KNOWLEDGE AND ABILITIES

Knowledge of:

Desktop operating systems, various software applications, and basic hardware for the PC and/or Macintosh;
Principles and theories of network systems and management;
Internet technologies and products;
Basic understanding of electrical safety procedures;
Effective telephone skills and techniques;
Customer Service.

Ability to:

Deliver technical customer support over the phone in a call center environment;
Identify, troubleshoot and resolve a wide range of technical, computer-related problems;
Make the distinction between Level One and Level Two end user problems;
Identify, evaluate, and solve end-user workstation problems;
Support and train end-users in a wide range of software applications, as needed;
Read, understand, and apply complex technical information;
Master new computer technology;
Communicate effectively in oral and written form;
Establish and maintain an effective working relationship with those contacted in the course of work;
Relate effectively with racially and ethnically diverse staff, students, and community.

Skills:
In some positions where typing is less than 25% of the job function, the typing requirement may be waived at the discretion of the District administration.

EDUCATION AND EXPERIENCE

Education:
Completion of the twelfth grade and supplemented by coursework and additional training in the use of computers, software, peripherals and the various systems currently in use in the district.
One year college level coursework and Microsoft Certified Professional certification desired.

Experience:
One year providing end-user phone and/or on-site support for current PC and/or Macintosh desktop and application software OR one year installing, upgrading, troubleshooting, and repairing personal computers in a network environment. Previous customer service experience strongly desired.

REQUIRED LICENSES AND/OR CERTIFICATES

This classification requires the use of a personal or District vehicle while conducting District business. Must possess a valid and appropriate California driver's license, an acceptable driving record, and qualify for insurability with the District's insurance carrier.

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

Strength:
Work may involve lifting, carrying, pushing and/or pulling of objects weighing up to 75 pounds with frequent lifting of objects that weigh up to 50 pounds; physical dexterity in limbs and digits necessary to operate hand tools and power tools used in the electronic trade; ability to bend, stoop, climb, grasp, and reach.

Working Conditions:
Must be able to sit for prolonged periods of time in front of a computer. May require a significant amount of walking during the course of the work day.

Pre-placement Physical: Class I

REDLANDS UNIFIED SCHOOL DISTRICT

JOB DESCRIPTION

TITLE Coordinator, Technology Services

QUALIFICATIONS

EDUCATION:	Required	B.A. or B.S. in Computer Science and/or equivalent related field.
	Desired	Possession of MSCE or CNNA Certificate, experience in an education setting
EXPERIENCE:	Required	A minimum of two years experience working in the technology field that includes some management experience. Experience in installing hardware and software and troubleshooting network problems.
PERSONAL QUALIFICATIONS:		Character, personality, and proper social capability to relate effectively with racially and ethnically diverse staff, students, and community. Demonstrated ability to work with a wide variety of community groups and organizations.

BRIEF DESCRIPTION OF POSITION

Under the direction and supervision of the supervisor**,** supervises and coordinates the Technology Services Department including the development of fiscal management practices and procedures; directs the efficient operation of the department; and evaluates assigned personnel; and performs related work as required.

DUTIES AND RESPONSIBILITIES

As assessed by the supervisor, the outcomes of the Coordinator, Technology Services' job performance will be as follows:

1. Leadership and assistance in the implementation of policies and procedures for network maintenance and computer operations will be effectively provided.

2. Efforts to supervise and, where necessary, participate in the evaluation, installation, testing and maintenance of complex networks and the software on the District's Wide Area Networks (WAN) and Local Area Networks (LAN) will be ably provided.

3. Effective management of the budget and expenditures of the department will have been provided.

4. Informed direction and support for the purchase, maintenance and troubleshooting of all types of equipment related to all aspects of technology will be provided.

5. Supervise and manage the District E-mail server.

6. Assist and develop District e-mail policy and practices.

7. Maintain District Acceptable Use Policies.

8. Manage and oversee the installation and maintenance of the District's Telecommunication system.

9. Supervise and oversee the District web page.

10. Coordinate and ensure that the updates of all school site School Accountability Report Cards and web pages are maintained.

11. Assist schools, as needed, with the implementation of technology related grants.

12. Work closely with departments, sites and divisions to ensure optimum acquisition, deployment installation, maintenance, utilization, repair and security of available technology.

13. Assist in the development and implementation of the District's Information Technology Plan, responding to short and long term administrative and instructional technology needs will be provided.

