June 5, 2017

Cheryl Jordan, Superintendent
Milpitas Unified School District
1331 E. Calaveras Blvd.
Milpitas, CA 95035

Dear Superintendent Jordan,

The purpose of this management letter is to present the findings and recommendations of the Fiscal Crisis and Management Assistance Team (FCMAT) with regard to the team's technology review for the Milpitas Unified School District. As indicated in the study agreement, dated December 13, 2017, FCMAT reviewed district technology, planning and replacement processes, and technology department staffing.

The study agreement states that FCMAT will perform the following:

1. Conduct an analysis of the district's technology, including gathering data on the software and hardware used, and make recommendations for improvement, if any.

2. Review the processes or planning used to ensure that hardware and software assets are up to date, and make recommendations for improvement, if any.

3. Analyze the status of the following and make recommendations for improvement, if any:

    a. Infrastructure replacement planning, deployment, and maintenance including timelines for each

    b. Help desk system and ticketing process

    c. Hardware installation and setup

    d. Technology in the classrooms

4. Conduct an organizational and staffing review of the district technology department, including school site technology support staff, and make recommendations for staffing improvements or reductions, if any.

**FCMAT**
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FCMAT conducted fieldwork at the district office on March 7-9, 2017, and additional off-site work during the weeks that followed. FCMAT reviewed numerous documents including board policies, equipment inventories, and job descriptions.

This management letter contains the study team's findings and recommendations.

FCMAT appreciates the opportunity to serve the Milpitas Unified School District and extends thanks to its staff for their cooperation and assistance during this review.

Sincerely,

Scott Sexsmith
Intervention Specialist

## Technology Support Overview

Information provided by the district's Human Relations Department indicates that the district's technology department is led by the director of technology services, who reports to the superintendent. The director of technology services leads a staff consisting of three management employees (network manager, network supervisor, information systems manager) seven classified employees (data technology services secretary, computer technicians (4), and computer-software support analysts (2)). Additional support comes from three teachers on special assignment (TOSAs) who work closely with the technology services department, focus on educational technology and report to the assistant superintendent of educational services.

## District and Classroom Technology

The district adopted Chromebooks as the standard device for students in 2010 with an initial purchase of 1,073 Samsung devices for the high school financed by a general obligation bond. Since then the district has acquired a variety of Samsung, Acer, HP, Haier, Google and ASUS devices with a combination of district and site funds to reach a current total of approximately 8,400 Chromebooks for students throughout the district. Schools also may have iPads, PCs or Android tablets that were purchased with site funds. Libraries have some desktops and Chromebooks, and learning centers and computer labs may have Chromebooks, laptops, or desktops depending on the instructional program needs. The Career Technical Education program at the high school includes five PC labs of 30-35 computers each. In total, the district has an estimated 12,000 student devices in use. The district now purchases Chromebooks in quantities of 500-1,000 at a time and schools are normally charged for the devices from their site budgets.

Most site administrative offices have desktop computers, and classrooms may have a combination of desktop and/or laptops for teacher use. Teachers are issued a laptop when they're first employed at the district and, depending on the school and instructional program, they may have various other devices for classroom instruction including Chromeboxes, Android tablets, or iPads. Teachers are able to select their preferred device, either a Mac or PC laptop. The district finances the teacher laptop program with special unrestricted funds on a four- to five-year replacement cycle. Special Education staff are not included in the teacher laptop program and either receive used equipment from general education teachers or their laptops are purchased with Special Education department funds.

During FCMAT interviews, staff indicated that the process and plan for distributing Chromebooks was clearly defined and well-implemented during the initial rollout in 2010, but the level of funding sites can expect from the district is unclear. The district recently purchased Chromebooks for students in certain grades in schools that committed to implement the personalized learning program, but other sites are responsible for purchasing their own devices. Staff at several grade levels stated they would like to have more Chromebooks available for students, and would like to reach a 1:1 ratio, but because funding is the responsibility of the school there is a lack of site funds to purchase the quantity of devices needed.

