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

Mojave Unified School District

Technology Review

October 11, 2016

Joel D. Montero
Chief Executive Officer

October 11, 2016

Dr. Aaron Haughton, Superintendent
Mojave Unified School District
3500 Douglas Ave.
Mojave, CA 93501

Dear Superintendent Haughton:

In April 2016, the Mojave Unified School District and the Fiscal Crisis and Management Assistance Team (FCMAT) entered into an agreement to provide a review of the district's technology staffing and organization. Specifically, the agreement stated that FCMAT will perform the following:

1. Provide a comprehensive staffing analysis to determine the district's ability to support the current state of technology including hardware, software, professional development, student assessment and accountability requirements, and the use of technology. The technology review will include an analysis regarding the staffing levels and organizational support for the following:
    a. User, desktop and workstation support
    b. Network administration
    c. Website development and support
    d. Email support for district- and site-level staff
    e. Student attendance system
    f. Financial reporting system
    g. Hardware installation and setup
    h. District approved application software used at district and site levels
    i. Technology in the classrooms, and student data assessment and accountability protocols
    j. E-Rate administration and support
    k. Wireless technologies
2. Evaluate the organizational structure, staffing, workflow, efficiency and duties of the technology department personnel. This component of the study will also include a review of technology-related board policies, administrative procedures,

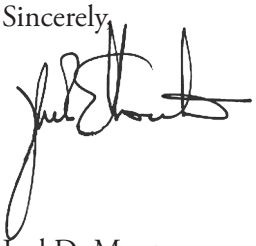
and operational practices to provide data regarding current practices and procedures. The team will evaluate the current workflow and distribution of technology-related duties of the department and provide recommendations for improved efficiency, if any.

a. Review job descriptions for all technology-related positions, interview staff, and make recommendations for staffing improvements. All recommendations will include estimated values for any proposed position reductions or enhancements to the organizational structure. Additionally, the team may interview other staff including but not limited to school principals, department directors, and certificated and classified personnel to determine the efficiency and effectiveness of services delivered to schools or other departments.

b. Review professional development offerings and opportunities for department staff and provide recommendations regarding professional development training, if any.

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

Sincerely,



Joel D. Montero
Chief Executive Officer

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About FCMAT

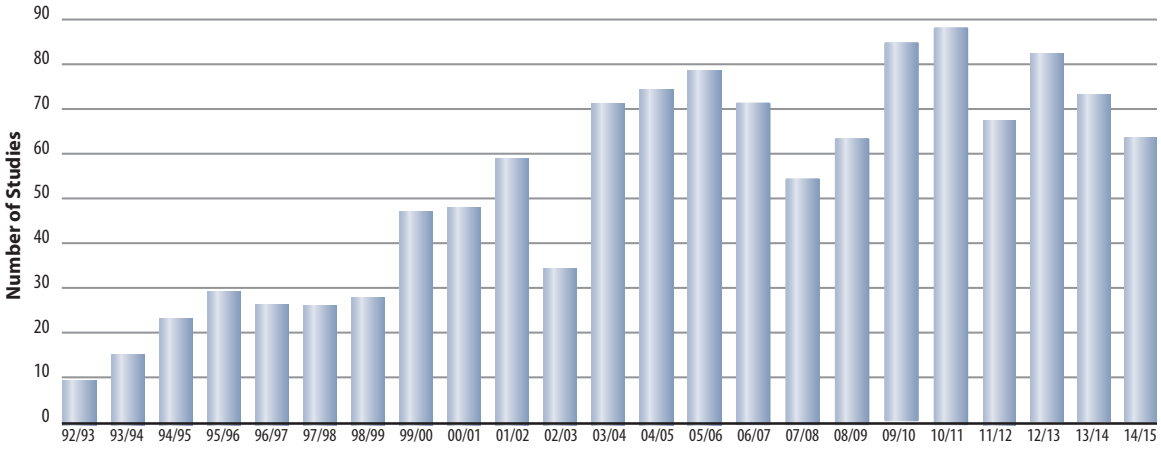
FCMAT's primary mission is to assist California's local K-14 educational agencies to identify, prevent, and resolve financial, human resources and data management challenges. FCMAT provides fiscal and data management assistance, professional development training, product development and other related school business and data services. FCMAT's fiscal and management assistance services are used not just to help avert fiscal crisis, but to promote sound financial practices, support the training and development of chief business officials and help to create efficient organizational operations. FCMAT's data management services are used to help local educational agencies (LEAs) meet state reporting responsibilities, improve data quality, and inform instructional program decisions.

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

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

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

Studies by Fiscal Year



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

FCMAT was created by Assembly Bill (AB) 1200 in 1992 to assist LEAs to meet and sustain their financial obligations. AB 107 in 1997 charged FCMAT with responsibility for CSIS and its statewide data management work. AB 1115 in 1999 codified CSIS' mission.

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

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

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

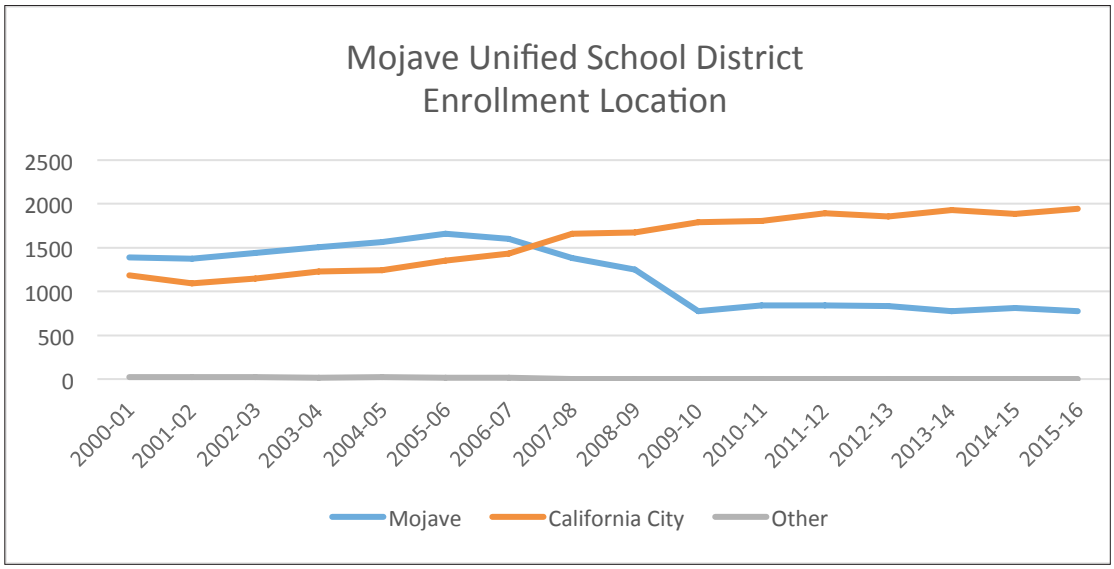
Introduction

Background

The Mojave Unified School District in Kern County primarily serves two communities in the Antelope Valley: Mojave and California City. The two communities are approximately 12 miles apart.

Mojave, known for its aerospace history with activities ranging from flight testing to space industry development and aircraft heavy maintenance and storage, had a population of 4,238 in the 2010 United States Census, an increase of 10.5% over 2000 United States Census rates.

California City, whose major employers include Edwards Air Force Base, a state correctional facility, a major vehicle manufacturer, and a flight test operator, had a population of 14,120 in the 2010 United States Census, an increase of 68.4% over 2000 United States Census rates.



Two new schools opened for the 2007-08 school year, Hacienda Elementary and California City High, expanding enrollment capacity in California City and opening the city's first local high school. Prior to 2007-08, high school students were transported to Mojave. Following the opening of California City High School in 2007-08, the enrollment of high school students remaining in Mojave is so low that many classes are online-based and group administered by a teacher in a computer lab to provide students more class and elective options. The remaining schools in the district were constructed prior to the widespread use of technology in the classroom.

Study Guidelines

FCMAT visited the district on May 16 through 18, 2016 to conduct interviews, collect data and review documents. This report is the result of those activities and is divided into the following sections:

- Executive Summary
- Technology Planning, Leadership and Vision
- Technology in the Classroom
- Services
- Network Administration and Infrastructure
- Technology Support Staffing and Organization
- Appendices

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

Study Team

The study team was composed of the following members:

Andrea Dodson
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Aaron Barnett*
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Moreno Valley, CA

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

Executive Summary

The Mojave Unified School District does not have a current technology plan to communicate the district's technology status, vision and future initiatives. School staff, administrators and board members are concerned with the state of unfinished technology projects and have concerns about outstanding support requests.

Six full-time positions provide technology support in the Information Technology Department: a director of technology, a data management specialist, and four technology technicians. Additionally, each of six school sites employs a technology support teacher.

The technology department struggles to consistently provide quality support for all users in an environment that is nonstandardized and for projects that are minimally vetted and planned. Technology technicians indicated that nonsupported devices are given lower priority for support because of the additional time needed to research and complete the requested tasks. In one example, new purchases of iPads and Chromebooks remained boxed for months before they were delivered to the schools. Once the devices arrived at the schools, there was another month delay to unbox and distribute the devices to students and teachers. A wide variety of devices can be difficult for a small technology department to maintain. As a best practice to keep operating costs low, many districts standardize on one brand device for Windows, one brand of tablet, and one brand device for Chromebooks. In another example, a school-wide wireless network project has taken significantly longer to complete than expected by the school administrator. Delayed support and project completion dates affect the instructional staff's ability to integrate new technology into their instructional plans.