14. Implement a District computer maintenance and upgrade program.

15. Effectively direct and coordinate communication efforts to the district administration regarding policies, practices and procedures related to professional and instructional technology.

16. A current knowledge of trends, events and potential challenges in the area of technology will be continuously maintained.

18. Work with vendors, selected hardware and software and provided project management for LAN, WAN, Internet, PC and data hardware and software.

19. Communications regarding incidents and/or situations which might impact the district, its divisions or its schools will have been consistently provided to appropriate district office/school personnel in a timely and effective manner.

20. A positive relationship will built and maintained with the county Technology Department.

21. Active and consistent efforts will have been made to maintain or improve the external and internal image of the district, its divisions and its schools.

22. Annual objectives deemed appropriate by the supervisor will have been established.

23. Appropriate data in support of the status of annual objectives and job description elements will have been gathered.

24. Other duties assigned by the supervisor will have been effectively accomplished.

Redlands Unified School District

COMPUTER SPECIALIST

DEFINITION

Under the general direction of the supervisor, plan, organize, and manage the District's E-mail System and e-mail servers; assist with and support the maintenance of the District network and data management systems; instruct and train personnel at various sites in the use of E-mail and related areas; perform other related work as required.

ESSENTIAL FUNCTIONS

Perform a variety of technical functions including installing, configuring, and managing Windows NT 4.0, Windows 2000, and Linux networks and servers; evaluate, install, test, implement, monitor, and maintain complex systems, e-mail software and hardware, application software, and appropriate hardware; maintain network backups of E-mail, licensing, security, and virus protection; provide remote and on-site E-mail administration; maintain network documentation and disaster prevention and recovery plans; communicate effectively with end users both orally and in writing; work with student attendance system (Aeries) both at the District and site levels; other duties as assigned.

EMPLOYMENT STANDARDS

KNOWLEDGE AND ABILITIES

Knowledge of:

Windows NT 4.0 and 2000 Server, Local Area Networks in a multi-platform environment;
Ethernet and Windows 95, 98, Windows 2000 Pro, Red Hat Linux 7.XXX ;
Data Base Management Systems programming;
Macintosh networking;
HTML to customize the District Internet mail client interface if it is required and District Home Pages.

Ability to:

E-mail System Management

- Evaluate, plan, and design an Enterprise e-mail system
- Specify the hardware and software requirements for the District e-mail system
- Install, configure, manage, and secure a comprehensive e-mail system
- Evaluate, configure, and support e-mail clients that need to work with the District electronic mail system
- Troubleshoot E-mail system and experience of supporting and training end users to utilize e-mail more productively

Networking

- Install, configure, manage, and secure Windows NT 4.0, Windows 2000, and Linux networks
- Add servers and services to the existing District networks
- Configure, manage, and troubleshoot DNS, WINS, DHCP, IIS, and FTP servers in a multiplatform networking environment
- Manage user accounts and groups
- Backup and restore data in a network environment

EDUCATION AND EXPERIENCE

Education:

Completion of the twelfth grade and supplemented by coursework and additional training in the use of computers, software, peripherals, and the various systems currently in use in the District.

Desirable:

Bachelor's Degree in Computer Science or an equivalent related field; possession of MSCE, CCNA, RHCE, Network+ Certificate from Microsoft, Cisco, Red Hat, or CompTIA

Experience:

Minimum of two (2) years of experience managing Microsoft NT or Server 2000 Local Area Networks in a multi-platform environment.

Desired:

Experience in installing hardware and software; experience with Ethernet and Windows 9X, 2000 and Windows NT; data base programming software (Microsoft Access, SQL).

REQUIRED LICENSES AND/OR CERTIFICATES

If driving a vehicle is required in the course of work, operator must possess a valid and appropriate California driver's license; have an acceptable driving record; qualify for insurability by the District's insurance carrier.

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

Strength:

Work may involve lifting, carrying, pushing, and/or pulling of objects weighing up to 75 pounds with frequent lifting of objects that weigh up to 50 pounds; physical dexterity in limbs and digits necessary to operate equipment used in the electronic trade.

Working Conditions:

Duties will require working both at the District Office and at other sites throughout the District.

Pre-placement Physical: Class I

Redlands Unified School District

COMMUNICATION SPECIALIST

DEFINITION

Under general supervision, plan, organize, manage, and maintain the telephone systems at various sites throughout the district; instruct and train district personnel at various sites in the use of the telephone system; have a working knowledge in multi-platform environments; and do other related work as assigned.