Some staff commented on their perception that devices are not evenly distributed and elementary schools receive most of the funding. Some staff stated that although the technology director and district administration may have established formulas for replacement cycles, school site staff are unaware of the current formula. Some staff indicated they would like to understand the plan and have better communication between their sites and the district.

The district technology services department makes decisions about vendors and devices, and purchases equipment on behalf of the schools. While this removes some burden from the sites, staff interviews

indicated it has resulted in decreased opportunities for discussion and collaboration between the district technology department and the schools. There was a district technology oversight committee in the past that was made up of district-level administrators and staff from each school, but this committee no longer meets. There have also been committees formed around specific initiatives, such as iReady and project based learning, but some staff indicated that, with the shift that occurred toward central purchasing and software management, there was no longer a purpose for a district technology committee.

Districts that successfully balance site autonomy while implementing district standards to optimize technical support and purchasing power also maintain active technology committees to facilitate communication among teachers, school administrators and the district. These districts have an active, engaged technology leadership team comprised of district technology and instructional leadership, school principals, special programs, technology support and maintenance and operations staff. The committee serves as a liaison between students, teachers and district and ensures a high functioning technology environment. It also provides a forum for discussion and decision-making about which technologies are most effective.

The district adopted Google Apps for Education in 2011 as the basic productivity suite of applications for all employees and students. All employees have Gmail accounts, and student access to Google apps varies by grade level, with grades kindergarten through 5th having restricted access. Districtwide applications include the following:

| Google Apps for Education | Productivity suite (students and teachers) |
|---|---|
| Microsoft Office | Productivity (staff only) |
| Aeries | Student information system |
| Illuminate | Achievement data management system |
| iReady | K-8 diagnostic assessments and online lessons |
| School Loop | School websites and secondary grade book |
| Follett Destiny | High school library management system |
| Alexandria | Elementary library system |
| SEIS | Special Education Information System |
| Nutrikids | Child nutrition |
| QSS | Financial and HR system (county-hosted) |
| Zendesk | IT work order system |
| Kissflow | Workflow automation |

The district is also adopting the Summit Learning personalized learning program at four elementary schools and a middle school, and continuation students use Odysseyware for credit recovery. The adult education school also uses Odysseyware for credit recovery for a segment of the high school student population in addition to adult learners working on their GED. Staff indicated there is an intent to implement more blended learning strategies throughout the district, but the specific plans and expectations for this were unclear among staff interviewed.

District schools use Google apps for productivity and have autonomy for selection of other educational applications and online supplemental tools specific to the needs of their students. These include, among others:

- Read 180
- Reading Counts

- Scholastic Reading Inventory

- Imagine Learning

- Pasco

- Osmo

- Newsela

- Blendspace

- CK-12

- Lucidchart

- Lucidpress

The timeline and process for the rollout of the 1:1 program was initially focused on distribution of devices to high school students and the adoption of Google Apps, but it was not associated with a broader, measurable plan for student learning. Some staff commented that they would like to understand which programs or technology tools are most effective for students, but there is no formal process or guiding rubric for adopting or evaluating new programs. They commented about the lack of discussion or planning about how technology can be integrated into instruction and how to measure its effectiveness. Some staff stated that they need to know what students should be able to do at each grade level before they can understand what hardware is needed. The personalized learning and blended learning initiatives were mentioned during FCMAT interviews, but there was no clear connection between these and a district technology master plan. Staff interviews indicated an awareness that the district and technology director have a vision for technology, but several staff indicated they were not aware of a plan.