All positions in the technology department are responsible for training users on the basic use of technology. Technology support teachers (TSTs) are responsible for developing trainings for teachers on integrating technology into instruction. Because TSTs infrequently provide these opportunities and the opportunities vary greatly by school, instructional staff have requested this type of training from technology department staff. Technology department staff indicated they have started researching how teachers at other districts use technology in their classroom to bring those practices back to the district's instructional staff. The task of developing trainings to instruct teachers on how to integrate technology into instruction is best performed by qualified certificated staff.

The TST position receives a flat stipend without any accountability for completing duties outside of the regular contract day and completing the additional assigned duties. The lack of accountability has created an environment where ineffective TSTs remain in the position. Most TSTs provide basic device, network and application support during the school day and simultaneously manage a classroom. While having a full-time, on-site individual to assist in small or emergency technology requests is desirable, a similar level of support can be provided to most schools by reassignment of the technology technicians to schools that are in close proximity. For more effective results, the TST position should be revised to be an hourly stipend position with a not-to-exceed amount for services provided outside the contract of the regular day. Further, school and district administration should pre-identify and schedule dates for professional development presentations developed by the TSTs.

A previous position in the technology department, the network and computer coordinator, was responsible for providing district backbone network and server support in addition to device, network and application support. When the position was eliminated, the network and server support duties followed the individual into his new role as director of technology. While the two

positions share some management duties, they otherwise provide significantly different services to the district and the duties were too great for one person to fulfill. Subsequently, a technology technician was cross-trained to support the backbone network and servers. The technician is otherwise assigned to support the district office and Douglas school. The district should reclassify one technology technician position as a network technician position to better reflect the duties performed.

The director of technology has struggled with the transition from a working department manager position to the technology leader the district needs. The district lacks research of technology needs, development of a plan to meet those needs, and communication of the implementation status of the plan. The director of technology is responsible for these functions. However, he is focused more on the day-to-day operations of the department and doesn't perform the visionary, leadership or project management duties required of a technology director. A quality technology professional mentor program or project management certification program can help the director of technology bridge the gap between the two roles.

Findings and Recommendations

The district's technology support is provided by six full-time positions in the Information Technology Department: a director of technology, a data management specialist, and four technology technicians. Additionally, each of six school sites employs a technology support teacher.

Processes that affect staffing levels and other concerns with current technical support will be discussed throughout this report. Specific staffing recommendations will be presented in the Technology Support Staffing section.

Technology Planning, Leadership and Vision

Technology Plan and Project Planning

The technology plan is outdated, and there is no schedule or process to update or maintain it. The five-year district technology plan reviewed by FCMAT was created on July 2010 and expired in June 2015. The plan followed the template that was required of Enhancing Education Through Technology (EETT) and maintained eligibility required by the federally funded E-Rate program. Technology plans are no longer a requirement to receive E-Rate funding and the EETT program is no longer funded. There is no ongoing commitment from the district to renew the plan because it does not tie into any current funding. This is out of compliance with Board Policy 0440, District Technology Plan, which requires the superintendent or designee to develop a three- to five-year technology plan that aligns with the district's vision and goals for student learning, the Local Control and Accountability Plan (LCAP).

Since the technology plan was developed prior to Common Core State Standards (CCSS) and the Smarter Balanced Assessment System (SBAC), it does not address the sufficiency of existing school site technology to meet newer instructional and testing standards or plan to expand technology and provide professional development to meet the newer needs.

Because technology changes exponentially over a short period of time, decisions made six years ago are not relevant today. For example, the technology plan focuses on the implementation of SMART Board interactive whiteboards in all classrooms. It states that approximately 90% of classrooms at the high school level have and use a SMART Board daily to present lessons. The availability of SMART Boards throughout classrooms was evident during the site tours. However, interviews indicate that regular use of SMART Boards in the classroom is low for purposes other than basic wall projection. Since the development of the technology plan, mirroring using a tablet device such an iPad or Microsoft Surface Pro has been determined to be a more effective teaching tool and more cost-efficient than interactive whiteboards.

In another example, the plan references the need to upgrade 200 district computers a year, but does not address increasing the number of computers per student through the use of mobile devices. Instead, the plan defines actions to increase technology access for students and teachers via traditional desktop systems. With the declining cost of wireless access and mobile devices over the past several years, industry practice has been to increase technology access through wireless infrastructure and mobile devices instead of the traditional computer desktop systems. The district is implementing a wireless network in the classrooms and has previously purchased some wireless and mobile devices, but none of these actions have been included in the technology plan or well communicated throughout the district. Consequently, teachers and other school staff are frustrated because they believe some schools receive most of the technology resources at the

cost of other schools. Specifically, there is belief that either Mojave or California City schools, depending on the staff member's assignment, receive more resources than the equivalent school in the other town.

The technology plan states that increasing access to technology will allow teachers to effectively integrate technology into the curriculum to individualize student instruction. However, there is no clearly defined action in the plan on how teachers will accomplish it. The plan does not list clear goals, measurable objectives, annual benchmarks, and an implementation plan for providing professional development to teachers based on a needs assessment and curricular goals. The plan is based on the Career Transition Assistance Program (CTAP), which is no longer relevant or available. It also states that the professional development strand will be monitored yearly to ensure training on implemented hardware and software and offer site in-service sessions for teachers to increase their skills in effectively integrating technology. Interviews indicate that there is no comprehensive district technology professional development program to assist with implementing technology into instruction.

Staff are not familiar with the contents of the technology plan or the technology goals of the district. The district lacks a clear and concise vision to direct the Information Technology department's service planning and purchasing decisions. Many of the school staff feel they are unable to implement technology to meet students' needs. Staff indicate that instructional technology requests and innovative ideas are denied in favor of maintaining a secure network because expanding technology is an increased security risk. The word "security" was used consistently by staff as the reason that technology like Google Apps for Education, wireless connectivity in classrooms, iPads, and Chromebooks could not be implemented in the district upon school request.

Per the job description, the director of technology is responsible for developing and implementing long- and short-term plans and activities, including the recommended prioritization of technology needs and resources. The director recently started participating in cabinet meetings. However, principals approach other technology staff to communicate technology requests, and the Technology Advisory Committee no longer meets although Board Policy 0440, District Technology Plan, requires an advisory planning team to assist in developing the technology plan. Participating in cabinet meetings, developing a relationship with individual school principals and department managers, and leading the reinstated Technology Advisory Committee would help the director gather the information needed to determine how to best allocate technology financial resources and plan for appropriate staffing and consultant levels.

Information Technology Systems does not have planning meetings to discuss projects requested throughout the district. Without a solid understanding of the scope or costs of a project, the project can quickly fail or not be cost effective. Technology technicians submit summer projects requested by the principals at their assigned school sites to support the addition of summer staffing hours. However, large projects throughout the school year are not documented or monitored. Regularly scheduled departmental planning meetings would help the director of technology understand any additional project requests communicated via department staff, helping him determine if the district has existing resources to support the project and ongoing needs.

A functional technology plan is up to date and guides a technology department in managing projects, selecting items for purchase and determining staffing levels to support the goals and actions of the district. For example, some districts standardize purchases and use of technology across similar school sites to simplify support, such as all elementary schools or all high schools. Other districts choose to provide purchasing and use flexibility to their schools to make localized decisions even though this practice requires increased levels of support. Either model can be appropriate to meet a

district's goals. However, for the technology department to set purchasing standards, plan for infrastructure upgrades or determine staffing levels and work assignments, the technology plan should communicate what is appropriate and needed for staff and the district to attain its goals. Further, it should be aligned with the district's LCAP and include details of any LCAP actions related to technology. A strong technology plan will communicate the district's vision of:

- ***What*** specific actions will the district take to maintain, implement and improve technology?
- ***Who*** is the target population that will be served by the technology related actions? For example, will the actions benefit an identified student population, instructional staff, or other operational staff?
- ***Why*** is the technology-related action a priority for the school district? For example, how will the action help the district achieve a measurable goal, like decreasing the achievement gap or increasing achievement for all students?
- ***Where*** will the technology action be implemented? For example, will it be deployed to classrooms for a specific program or grades, at a specific school, district-wide for all students or in a specific operational department?
- ***When*** are the technology-related actions expected to begin and end (if applicable)?

A needs assessment survey of teachers and principals will help identify any shortcomings in the technology services provided by the district. Discussion of the survey results in the technology committee setting will help determine acceptable solutions and develop the survey results into a technology plan that supports the district's curricular and instructional goals. Once a technology plan is developed, regular analysis and discussion throughout the year and an annual revision process will keep it relevant through the rapid growth, changes and requirements that occur in technology.

Recommendations

The district should:

1. Perform a needs assessment survey of principals, teachers and other departments.
2. Reinstate the Technology Advisory Committee to develop the needs assessment survey, review the results, and develop solutions to any identified challenges. Include representatives from:
    - Student Achievement & Instruction department
    - Business Services department
    - Technology department
    - Technology support teachers
    - Principals
    - Teachers
    - Students
    - Community members

3. Develop a comprehensive technology plan that communicates the district's technology direction, goals and objectives, aligns with technology related goals and actions in the LCAP, and includes the following components:

    - Technology professional development plan for instructional staff
    - Educational technology standards and measurable outcomes
    - How the goals of the technology plan will be communicated with district staff

Budget Development and Review

The Business Services office develops the technology department budget without information from a valid technology plan or input from the Information Technology Department or school sites that are responsible for making technology decisions. The budget is primarily based on the ongoing and regular costs of the prior year, without any adjustment for new projects or purchases. The technology department budget is then revised as needed during the fiscal year when specific purchases or projects are requested. Without a technology plan or inclusive budget planning process, the Information Technology Department reactively allocates resources throughout the school year.