ESSENTIAL FUNCTIONS

Perform a variety of technical functions including evaluate, install, test, implement, monitor, and maintain complex systems, application software, and hardware on the district's communication systems; maintain network backups, licensing, security protection; provide remote and on-site voice-mail administration; manage and maintain network documentation and disaster prevention and recovery plans; manage and troubleshoot switches and other communication equipment; anticipate and resolve issues related to resource use and other technical areas; communicate effectively with end users both orally and in writing; implement and maintain local area network system; perform periodic updates to district's communication systems; other duties as assigned.

EMPLOYMENT STANDARDS

KNOWLEDGE AND ABILITIES

Knowledge of:
Methods, procedures, materials and techniques used in the installation and maintenance of communication systems including both hardware and software;
Methods of testing and troubleshooting hardware/software problems;
Remote and on-site voice-mail administration;
Local area network systems.

Ability to:
Skillfully install, maintain, and support a variety of communications hardware and software products;
Perform skilled tasks utilizing electronic and diagnostic equipment/software in support of the district's telephone system;
Maintain network backups, licensing, and security protection;
Schedule work and organize activities in ways to optimize working time;
Communicate effectively in oral and written form;
Establish and maintain an effective working relationship with people contacted in the course of work;
Relate effectively with racially and ethnically diverse staff, students, and community.

EDUCATION AND EXPERIENCE

Education:
Equivalent to the completion of the twelfth grade, including training on Northern Telecom and TIE systems and switches

Experience:
A minimum of five (5) years experience managing telephone networks, including experience in installing hardware and software and trouble shooting network problems. Experience with Ethernet, Windows 9X, and Windows NT & NT server preferable, but not required. Experience on Tie Communications equipment and Northern Telecom equipment.

LICENSE AND CERTIFICATES

Possession of a valid and appropriate California driver's license; qualify for insurability with the District's insurance carrier.

Certification Requirements or Equivalent:

TIE communications systems installation, testing, and maintenance;
Northern Telecom meridian 1 options 21 through 71 installation;
Northern Telecom X11 feature administration;
Northern Telecom Option 11E installation and database;
Northern Telecom Options 21E through 81C installation and maintenance;
Northern Telecom Meridian mail installation and maintenance;
Williams Communications certificate in LAN/WAN integration.

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

Strength:

Work may involve lifting, carrying, pushing, and/or pulling of objects weighing up to 75 pounds with frequent lifting of objects that weigh up to 50 pounds; physical dexterity in limbs and digits necessary to operate equipment used in the electronic trade.

Pre-placement Physical: Class I

Redlands Unified School District

NETWORK SPECIALIST

DEFINITION

Under general supervision, maintain ongoing availability and security of vital district network; install, configure, support, and monitor Cisco Systems routers, switches, voice, video, and security devices; support other manufacturer Local Area Network (LAN) devices, as needed; clearly communicate technical solutions in a user-friendly, professional manner; provide one-on-one, end-user training, as needed; conduct hardware and software inventory database maintenance and reporting; perform other related work as required.

ESSENTIAL FUNCTIONS

Provide administration and maintenance of LAN and Wide Area Network (WAN) system servers, applications, and equipment; assure system stability, security and maximum uptime; monitor access to system resources and track connectivity and security problems; analyze problems and implement solutions according to District procedures; perform circuit and network troubleshooting to diagnose system problems; analyze system functionality; identify, locate, and resolve complex network problems to ensure minimal disruption of critical applications; monitor and review system log reports and network documentation; resolve and repair problems within scope of authority; monitor system environment, utilization, and system log reports; resolve connectivity, performance, security, configuration and access problems; monitor system for operating efficiency, make corrective adjustments to data management settings, and assure optimum performance and system integrity; install and configure hardware, equipment, and system software applications, including remote site deployments, as required; install, configure, and update network server software upgrades, file sharing, and domain security protocols; detect and correct software errors; provide referral to Technology Services Coordinator when problems occur which are beyond the skills of the Network Specialist, and track the problem until it has been resolved; oversee design and implementation of individual solutions and ongoing maintenance and management of the network; provide resolution information and collaborate with other teams to complete impact analysis where appropriate; provide detailed solution documentation; perform other duties as assigned or required.