Effective district and school technology plans align equipment standards, refresh cycles, funding sources and resource allocations to the district vision and instructional goals for students. The absence of a current technology plan in this district has contributed to uncertainty and lack of confidence among some staff about the decisions affecting technology at their schools. Board Policy/Administrative Regulation 0440 addresses the plan development process and describes the planning team "which may include, but is not limited to, the Superintendent, district curriculum and technology administrators, site administrators, teachers, library media teachers, classified staff, parents/guardians, students, community members, including members of the business community." The process of developing a technology plan would lead to agreement about distribution of district resources and ensure equity for all students and staff.

Digital assessment tools in use are iReady and iMap. District schools that have chosen to implement the personalized learning program are using Summit Learning, and Special Education recently purchased the Unique Learning System, an online, standards-based set of interactive tools specifically designed for students with special needs to access the general curriculum.

Illuminate Education is used to build and administer formative assessments, analyze data from multiple sources, and display data reports. Some staff commented that this system isn't widely used, that teachers are unsure about how to generate reports and analyze results, and that training during project launch was not adequate. The district employed a data specialist in 2015-16 to provide data reports to teachers and administrators, but that individual no longer works full-time. The technology TOSAs now fulfill this role.

District teachers use a variety of grade books. A district committee, convened specifically to look at Aeries, School Loop and Infinite Campus functionality, selected Aeries grade book for districtwide adoption beginning in 2017-18. An Aeries grade book training was conducted after the selection, but some staff indicated that the training wasn't adequate to ensure a smooth transition from other grade books by the beginning of the 2017-18 school year.

The committee also recommended to adopt the Aeries messaging and outreach communication tools, and to discontinue the use of School Loop, which is now utilized for most school websites. The district will instead migrate to Google or Weebly for school websites. Some staff indicated they were surprised by these decisions and stated their only notification was by an email from the district. They are concerned about the time and effort that will be required to implement the new features of Aeries and build new websites before the next school year.

Staff technology training in the district occurs in several ways. New certificated staff receive orientation training about district systems from the technology TOSAs, and the managers of departments such as Child Nutrition and Special Education offer training for their specific systems. TOSAs offer training for teachers on request and also schedule group trainings when new systems are adopted. The Milpitas Innovators Exchange (MIX) was organized by the TOSAs as a forum for certificated technology users and to develop training, and their monthly meetings are open to all.

Staff indicated that the Illuminate system is used infrequently. The Illuminate roadmap was presented to principals, and the vendor representatives worked with district administration and TOSAs when the system was first adopted to develop the timeline and competencies. Some staff commented that insufficient follow-up communication and training about this system has contributed to its infrequent use.

Several staff indicated they would like more ongoing training to enhance their skills in certain areas and with districtwide systems like Aeries and Illuminate. Although all staff interviewed by the FCMAT team are aware of the technology TOSAs, several indicated the TOSAs can't cover all the training needs, especially with the many new initiatives. Many staff felt that the TOSAs are not readily available, MIX is poorly attended, and district staff trainers sometimes lack experience and expertise in newly acquired systems to do a thorough training for staff. Some staff also indicated that the district lacks a sufficient number of training labs for adequate staff professional development.

Staff across the district mentioned a need for more professional development. Classroom technology is sufficient at some sites, but effective use of the online resources and applications for student learning requires more sustained professional development. The TOSAs are responsive to requests for training, but they may not be available or knowledgeable to cover the broad scope of applications and skill levels throughout the district. Some staff indicated they're uncertain about what the TOSAs do and when they're available.

Many districts conduct regular surveys or other needs assessments to determine staff skill levels and subject areas for training. This enables a targeted approach to professional development, and makes efficient use of internal staff resources. District staff then can develop and communicate a program of pertinent topics. This also allows the district to foresee and allocate budget for outside experts as needed. Feedback gathered from sessions contributes to a responsive, flexible program of staff development that accommodates new district initiatives and the needs of staff. These may include a combination of internal staff and outside experts, coaching and training classes, online resources, conferences and classes.