Per the job description, the director of technology is responsible for preparing the departmental budget. Since the assistant superintendent of business services directly develops and maintains the Information Technology Department budget, the director of technology is unfamiliar with the status and what happens to local revenue generated by school site billbacks.

The lack of familiarity with the department budget and local revenue sources is a barrier to making department management decisions, such as determining if there is sufficient revenue to support additional staffing or consulting. Without sufficient project and budget planning, projects can be left incomplete or end up costing significantly more than projected, putting the district at risk. The director of technology should work with the assistant superintendent of business services to develop the technology department budget and any technology project budgets based on the technology plan and ongoing needs of the schools and district. Monthly review of the department budget and more frequent review of project budgets will ensure that the budget is on track and sufficient.

The practice of using district credit cards to make technology purchases circumvents the purchasing review and department budget encumbering process. District credit card purchases should go through a similar review and approval process to purchases made by purchase order. Instituting a multi-tiered review and approval process prior to credit card purchases is a good internal control practice and allows the technology department to determine if resources are aligned to support the purchase.

Recommendations

The district should:

1. Develop an annual technology budget including special project budgets with the assistance of the director of technology and the assistant superintendent of business services.

2. Implement a project management system and have regularly scheduled planning meetings to discuss projects. Share the current and projected costs of the projects with district administration.

3. Implement processes that allow the director of technology to monitor all technology purchases and implement an approval process before the purchase order is completed. Prohibit technology purchases on credit cards unless first approved by the director of technology.

Technology in the Classroom

The 2010-2015 technology plan lacks a current expected results measure for the use of technology in the classroom. Most of the benchmarks in the plan are based on improving assessment scores. For example, one measure of plan success is that students will score proficient or better in English/Language Arts with the benchmarks improving from 40% to 80% proficient or better by 2015. Another measure of plan success states that socioeconomically disadvantaged students will move up one step per year on the California Standards Tests (CST) in English and math. Since the state no longer uses the same CST assessment tests as it did in 2010, it will be difficult to measure the effectiveness of teacher methodologies with classroom technologies in the future.

Planning and support for new classroom technologies is inconsistent throughout the district. Although each school site has an assigned technician to resolve day-to-day issues, there is no consistent or reliable process to communicate new technology requests.

For example, the district has not implemented Google Apps for Education (GAFE), a free suite of productivity tools for classroom collaboration, even though the implementation has been requested by curriculum staff for use with classroom Chromebooks. The Information Technology Department's response was that it was not ready to deploy or support GAFE. Therefore, classroom Chromebooks are limited to browsing the web. For access to the suite of Google products, like Google Docs or Google Forms, students are instructed to create personal Gmail accounts through the commercial version of Google. Since these accounts are not created through GAFE, they are not identified as student accounts, eliminating Google's requirement to comply with the Family Educational Rights and Privacy Act. Further, users of the commercial version of Google are required to be 13 years of age or older, which limits the use of Google products to the secondary grades.

Although the district has multiple wireless device carts, wireless connectivity is sporadic throughout the district. The Information Technology Department is in the process of building out the wireless network. The district has applied for E-Rate funding to update the entire district with access points in each classroom, but staff members are unclear of when they will receive wireless networks at their sites. Because the technology plan is outdated, there is no consistently communicated project timeline regarding the wireless networks. Therefore, teachers cannot plan to include the new technology tools in lessons across grades or schools. Regular district communication regarding the status of technology projects and plans can better help teachers prepare for the effective use of technology.

Recommendations

The district should:

1. Revise the technology plan with updated, relevant, measurable benchmarks, a vision for successful instructional technology, and how students will use technology and digital learning resources at school and at home.
2. Revise the technology plan with developed instructional technology implementation plans and timelines and describe expectations of how teachers will use technology in the classroom aligned with the Common Core standards.
3. Regularly communicate, through a webpage, email or monthly newsletter, the plans, goals and status of technology initiatives.

Certificated Professional Development

All positions in the technology department are responsible for providing technology-related staff development for teachers as needed. The technology department indicated that the professional development for certificated staff is adequate. However, instructional staff indicated there are insufficient opportunities for them to learn to use technology effectively in the classroom.

Teachers are offered training through the Information Technology Department by staff that do not have a background in teaching. The training topics focus on basic product functionality and not about how or why a teacher should use the tool to increase student achievement. When the presentation is complete, no feedback is sought to determine if additional training would be beneficial. Consequently, in many cases, technology tools are not being used to full potential. For example, the 2010-2015 technology plan describes technology in the classroom as being used by 30% of the teachers, while 90% of the classrooms have SMART Board interactive whiteboards. As of 2016, there has been no survey to update these numbers, but through interviews and classroom walkthroughs there appears to be a low use of SMART Boards other than for basic projection. While trainings from the Information Technology Department can help a teacher learn basic product operation, teachers will benefit more from belonging to a technology professional learning community that can help them learn to implement the product effectively in their lesson plans. Instruction in concepts and models like Dr. Ruben Puentedura's Substitution Augmentation Modification Redefinition (SAMR) model or the Technological Pedagogical and Content Knowledge (TPACK) framework will help teachers better understand how to use technology in teaching.

In December 2010, Mojave introduced the technology support teacher (TST) stipend for teachers to train other teachers in the use of technology. The position description for TSTs states that the stipend position is responsible for integrating technology into instructional activities and basic hardware, software and networking support. Multiple staff reported that their site TST only focused training on the district's gradebook and has not provided other trainings.

When instructional staff have interest in learning a product, they request a training from the site-assigned technology technician. However, unless instructional staff attend an outside conference or perform their own research, they have limited exposure to current and upcoming technology trends. Development of a catalog and schedule of presentations offered by the technology department and TSTs will help teachers identify and implement technologies available for the classroom.

The relationship between the technology department and curriculum services is fractured and does not foster an environment for collaboration. Prior to the significant role of technology in the classroom, the two departments could function independently. Now, collaboration is essential to maximize the benefits of new and evolving technology in teaching.

The technology plan references the International Society for Technology Education (ISTE) student standards, and uses the benchmark that all students will be proficient in them. The technology department has not provided training to teachers in support of the ISTE standards, and subsequently there has been no progress in students' ability to meet them. The ISTE benchmark is difficult to address and industry practice is to use it as a guide rather than as a measurement.

Recommendations

The district should:

1. Direct the TST stipend position to:
    - act as an educational technology liaison between the technology department and the schools
    - offer support to other teachers on fully integrating device use into the curriculum
    - create a professional learning community and ensure that the district's vision for technology is being implemented at every school
2. Develop a training catalog and schedule of technology trainings offered by the technology department and instructional integration trainings offered by TSTs for teachers to select from.
3. Follow up all trainings with a survey to improve future professional learning opportunities.
4. Schedule meetings between the administrators for the technology department, curriculum services and TSTs to encourage collaboration.
5. Revise the technology plan to use ISTE standards as a guide instead of a goal.

Devices

School staff use district-issued credit cards to purchase technology outside of the standard purchasing process. When technology purchases are made with a purchase order, the director of technology reviews the purchase request to determine if the purchase is in line with district standards and strategic direction, meets regulatory requirements, and is the best value for the district. The director is also responsible for advising site staff on the design, selection and use of computer and network hardware, software, and peripheral equipment. To do this, the technology department researches new technologies and selects preferred vendors, brands, and models.

When staff circumvent the purchase order process by using a district credit card, the technology department does not have the opportunity to determine if it has the appropriate infrastructure, training or staffing in place to support the purchase. This results in staff frustration when large projects are not completed in what is perceived to be a reasonable timeline, like the wireless network project.

Technology staff are expected to support all technology, even technology not vetted by the department. The director is responsible for advising district staff on purchases, and other technology department staff members are responsible for attending various district and school committees, such as the curriculum & instruction committee. The lack of project planning and communication between the technology director and the assistant superintendent of student achievement & instruction has resulted in technologies being purchased that are unsupported. Consequently, staff using the new technology feels unsupported by the district.

Although the district device standard operating system is Windows, multiple types of devices and operating systems are available throughout the district. Most devices are Windows-based laptops, but the most recent purchase was a cart of Microsoft Surfaces for an elementary site.

Chromebooks and iPads have also been purchased for use at various schools or in specific programs.

Technology staff indicated that nonsupported devices are designated a lower priority for support because of the additional time needed to research and complete the requested tasks. In one example, new purchases of iPads and Chromebooks remained boxed for months before they were distributed to the schools. Once the devices arrived at the schools, there was another month delay to unbox and distribute the devices to students and teachers.

A wide variety of devices can be difficult for a small technology department to maintain. As a best practice to keep operating costs low, many districts standardize on one brand device for Windows, one brand of tablet, and one brand device for Chromebooks.

Some districts offer flexibility in choice of operating systems and devices, but the additional flexibility requires additional labor and/or software resources to maintain. The technology department does not have an enterprise asset management (EAM) system to track or maintain devices connected to the network. An EAM system allows technology departments to manage devices like servers, laptops, smartphones and tablets from a central location. The goal of an EAM system is to optimize support operations without sacrificing quality for efficiency. Such a system would improve department efficiency by automating location lists and hardware and license inventories, and allow computers and devices to be reimaged, patched, and have new software installed from a central location. A couple of examples of EAM systems are Microsoft System Center Configuration Manager or e-Quip.