EMPLOYMENT STANDARDS

KNOWLEDGE AND ABILITIES

Knowledge of:

Methods of administrating and managing Cisco hardware/software;
Methods, procedures, material, and techniques used to design, configure, and install routers/switches/ firewall/VPN concentrators;
Methods to resolve network problems using Cisco Works and other network tools;
Design elements and implementation strategies for new technical solutions;
Security issues with regards to networks under management, and ability to respond to those issues;
Methods and procedures to ensure that products and services meet overall security objectives;
Networked computer system environments and device capabilities;
LAN and WAN management and configuration principles;
Networks, security guidelines and industry “best practices;”
Fiber Optic, Coaxial, DS3, ATM, T1, fractional T1, and Ethernet transmission systems;
Private line, Point to Point, and frame relay WAN protocols;
Telecommunications industry and infrastructure;
Fast-paced, stressful environments;
Techniques and skills to design and evaluate telecommunications and network systems;
Techniques and skills to design and manage complex projects involving people and technology;
Techniques and skills to solve complex technical problems involving integrated operating systems and hardware platforms;

Ability to:
Identify, troubleshoot, and resolve a wide range of technical network and computer-related problems;
Identify, evaluate, and solve network problems;
Support and train end-users in a wide range of software applications as needed;
Read, understand, and apply complex technical information;
Master new computer technology;
Communicate effectively in oral and written form;
Establish and maintain an effective working relationship with those contacted in the course of work; Relate effectively with racially and ethnically diverse staff, students and community;
Coordinate and oversee maintenance and changes to the production environment;
Develop and update processes and procedures;
Work effectively with cross-functional teams to define technical requirements and identify/resolve technical issues;
Provide statistical information upon request in relation to system and security activities;
Work independently;
Implement data solutions;
Assess and prioritize multiple tasks, projects, and demands;
Operate a personal computer utilizing a variety of software applications;
Basic understanding of electrical safety procedures;
Effective telephone skills and techniques of customer service.

Skills:
In some positions where typing is less than 25% of the job function, the typing requirement may be waived at the discretion of the District administration.

EDUCATION AND EXPERIENCE

A Bachelor's Degree in Computer Science; **AND** three (3) years of computer network installation and maintenance experience; **OR** an equivalent combination of education and experience.

REQUIRED LICENSES AND/OR CERTIFICATES

Must possess one or more of the following certifications: CCNP (Cisco Certified Network Professional), or CCNA (Cisco Certified Network Associate). Other network and/or industry certifications or experience may be substituted where appropriate. This classification requires the use of a personal or District vehicle while conducting District business. Must possess a valid and appropriate California driver's license; have an acceptable driving record and qualify for insurability with the District's insurance carrier.

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

Strength:
Work may involve lifting, carrying, pushing and/or pulling of objects weighing up to 75 pounds with frequent lifting of objects that weigh up to 50 pounds; physical dexterity in limbs and digits necessary to operate hand tools and power tools used in the electronic trade; ability to bend, stoop, climb, grasp, and reach.

Working Conditions:
Must be able to sit for prolonged periods of time in front of a computer. May require a significant amount of walking during the course of the work day.

Additional Requirements:
May be required to work outside the traditional work schedule. May be called out to work off-shift in emergency situations. According to the needs of the organization, some incumbents in this job class may be required to obtain specific technical certifications.

Pre-placement Physical: Class I

FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
STUDY AGREEMENT
February 11, 2010

The FISCAL CRISIS AND MANAGEMENT ASSISTANCE TEAM (FCMAT), hereinafter referred to as the Team, and the Fairfield Suisun Unified District, hereinafter referred to as the District, mutually agree as follows:

1. BASIS OF AGREEMENT

The Team provides a variety of services to school districts and county offices of education upon request. The District has requested that the Team provide for the assignment of professionals to study specific aspects of the Fairfield Suisun Unified School District 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.

2. SCOPE OF THE WORK

A. Scope and Objectives of the Study

1) The District is requesting FCMAT to provide a comprehensive analysis of the district's current state of technology including hardware, software, professional development, departmental staffing, student assessment and accountability requirements and the use of technology to determine the feasibility of combining the Instructional Technology Department and the Assessment and Accountability Departments. The objective of the review will be to provide a detailed report that demonstrates the current state of technology and student assessment requirements and provide recommendations regarding the organizational staffing of the Technology Department and the Assessment and Accountability Department to form a single department to support the district's needs. The FCMAT Team will evaluate the workflow of both departments and create an organizational workflow diagram to assist in the analysis.