Recommendations

The district should:

1. Develop a process to review and preapprove credit card purchases similar to the review that occurs for purchase orders, including the review to determine if the purchase is in line with district standards and strategic direction.
2. Develop a list of supported devices to help school staff select pre-vetted equipment that meets district standards.
3. Place a hold on purchase requests for nonstandardized equipment until the originator can discuss the request with the director of technology. This will allow the director to identify why the nonstandardized device is being selected and discuss any standardized options that may meet the specified needs.
4. Implement an enterprise asset management system to track and maintain devices connected to the network.

Services

Website Development and Support

The district has developed an in-house website structure to provide each school with its own webpage. Since the district does not have an assigned webmaster, a technology technician is responsible for updating and maintaining the general website. Each school webpage uses an inline frame to embed a Word document that is saved on the network into the website. This setup allows school office staff to change the contents of the Word document and update a section of the school web page without using technical code. School staff find the design limiting as an effective communication tool. Also, teachers do not have individualized class pages to post information and lessons to communicate with students and parents. More significant changes to the school websites are slow because the technology technician must complete the updates.

Implementing a content management system (CMS) would give the district the ability to manage the website simply and efficiently. A CMS has a front-end user interface to allow users with limited expertise to add, modify and remove content from the website without the expertise of a webmaster. Further, publishing permissions can be assigned to school sites so that school administrators can publish their own school content and teachers can create and update their own individual class pages. A CMS can also provide an administrator final publishing authority to review content changes before publishing.

To fully benefit from implementing a CMS, staff should be trained on how to use the software or approve content and how to maintain the district standard for a unified presentation across all school and teacher sites. Additional professional development should be provided to teachers regarding district policies on social media use and digital content and for the appropriate use of posting to the website.

Recommendations

The district should:

1. Implement a content management system enabling school sites improved access to update their school websites.
2. Provide training for staff on how to use the content management system and include district policies on social media use and posting digital content.

Content Filtering

The district's content filtering restrictions are inefficiently and inconsistently applied in classroom settings. Instructional staff shared their frustration with requesting websites to be used in classroom presentations to be unblocked. Some teachers are unaware how to request a website be unblocked. In some cases, a website, such as YouTube, was unblocked when the lesson plan was developed and then blocked again before instruction occurred. Teachers are required to submit a helpdesk ticket to request a website be unblocked. A classified technology employee then reviews the site and determines if it should be unblocked. The technology employee that makes this determination is not a credentialed employee and may not know how a website may benefit the teacher. Best practice is to have a credentialed teacher review the blocked website and determine if there is a safer alternative or if the website should be unblocked.

While adhering to the requirements of the Children's Internet Protection Act (CIPA) to prevent children from accessing potentially inappropriate content on the internet, many districts allow their teachers to have access to blocked content for instruction. Mojave Unified has tried several ways of managing this scenario, from unblocking individual websites to blocking a website like YouTube for all users and providing an override password to teachers. However, students and teachers have circumvented both of these methods by using web proxies to bypass the filter.

Teachers that are able to use websites like YouTube have not been trained on CIPA or on the positive and negative effects of social media. The best practice is to offer a filtering training each year for teachers that may request websites be unblocked. Once trained on the district's expectations for using the internet for education, those teachers could then be approved to bypass the filter.

Recommendations

The district should:

1. Identify at least one credentialed staff member per site, like a TST or principal, to review and determine which sites are used for education and if there are unblocked alternatives.
2. Develop a filtering training to be administered annually to teachers that wish to have access to blocked content.

Network Administration and Infrastructure

Data Center

The data center is located in the district office and is accessed through the conference room. Entry to the data center is through a single door that can be forced open. This could allow unauthorized access to systems and theft or damage to the equipment. The district's security system does not track access to the data center, and there is no separate alarm zone for the data center. The district can improve the physical security by installing a solid door, with a security lock that tracks all access to the room, and setting up an alarm zone that allows the data center to be secured separately from the rest of the building.

The data center does not have dedicated air conditioning or fire suppression systems, or a backup generator to provide power. In the case of a power outage, a significant disruption in service would occur for all schools, including a school's ability to access critical service, like the internet, the student information system, email, and the online testing and assessment system.

Since the district office provides technology connectivity for all the schools, it is critical to ensure these systems are reliable and secure. This would include implementing a dedicated data center following industry standards that meets school sites' needs, along with appropriate physical security, a backup generator, fire suppression including heat and smoke detection, and dedicated air conditioning.

Recommendations

The district should:

1. Install the security and safety equipment detailed above.

Data Backup and Security

Each school site has a server with dual purposes, functioning as both the domain controller to grant authorized users access to network resources and as the staff file storage server. It is recommended for performance and security reasons that a domain controller is not used for purposes other than network connectivity services.

The district does not have a data backup and recovery plan to protect data on critical servers, such as the Exchange email server, Eagle Aeries student information system, Active Directory domain controller, and staff file storage. In the case of a catastrophic event there is no tested process to restore these systems. For example, to back up the student information server, the district uses a manual scripted process to copy files from the Eagle Aeries Structured Query Language database to a second server that is running short of file space. This is not a secure or recommended process for backing up critical data. Further, the department has not tested the data recovery process.

In the case of a catastrophic failure, the district would be severely impacted and vital data may not be recoverable. Best practice for backup and recovery of critical data is to implement a data protection, backup and recovery product, and then develop and regularly test the data backup and recovery procedures.

Before selecting and implementing a backup product, the district should review all networked resources to identify which are critical functions and data systems that must be recoverable. Once complete, the district can select the appropriate product for its needs, like a network attached storage disk backup system. In addition to onsite backup, the district should plan and implement offsite backup to safeguard data in the case of a localized natural disaster. Once the systems are implemented and processes to back up and recover data are created, the processes should be tested at least annually to ensure that recovery occurs within an appropriate period of time and the data is retrieved correctly.

Recommendations

The district should:

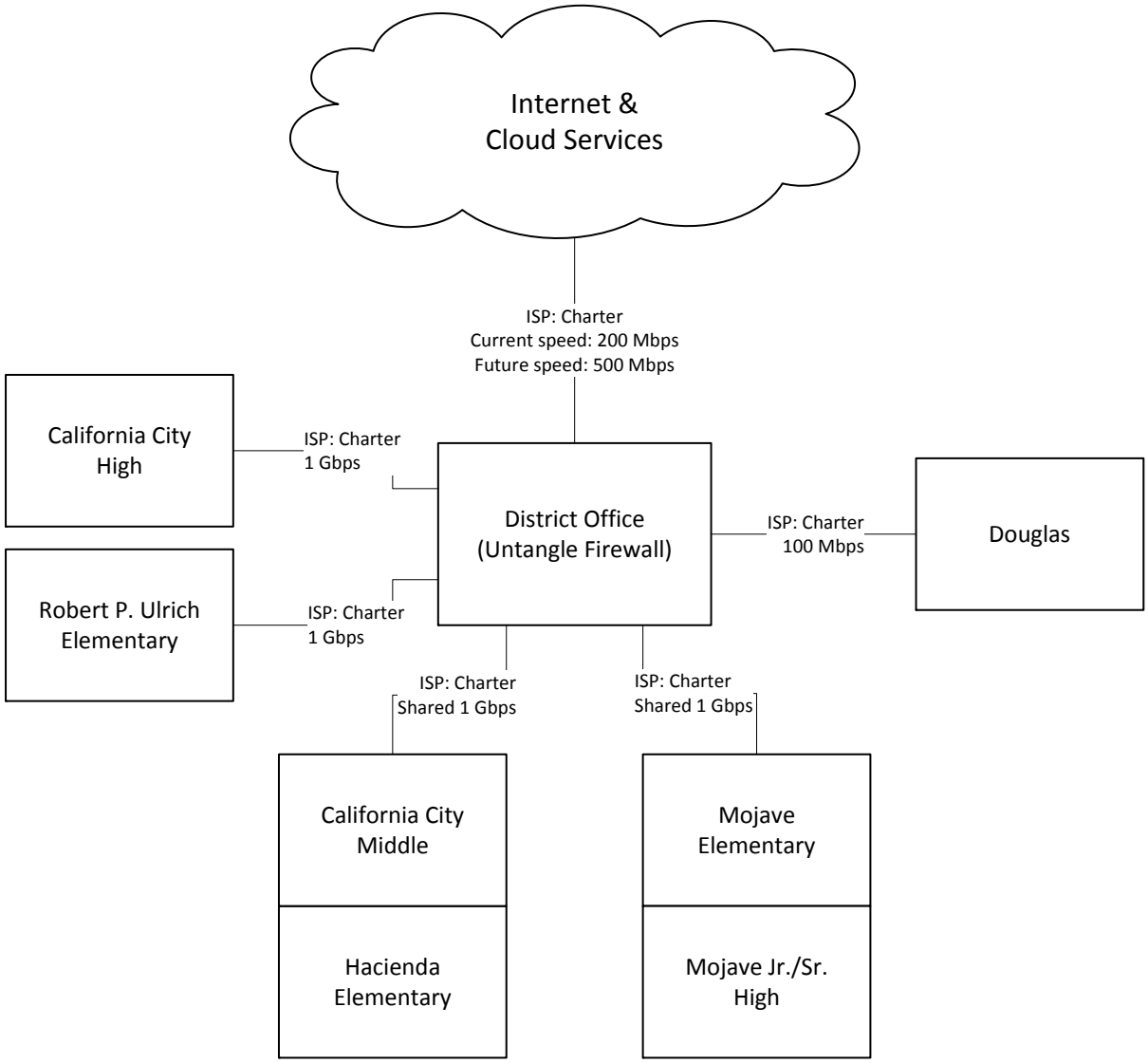
1. Move staff file storage from the domain controllers to a centralized file server.
2. Implement automated local and offsite data backup.
3. Develop a data recovery plan that identifies processes to restore data, and test the processes annually.

Wide Area Network Equipment and Design

School staff reported that slow internet speeds limit student productivity at certain times of the day. Specifically, students experience network slowness when attempting to login or use the Read 180 and Renaissance Place web-based programs in the morning. On some occasions, students lose their testing progress in Read 180 when the network response decreases so significantly that students are logged out mid-use of the program.

Schools are provided access to the internet and cloud services through the district office via a wide area network (WAN) with Charter Communications as the internet service provider (ISP). The connections speeds vary from 100 Mbps to 1 Gbps at each school depending on the student population size. Some schools share a connection, like Mojave Elementary and Mojave Jr./Sr. High, because of the close proximity to another school.

The district office connection to the internet is 200 Mbps, although there were plans to upgrade the circuit to 500 Mbps on July 1, 2016. The district uses Cisco 3750 switches at the schools to connect to the WAN. The schools connect back to the district office through a Cisco 4506 switch. The Untangle firewall controls ingress and egress traffic to the internet and provides content filtering.



The district's internet connection appears to be saturated and approaching or surpassing the 200 Mbps limit during the morning hours when most classes use these programs. The slowness has also been noted by district office staff unable to perform their own duties during these same time periods. Both the Read 180 and Renaissance Place software are web-based products that require ongoing sufficient bandwidth. Exceeding the amount of available bandwidth will also affect other critical services, like statewide online testing.

It is best practice to regularly run network monitoring software to review and analyze network activity and quickly identify issues before they progress. The software can monitor bandwidth, availability and hardware health issues. Most software will send out alerts if systems are unavailable or bandwidth has reached a critical point. The technology department is in the process of implementing a network monitoring product by Solarwinds, but it is not fully implemented and has limited historical data available regarding the condition of the network.

The technology department has not developed monitoring or critical response procedures. When implementing network monitoring, the department should identify important network services to be monitored. For example, it is common practice to monitor data circuits, switches, wireless access points (WAP), servers, firewall and ISP connections. The procedure should

include definitions for the maximum tolerable amount of time for a system to be unavailable. Once the services are identified, the district should develop response processes and determine the maximum tolerable downtime for a system to be unavailable, such as what actions the technology department will take if a circuit fails and remains down for more than a day.

Recommendations

The district should:

1. Proceed with plans to increase the district office bandwidth connection from 200 Mbps to 500 Mbps.
2. Implement monitoring and analysis of network components and critical systems via a network monitoring software system.
3. Implement procedures for how the network will be monitored and how the department will react when an alert is sent.

Wireless Access

Teachers are concerned with the lack of wireless connectivity available in the classroom at their schools, which hinders their use of mobile devices, such as iPads, Chromebooks, Surfaces, and other wireless connected laptops. The infrastructure cannot support the mobile devices that are in the schools. This has caused frustration with teachers and administrators. The lack of wireless at the sites has severely limited the ability for students and teachers to use mobile devices. In one example, a teacher at Hacienda Elementary scheduled a virtual field trip but the wireless wasn't strong enough in her classroom so she had to move the class to another classroom to participate. In another example, an organization provided a weeklong training for teachers on Common Core. The training was held in the school cafeteria, but the wireless network was set to deny access to the network for any personal devices, including teacher's personal devices that were brought specifically to use for the training.

The district has existing school-site-specific, small-scale wireless access. Cisco WAPs have been installed in schools with a Cisco wireless controller to manage the WAPs. Mojave Elementary and Mojave Jr./Sr. High have very limited wireless access with only one or two WAPs in each office and library and no access in the classroom. In contrast, Hacienda Elementary has school-wide access, although the resulting limited coverage has left some classes unable to connect at a reasonable speed.

Many school districts have used wireless devices to expand student access to technology in the classroom. Mobile lab carts require less dedicated space than traditional hard-wired lab classrooms. The cost of wireless devices has decreased, making purchase and replacement more affordable. However, expanding from a hard-wired network to incorporate a new wireless network takes significant investment in planning and financial resources. Successful implementations are based on strong strategy and a detailed plan before a plan is fully implemented:

- To evaluate the local needs for wireless access:
  - Talk to staff to determine how they would use the wireless network. Will the district need a guest network?
  - What coverage is required?
  - Are there any other requested features?

- To develop a plan to meet the wireless needs:
  - Define the budgets for implementation, support training, and ongoing maintenance and replacement.
  - Research and define a standardized wireless option. Confirm the standard operates with the existing network.
  - Design the wireless network configuration and coverage.
  - Develop a plan to secure and monitor the network.

The district has plans to upgrade the wireless infrastructure and install access points in every classroom. The district will add a second wireless controller for redundancy.

Recommendations

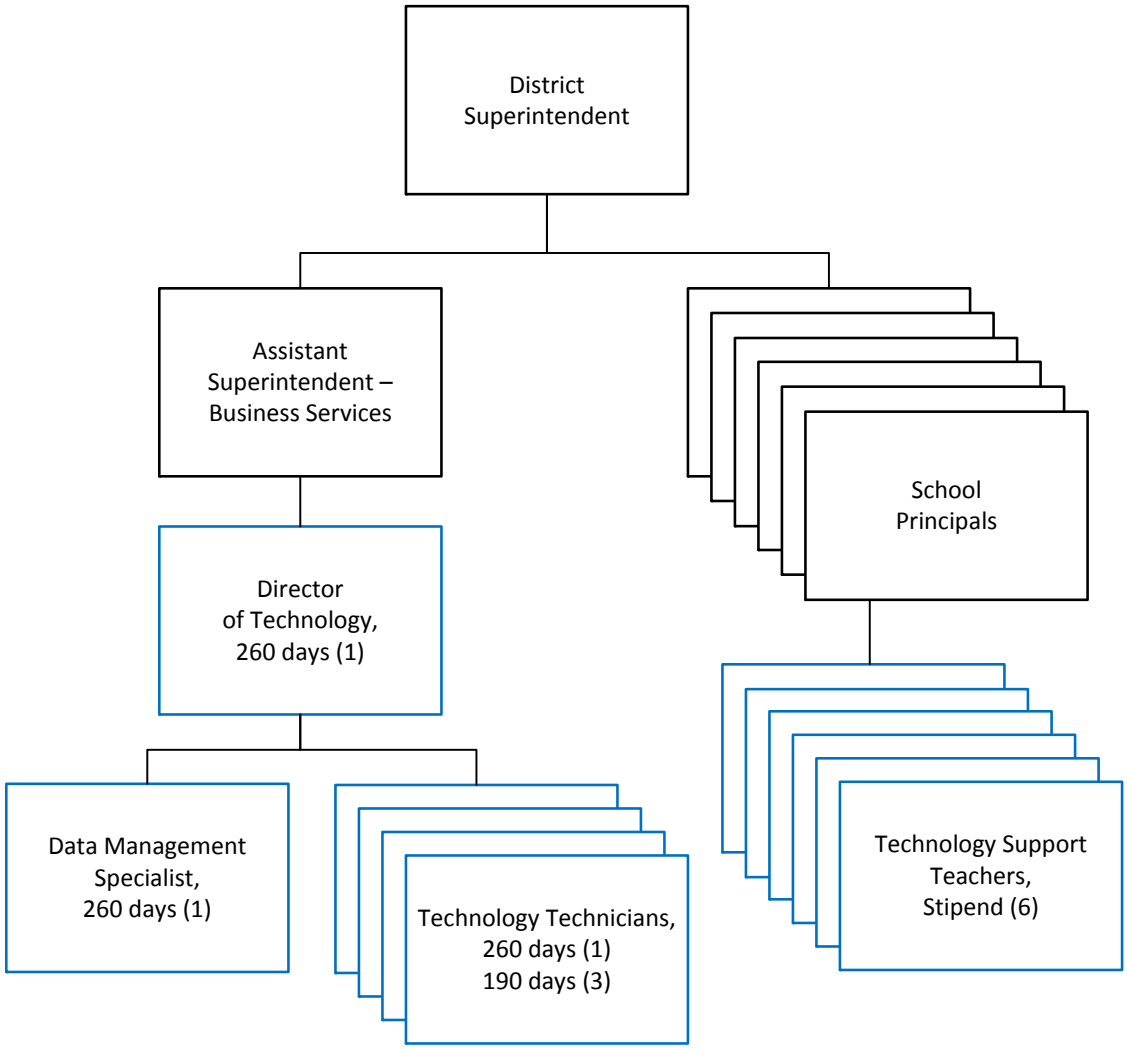
The district should:

1. Review the project plan to implement the wireless network districtwide and develop detailed responses for any areas of weakness.
2. Continue the process of upgrading the wireless infrastructure at the school sites by installing access points in every classroom along with a second wireless controller.

Technology Support Staffing and Organization

Technical support is provided by five full-time positions in the technology department: one director of technology, one data management specialist, and four technology technicians. All positions are 260 days per year, except that three of the technology technician positions are 190 days per year. There are six technology support teacher stipend positions, one at each school site.

The director of technology manages the technology department and reports to the assistant superintendent of business services. The technology support is organized as follows:



The following sections organized by job description offer a suggested position realignment among existing staff to clarify roles and to better support the district's goal of integrating technology in the classroom.