The Team will interview site principals, department directors and classified staff to gather data regarding the types of software applications and hardware utilized at the district. The Team will review and analyze the District's Technology Master Plan and Educational Master Plan and make recommendations, if any

2) The technology review will include an analysis regarding the level of support for the following:
    a. Network Administration
    b. Website development and support
    c. Email support for district and site level staff
    d. Student Attendance System
    e. Financial Reporting System
    f. Hardware installation and setup
    g. Application software used at district and site levels
    h. Technology in the classrooms and student data assessment and accountability protocols

3) Review the job descriptions and staffing of the technology and assessment and accountability departments. This component will also include any site level support and its impact on the both departments

4) Review District board policies on the use and integration of technology for district level and site based instructional strategies. This component should include any obstacles or barriers that prevent the use of effective technology

5) Based upon the support level required by the district's technology and assessment and accountability departments, provide staffing comparisons of districts of similar size and structure

6) Review the design network regarding safeguards of the data residing on the systems in the event of a catastrophic event or security breach. Review the processes or planning that exist to upgrade the hardware and software assets to remain current with today's technology. Provide recommendations regarding professional development training and technical expertise of both departments to form a single department.

B. <u>Services and Products to be provided</u>

1) Orientation Meeting - The Team will conduct an orientation session at the District to brief District management and supervisory personnel on the procedures of the Team and on 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 - The Team will issue an exit letter approximately 10 days after the exit meeting detailing significant findings and recommendations to date and memorializing the topics discussed in the exit meeting.

5) Draft Reports - Sufficient copies of a preliminary draft report will be delivered to the District administration for review and comment.

6) Final Report - Sufficient copies of the final study report will be delivered to the District administration following completion of the review.

7) Follow-Up Support – Six months after the completion of the study, FCMAT will return to the District, if requested, to confirm the District's progress in implementing the recommendations included in the report, at no cost. Status of 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, Deputy Executive Officer, Fiscal Crisis and Management Assistance Team, Kern County Superintendent of Schools Office. The study team may also include:

A. Mary Barlow	***FCMAT Deputy Administrative Officer***
B. Technology	***FCMAT Consultant***
C. Technology	***FCMAT Consultant***

Other equally qualified consultants will be substituted in the event one of the above noted 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:

A. $500.00 per day for each Team Member while on site, conducting fieldwork at other locations, preparing and presenting reports, or participating in meetings.

B. All out-of-pocket expenses, including travel, meals, lodging, etc. The District will be billed for the daily rate and expenses of the independent consultant, only. Based on the elements noted in section 2 A, the total cost of the study is estimated at $27,000. 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 acceptance of the final report by the District.

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

Payments for FCMAT 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 while on-site reviews are in progress.

B. The District will provide the following (if requested):

1) A map of the local area
2) Existing policies, regulations and prior reports addressing the study request
3) Current organizational charts, District wide, Technology and Assessment and Accountability Departments
4) Current and two (2) prior year's audit reports
5) Technology Master Plan
6) Educational Master Plan
7) List of software applications utilized and supported by District, i.e., Financial, Student Attendance, Student Assessment
8) Inventory list of hardware for both departments and district wide
9) Any documents requested on a supplemental listing

C. The District Administration will review a preliminary draft copy of 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 District pupils. The District shall take appropriate steps to comply with EC 45125.1(c).

6. PROJECT SCHEDULE

The following schedule outlines the ***estimated*** completion dates for key study milestones:

Orientation:	***March 8, 2010***
Staff Interviews:	***to be determined***
Exit Interviews:	***to be determined***
Preliminary Report Submitted:	***to be determined***
Final Report Submitted:	***to be determined***
Board Presentation:	***to be determined***
Follow-Up Support:	***If requested***

7. CONTACT PERSON

Name of contact person: Kathleen Bond, Associate Superintendent

Telephone: (707) 399-5057 FAX: (707) 399-5152

E-Mail kathleenbo@fsusd.k12.ca.us

Jacki Cottingim-Dias Ph.D. 2/11/10

Jacki Cottingim-Dias, Ph.D., Superintendent Date
Fairfield Suisun Unified School District

February 11, 2010

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

In keeping with the provisions of AB1200, the County Superintendent will be notified of this agreement between the District and FCMAT and will receive a copy of the final report.