Data Management Specialist

The data management specialist's primary responsibilities are:

- the operation, maintenance, security and data integrity of the student information system, Eagle Aeries

- consolidating data from various district resources and software systems for use in reporting to outside agencies, like the California Longitudinal Pupil Achievement Data System (CALPADS), or other internal analysis
- training and collaborating with staff on SIS and other data related systems, including identifying and troubleshooting issues and preparing data for reports
- developing dashboards for staff to track key LCAP indicators to enhance their decision making ability and improve educational outcomes

The data management specialist spends a significant amount of time validating data between the Eagle Aeries system and CALPADS. She researches and resolves reporting errors without assistance from educational services or school sites. There is no designated backup employee for these duties.

Recent changes to the state's funding allocation model, the Local Control Funding Formula (LCFF), and the new educational standards, Common Core State Standards (CCSS), makes managing student data even more essential. Prior to the LCFF, CALPADS certifications were seen as secondary to average daily attendance (ADA), the primary factor for revenue generation under the prior allocation model. The primary focus for some districts was simply certifying CALPADS data with no errors. It was common practice for a single staff member to resolve errors without expert knowledge of the individual students, a practice that can lead to bad data.

Under the LCFF, both ADA and CALPADS data play a significant role in funding. However, many districts have not reviewed their processes to determine where efficiencies and data quality improvements could be made. For example, when correcting errors and checking for reasonableness, principals and other site personnel would be more familiar with their school's student demographics, the individual students and student achievement measures being reported. Thus, the processes around CALPADS reporting and error correcting should be revised to include subject matter experts, like principals, child nutrition staff, and educational services staff.

The data management specialist coordinated all of the California Assessment of Student Performance and Progress (CAASPP) online tests, documentation and training of teachers when it was first implemented in spring 2015. The task of administering the tests onsite at each school was an overwhelming task for the small technology department.

In spring 2016, the responsibility for CAASPP testing transitioned from the data management specialist and other technology department staff, to educational services. However, the technology department continued to play a significant role in managing these processes. For example, special accommodations required for students with special needs was still administered by the data management specialist. Due to inappropriate administration of the testing by school staff, security breaches occurred, including students accessing cell phones during the testing period, and student logon information being inappropriately shared. With the increasing importance of CAASPP testing, educational services should review the level of support for teachers providing CAASPP testing and identify areas to strengthen the process and minimize irregularities for the next testing window.

The data management specialist position is responsible for the security of the student data and for protecting the privacy of student records. In September 2014, AB 1584 added Education Code (EC) 49073.1, which authorizes school districts to enter into a contract with a third-party vendor for the services of digital storage, management, and retrieval of pupil records or to provide educational software following a policy adopted by its governing board. Any relevant contracts entered into effective January 1, 2015 require the following three provisions:

- a statement that the pupil records will continue to be the property of and under the control of the school district
- a description of the actions the third party will take to ensure the security and confidentiality of pupil records
- a description of how the school district and third party will jointly ensure compliance with the federal Family Educational Rights and Privacy Act (FERPA).

BP 5125, Student Records, allows the district to enter into a contract with a third party per EC 49073.1. However, the district is out of compliance because it has not obtained the required provisions from the third party vendors. The data management specialist should work with the director of technology to ensure that all contracts with any third party vendors that store student data records are compliant with AB 1584.

Recommendations

The district should:

1. Review SIS and CALPADS data collection, verification and correction processes to identify and update any outdated isolated practices.
2. Document and communicate the revised roles in the CALPADS data collection process so that other staff are aware of the required timelines and understand the importance of their role in the process.
3. Develop and communicate adequate guidelines, training and support for CASSPP testing to the schools under the direction of educational services.
4. Review all third party vendors that store student data for compliance with AB 1584. Obtain the required provisional statements from any noncompliant vendors. Develop an ongoing process to obtain the statements from any future third party vendors that store student data.

Technology Support Teacher

The TST is a credentialed stipend position that is responsible for providing the following support at an assigned school outside of the regular contract day:

- supporting the integration of technology into instructional activity by communicating, collaborating, mentoring, coaching and consulting with colleagues
- providing professional development opportunities for faculty
- providing basic hardware, software and network support

The TST position receives a flat stipend without any accountability for completing these duties. Reports of the services TSTs provide varies by school site. However, most TSTs' efforts focus on providing traditional technology device, networking and application support (primarily gradebook) during the regular contract day.

Little training, collaboration, mentoring or coaching to integrate technology into instruction occurs between TSTs and other teachers. Only one school site, Hacienda Elementary, reported that the TST has developed trainings to support technology integration into instructional activities.

The lack of accountability has created an environment where ineffective TSTs remain in the position. Each school year, teachers submit applications to become the school TST. The school principal selects an individual from the applicants to serve as TST for one school year. The process of selecting a TST annually could resolve issues of retaining an ineffective TST across multiple school years. However, interested teachers are reluctant to apply and take the stipend away from a fellow teacher.

Most TSTs provide first-level technology support during the school day and simultaneously manage a classroom. While there are benefits to having a full-time, on-site individual to assist in small or emergency technology requests, a similar level of support can be provided to most schools by reassigning the technology technicians, as discussed in the Technology Technician section of this report. Better segregation of technology support duties between the TST and technology technician positions would refocus TSTs to the primary responsibility of supporting technology integration into the classroom.

For more effective results, the TST position should be revised as an hourly stipend position with a not-to-exceed amount for services provided outside the regular contract day. The revised job description should provide specific criteria of the eligible duties and focus on implementing the use of technology in the classroom for instruction and not providing technology device and network support. Any off-site development work should be pre-approved by the school principal. The school principal should be responsible for reviewing and approving the timesheet monthly for payment. Further, school and district administration should pre-identify and schedule dates for professional development presentations developed by the TSTs.

TSTs are invited to participate in a monthly informational meeting with the technology department. These meetings are intended to provide TSTs with basic instruction on how to use new technology and not act as an open forum. Interviews indicated that the tone of the meetings often changed and became a place where TSTs probed for updates on projects and other outstanding requests. TSTs can provide a valuable perspective on the daily use and inadequacies of technology tools or trainings at their school. The monthly meetings would better meet technology planning needs if they are repurposed to introduce new technology, proactively communicate the status of major projects and requests by school site, and provide an open arena to discuss individual school vision for technology and instruction. Adding another collaboration item onto the monthly meeting agenda and inviting the assistant superintendent of student achievement & instruction to participate would allow the TSTs the opportunity share how they are supporting their school sites and collaboratively plan trainings.

Recommendations

The district should:

1. Revise the technology support teacher job description as described above.
2. Revise the TST stipend payment process to be timesheet based and to require preapproval by the school principal for any work provided offsite.

3. Schedule dates for TSTs to provide professional development that focus on implementing technology in instruction.
4. Repurpose monthly technology department and TST meetings as described above.

Technology Technician

Per the job description, the technology technician's primary responsibilities are:

- installing, maintaining and repairing computer systems and equipment, peripheral equipment, and application software
- installing, maintaining and repairing network systems, LAN design and networking software
- providing technical support and training to district personnel for both instructional and administrative activities

There is little differentiation between the services provided by the technology technician, technology support teacher and director of technology positions. Technology technicians perform device, network and application support and develop full training sessions for instructional staff on the use of technology tools and applications. The technology technicians also act as liaisons between the school sites and the technology department. For example, project planning and purchase requests are discussed with the site technicians instead of the director of technology. Technicians research options and provide recommendations to the school staff. Larger projects that need to occur over the summer break are reported by the technician to the director, who compiles the information into a single document to support requests for additional FTE.
As technology implementation has increased so have support demands, causing a backlog of requests. The technicians resolve basic support tickets assigned to them by the director of technology, and also encounter verbal support requests as they work onsite. The technicians request any verbal support requests be submitted to the Order Processing and Requisition Accelerator (OPRA) work order management system after they are resolved for tracking and reporting purposes. Still, school staff reported that progress on projects at the school sites is slow. Adjusting the technology technician work assignments to eliminate purchase recommendations, project planning and developing instructional integration training sessions will focus technicians on providing daily support and completing small site-based projects.

One staff member indicated he looks forward to attending the Computer-Using Educators (CUE) conference in the fall to learn how teachers statewide are using technology for instruction so that he may develop local trainings in these practices for district teachers. While attending conferences such as CUE can help the director of technology and other visionary positions to understand the up-and-coming needs of the classroom, the focus of technology technician support and professional development should remain on providing device, network and application support. The task of developing trainings to instruct teachers on integrating technology in instruction is best performed by qualified certificated staff.

Technology technicians are each assigned to sites for support and provide additional support at other school sites for special projects. The assignments and standard work days are as follows:

-

- Hacienda Elementary and California City High (190 days)
- California City Middle and Robert P. Ulrich (190 days)
- Mojave Elementary and Mojave Jr./Sr. High (190 days)
- Douglas school, the district office site, plus network and server support districtwide (260 days)

The assignment of California City schools between two of the technicians requires additional travel between their assigned schools to provide support, resulting in the technician having less time to respond to work order tickets and additional time to respond to emergency requests. Hacienda Elementary and California City Middle schools are side-by-side, but assigned to different technicians. Staff indicated that the inconsistent assignment was due to Hacienda Elementary and California City High being newer, technology-rich schools that required more specialized support. However, with projects underway to increase access to technology across all district schools, travel between assigned sites should be reduced as much as possible, allowing most schools to benefit from having a technician on site or at the adjacent site for fast and reliable support.

While three of the technology technicians are similarly responsible for providing device, network and application support, the fourth technician supports the Douglas school, district office and the district's backbone network and servers. The technology technician job description does not reflect the additional network and server duties or the skills required to perform them. A gap in technology service occurred when the network and computer coordinator filled the director of technology position and the coordinator position was eliminated. The two positions share some management duties, but otherwise provide significantly different services. The director of technology position performs department and resource management and provides technology leadership. The network and computer coordinator position was responsible for the wide and local area networks, server hardware and enterprise application maintenance, installing network supports like cabling and conduit, and providing device, network and application support duties shared with the technology technician position. To a lesser degree, the network and computer coordinator provided some technology management services, such as reviewing and recommending purchases of technology for the district, which the director of technology now provides. Reclassifying one technology technician position into a new network technician position (see Appendix B) would better reflect the experience, training, and network and server duties necessary to adequately maintain and expand the district's servers.

Recommendations

The district should:

1. Adjust the technology technician work assignments to:

- focus on providing device and network support
- provide basic application support, i.e., how to navigate the application, not how to integrate applications into instruction
- limit the role of large project planning and product selection

2. Refocus professional development opportunities for technology technicians to better suit their core duties.

3. Adjust California City school support assignments to reduce travel between assigned sites.
4. Reclassify one technology technician into a new network technician position.

Director of Technology

The director of technology's primary responsibilities are:

- Provide technology leadership
- Organize and communicate technology vision throughout the district through activities such as attending cabinet meetings, coordinating meetings with the TSTs and leading the technology committee
- Develop long- and short-term plans, plan and manage technology projects, and prioritize resources
- Develop and communicate technology standards and the process to purchase technology
- Advise staff on technology purchases, upgrades and other technological trends
- Ensure appropriate and adequate infrastructure is in place to support district office and school functions reliant on the availability of technology
- Manage the technology department
- Develop the technology department budget
- Provide technology-related staff development for teachers and district personnel as needed
- Lead and direct contract vendors
- Provide maintenance support for the phone system

There is no clear or concisely communicated vision to guide the district's use of technology and the technology department's support services. District staff shared that technology intentions and decisions felt either like a secret or an afterthought.

The director previously held the position of network and computer coordinator. After the retirement of the technology administrator, the network and computer coordinator acted as a working department manager. In July 2015, the school board approved the director of technology position at the superintendent's request. The superintendent designed the new position to lead and organize technology in the district, an increasingly important role as technology became more prevalent in all aspects of school and district activities.

When the director of technology position was filled, the network and computer coordinator position was eliminated but the networking and server duties were not reassigned. The director of technology continued to handle the duties of both positions until a technology technician assigned to the district office began to cross-train into the networking and server duties. At the time of this report, the director still helps supports the network and servers as the technician continues to learn all aspects of those systems. Consequently, the director has not had sufficient time to focus on developing and concisely communicating a district technology plan for use in directing the technology department.

School staff expressed frustration with the length of time it takes to resolve work orders. The process to submit work orders into the web-based Order Processing and Requisition Accelerator (OPRA) management system is inconsistent among school sites. Several of the school sites use a paper form to submit a work order to the site secretary, who inputs the work order into OPRA. The submitted work orders are then queued and await the director of technology to assign it to a technology technician. However, since teachers cannot submit a work order into OPRA, some bypass the process and email the technician directly for support. Although technicians reported they request the staff member follow up and submit a ticket into OPRA, many tickets are not submitted. For the tickets appropriately submitted, OPRA is set up inefficiently and requires the director to interact with each ticket twice in the workflow, first to assign a ticket to a technician and later to close it after the technician marks it complete. Technicians try to remedy the support requests, regardless of whether it was submitted officially through OPRA or through another method. These various processes have created an invisible bottleneck, increasing the time it takes to provide adequate technology support for all requests because they aren't all documented.

Because the director must interact with each ticket twice, he spends a disproportionate amount of time managing the work orders and still cannot discern how much support is required of each school. Allowing teachers and other staff to enter work orders directly into the OPRA system, with site approval configured if desired, would increase the visibility of most tasks requested of the technicians and could provide future support to increase staffing. Additionally, the district can configure the OPRA system to send a text message or email for emergency requests, alerting technicians of emergency requests as soon as they are submitted and minimizing instructional idle time.

While the director needs to monitor the volume of requests to ensure support is provided timely, reviewing workload and resolution levels can be accomplished by reviewing reports of outstanding and recently closed tickets. Adjusting the process to auto assign work order tickets to technicians based on their assigned location and allowing technicians to directly close a ticket would provide the director more time to focus on communicating with district and school staff to assess other technology support needs. The work order system can be set up to allow technicians to escalate an issue regarding a project request or professional development request to the director. The director should facilitate daily stand-up meetings, with staff participating either in person or by phone to briefly report any major occurrences from the prior day, convey work plans for the current day, and request escalation assistance as needed.

Although the director of technology is responsible for developing long- and short-term plans including recommended priorities for technology needs and resources, he does not attend departmental meetings or meet with department or school administrators to gather and assess their priorities and needs. While allowing other technology staff to attend these meetings allows them to provide services directly, such as the data management specialist's relevant role on the Positive Behavioral Interventions and Supports (PBIS) team, it is important for highlights of the meetings to be shared with the technology director. To best understand the requests and concerns of the administrators guiding technology in their department or school, the director should meet with them at least once a year to discuss plans and regularly throughout the year to facilitate open communication regarding outstanding projects and requests. These meetings will also promote discussion and resolution of any recurring issues or concerns from either party.

The director of technology is responsible for developing and maintaining the district technology plan and facilitating the Technology Advisory Committee (TAC). As stated in the Technology Plan and Project Planning section of this report, the committee has not met in over a year and the technology plan is out of date. The director should reinstate the TAC with bimonthly meet-

ings to help prioritize the district's resources. Reviving the TAC will serve as an additional forum to communicate the district's status of major technology requests and vision.

In addition to the technology plan, the director is responsible for implementing short- and long-term plans and activities. However, no defined process is in place to plan, implement and then assess the results of technology projects. The practice of planning project-by-project in a short-term manner with no defined timeline or detailed resource allocation has left school staff frustrated when projects aren't completed within a reasonable timeframe or with the desired results. The director should communicate with department and school administration to understand the objective, desired schedule, and resources available to support any requested projects. The director must then assess the resources of the department, i.e., sufficiency of the network infrastructure, compatibility with other applications and tools, and existing staff knowledge and expertise, to determine if additional resources must be allocated for a successful implementation. Project management software can be used to increase communication with administrators regarding the status of their projects, set and monitor timelines for components or entire projects, and delegate and monitor tasks assigned to staff.

The director does not acquire the information required to develop or maintain the department budget. As discussed in the Budget Development and Review section, the technology department budget is based on prior year expenditures with no consideration of future projects. Project budgets are added and adjusted during the year. If the director of technology participates in discussions with department and school administrators, he can help to develop a more accurate budget that will include project costs and increase visibility of the district's technology plans at the onset of the school year.

The director has been reluctant to deploy new technologies and change district technology standards for fear of weakening security. There is strong frustration from department and school administration with regard to the lack of support, vision, and communication for technology. Staff indicated they are frustrated because their innovative technology ideas are denied due to the technology department's security concerns. The resulting ongoing placement of interactive whiteboards and classroom sound systems is outdated. This has caused the district to fall behind in many of the educational technology initiatives driving other education institutions such as wireless infrastructure, one-to-one mobile devices for students, and student collaborative tools such as Google Apps for Education and Microsoft Office 365.

Numerous complaints were reported of the schools experiencing extended system outages, network slowness, software crashing, and teachers being blocked from educational websites without communication or explanation for these issues. Instead, the director's focus is on the work order system, maintaining existing practices, and doing in-house facilities projects such as running network cabling and installing projectors and sound systems. The district is also lacking in technical security. Networking and security measures have not been implemented to help maintain and monitor the district network and provide effective solutions for protecting critical file systems and data.

The difference between the responsibilities of a working department manager and a director is significant. A manager's focus is on the day-to-day operations, while a director must also consider short- and long-term visions to provide guidance. Professional development opportunities like the Chief Technology Officer (CTO) Mentor Program managed by the California Educational Technology Professionals Association (CETPA) or the Project Management Professional (PMP) certification through the Project Management Institute (PMI) can help develop these leadership skills.

Recommendations

The district should:

1. Assign phone system, networking and server support duties to a new network technician position to allow the director of technology to develop and communicate the district's vision for technology.
2. Set up teachers and other school staff to directly input work order requests into OPRA.
3. Revise the OPRA work order system to better serve the needs of all district staff, as discussed above.
4. Regularly schedule technology department stand-up meetings for staff to report their activities and challenges.
5. Invite the director of technology to participate in district, department and school meetings.
6. Develop cohesive partnerships and effective communication channels with the individual schools and district administration. Schedule regular meetings with each principal to discuss site technology needs and share the district's technology goals.
7. Reinstate the Technology Advisory Committee (TAC) for bimonthly meetings under the guidance of the director of technology.
8. Select and implement a project management system to monitor and assess the status of technology projects.
9. Have the director of technology work with the assistant superintendent of business services to develop and monitor the department budget and special project budgets.
10. Support the director of technology in attending a technology leadership or project management certification program.

Appendices

Appendix A - Study Agreement

Appendix B - Department Structure with Reclassification

Appendix A

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

FISCAL CRISIS & MANAGEMENT ASSISTANCE TEAM
STUDY AGREEMENT
April 6, 2016

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

1. BASIS OF AGREEMENT

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

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

2. SCOPE OF THE WORK

A. Scope and Objectives of the Study

1. Provide a comprehensive staffing analysis to determine the district's ability to support the current state of technology including hardware, software, professional development, student assessment and accountability requirements, and the use of technology. The technology review will include an analysis regarding the staffing levels and organizational support for the following:

   a. User, desktop and workstation support,
   b. Network administration
   c. Website development and support
   d. Email support for district- and site-level staff
   e. Student attendance system
   f. Financial reporting system

g. Hardware installation and setup
h. District approved application software used at district and site levels
i. Technology in the classrooms, and student data assessment and accountability protocols
j. E-Rate administration and support
k. Wireless technologies

2. Evaluate the organizational structure, staffing, workflow, efficiency and duties of the technology department personnel. This component of the study will also include a review of technology-related board policies, administrative procedures, and operational practices to provide data regarding current practices and procedures. The team will evaluate the current workflow and distribution of technology-related duties of the department and provide recommendations for improved efficiency, if any.

a. Review job descriptions for all technology-related positions, interview staff, and make recommendations for staffing improvements. All recommendations will include estimated values for any proposed position reductions or enhancements to the organizational structure. Additionally, the team may interview other staff including but not limited to school principals, department directors, and certificated and classified personnel to determine the efficiency and effectiveness of services delivered to schools or other departments.

b. Review professional development offerings and opportunities for department staff and provide recommendations regarding professional development training, if any.

B. Services and Products to be Provided

1. Orientation Meeting - The team will conduct an orientation session at the district to brief district management and supervisory personnel on the team's procedures and the purpose and schedule of the study.
2. On-site Review - The team will conduct an on-site review at the district office and at school sites if necessary.
3. Exit Meeting - The team will hold an exit meeting at the conclusion of the on-site review to inform the district of significant findings and recommendations to that point.
4. Exit Letter – Approximately 10 days after the exit meeting, the team will issue an exit letter briefly memorializing the topics discussed in the exit meeting.
5. Draft Report - Electronic copies of a preliminary draft report will be delivered to the district's administration for review and comment.

6. Final Report - Electronic copies of the final report will be delivered to the district's administration and to the county superintendent following completion of the review. Printed copies are available from FCMAT upon request.
7. Follow-Up Support – If requested by the district within six to 12 months after completion of the study, FCMAT will return to the district at no cost to assess the district's progress in implementing the recommendations included in the report. Progress in implementing the recommendations will be documented to the district in a FCMAT management letter. FCMAT will work with the district on a mutually convenient time to return for follow-up support that is no sooner than eight months and no longer than 18 months after completion of the study.

3. PROJECT PERSONNEL

The study team will be supervised by Michael H. Fine, Chief Administrative Officer, Fiscal Crisis and Management Assistance Team, Kern County Superintendent of Schools Office. The study team may also include:

A. Andrea Alvarado	***FCMAT Management Analyst***
B. To be determined	***FCMAT Consultant***
C. To be determined	***FCMAT Consultant***

4. PROJECT COSTS

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

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

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

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

Based on the elements noted in section 2A, the total not-to-exceed cost of the study will be $18,200.

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

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

5. RESPONSIBILITIES OF THE DISTRICT

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

B. The district will provide the following if requested:

1. Policies, regulations and prior reports that address the study scope.
2. Current or proposed organizational charts.
3. Current and two prior years' audit reports.
4. Any documents requested on a supplemental list. Documents requested on the supplemental list should be provided to FCMAT only in electronic format; if only hard copies are available, they should be scanned by the district and sent to FCMAT in electronic format.
5. Documents should be provided in advance of field work; any delay in the receipt of the requested documents may affect the start date and/or completion date of the project. Upon approval of the signed study agreement, access will be provided to FCMAT's online SharePoint document repository, where the district will upload all requested documents.

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

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

6. PROJECT SCHEDULE

The following schedule outlines the planned completion dates for different phases of the study and will be established upon the receipt of a signed study agreement:

Orientation:	to be determined
Staff Interviews:	to be determined
Exit Meeting:	to be determined
Draft Report Submitted:	to be determined
Final Report Submitted:	to be determined
Board Presentation:	to be determined, if requested
Follow-Up Support:	if requested

7. COMMENCEMENT, TERMINATION AND COMPLETION OF WORK

FCMAT will begin work as soon as it has assembled an available and appropriate study team consisting of FCMAT staff and independent consultants, taking into consideration other jobs FCMAT has previously undertaken and assignments from the state. The team will work expeditiously to complete its work and deliver its report, subject to the cooperation of the district and any other parties from which, in the team's judgment, it must obtain information. Once the team has completed its fieldwork, it will proceed to prepare a preliminary draft report and a final report. Prior to completion of field work, the district may terminate its request for service and will be responsible for all costs incurred by FCMAT to the date of termination under Section 4 (Project Costs). If the district does not provide written notice of termination prior to completion of fieldwork, the team will complete its work and deliver its report and the district will be responsible for the full costs. The district understands and agrees that FCMAT is a state agency and all FCMAT reports are published on the FCMAT website and made available to interested parties in state government. In the absence of extraordinary circumstances, FCMAT will not withhold preparation, publication and distribution of a report once fieldwork has been completed, and the district shall not request that it do so.

8. INDEPENDENT CONTRACTOR

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

9. INSURANCE

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

10. HOLD HARMLESS

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

11. CONTACT PERSON

Name: Keith Gainey, Assistant Superintendent - Business
Telephone: (661) 824-4001 x224
Fax: (661) 824-2686
E-mail: keithgainey@mojave.k12.ca.us

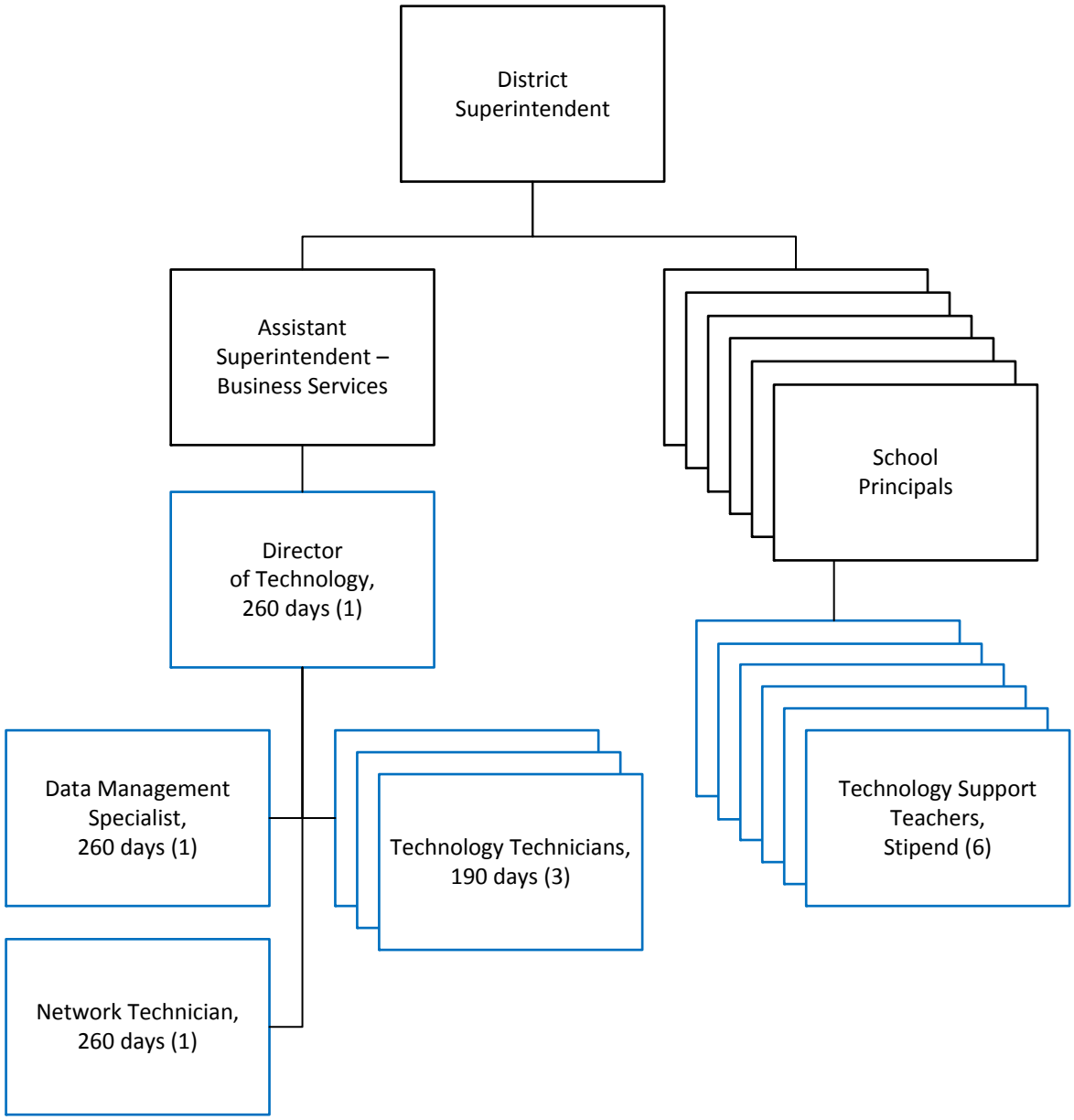
Keith Gainey 4/15/2016

Keith Gainey, Assistant Superintendent - Business — Date
Mojave Unified School District

Michael H. Fine April 6, 2016

Michael H. Fine, — Date
Chief Administrative Officer
Fiscal Crisis and Management Assistance Team

Appendix B


District Superintendent
Assistant Superintendent – Business Services
School Principals
Director of Technology, 260 days (1)
Data Management Specialist, 260 days (1)
Technology Technicians, 190 days (3)
Technology Support Teachers, Stipend (6)
Network Technician, 260 days (1)