# Recommendations

*The district should:*

1. Establish a process and procedure for selecting technology programs and devices and for evaluating effectiveness.

2. Establish a district technology committee.

3. Develop a new district technology plan tied to goals and outcomes for students, describing hardware, software and systems, and professional development, and that includes the components described in AR 0440, District Technology Plan.

4. Evaluate the possibility of furnishing additional training labs for staff professional development.

5. Schedule additional training and support for Aeries grade book adoption and school website development.

6. Evaluate contracting with outside expert trainers to offer start-up and ongoing training when launching new systems.

7. Conduct a survey of teacher technology skills and training needs.

8. Develop and publish a comprehensive professional development schedule based on the results of the teacher survey.

# Infrastructure

The district's wide area network (WAN) connects locations throughout the district via service from Comcast and consists of 1 Gbps fiber connection to all elementary and middle schools, and a 10 Gbps fiber connection to the high school. There is a secure 1Gbps connection to the Santa Clara County Office of Education for administration and students, and another 1 Gbps connection to the county office for the non-secure guest network.

All classrooms have wireless and wired network access. The wired network was built in 2005 with Cisco switches, and the wireless network was installed in 2012 with Meraki Power over Ethernet switches and Meraki wireless access points in almost every classroom. The district uses the county office Palo Alto Networks firewall, Securly, for web content filtering and network monitoring tools such as Solar Winds. Some network switches and routers are nearing or exceed 10 years old. Voice over IP (VoIP) services are hosted through Jive Networks, and the district uses Polycom phones.

The governing board recently approved a $2.5 million infrastructure upgrade proposal to replace all switches with Meraki equipment, funded by a combination of district funds and E-Rate discounts. The infrastructure replacement proposal was created by the technology services director in collaboration with the network systems manager.

Some users report wireless connections are not always reliable, and some report that their connection drops approximately once a week. There are also reports of some areas of poor connectivity in classrooms and other areas on school campuses. Some staff indicated that loss of connectivity has interrupted testing

in the classrooms. Schools are required to purchase their own wireless access points, and staff indicated this is an increasing burden for the school budgets as they are also funding Chromebooks for students.

Most districts assume financial responsibility for all wired and wireless infrastructure equipment to ensure consistent coverage and replacement schedules. Because wireless access points age at a faster pace than switches due to rapidly changing wireless protocols, there should be a plan to replace them on a shorter cycle than network switches.

The district does not have an annual replacement cycle for a portion of the network infrastructure. Many districts have instituted an annual refresh cycle for a portion of network equipment rather than relying on one-time funding or bond initiatives. The acknowledgement of ongoing maintenance and upgrade costs, and their inclusion in the annual general fund budget is increasingly important as high capacity networks have become essential for every aspect of school district operations. This would provide the technology department with a reliable, steady funding source to plan and respond to changes in technology and the needs of the schools.

## Recommendations

*The district should:*

1. Provide wireless access points to schools whenever needed to address increases in demand and coverage on school campuses.

2. Assume financial responsibility for all wireless access points.

3. Adopt an annual cycle of equipment replacement.

## Help Desk

The district uses the Zendesk online help desk system for technical support requests. All district staff can submit support requests through Zendesk, and they may also contact the help desk by phone or by email. Technical support calls are answered by any computer technician or the data technology services secretary, and are either solved immediately over the phone and/or entered into the help desk system and then assigned to the appropriate technical support employee. All calls are logged into the help desk system to maintain a record of the issues. A computer software support analyst answers a separate help desk phone number for Aeries support and assistance. Computer technicians check the help desk system every morning and throughout the day, but they also receive many incidental requests when they are on site. They address these as soon as possible and ask users to submit a help desk ticket to account for the support request.

Help desk requests are solved remotely whenever possible, and computer technicians spend 40%-50% of their time addressing issues via remote access from their desk in the technology department. Although this is efficient, they may not be sufficiently present on-site to attend to the minor requests and basic support tasks such as ensuring the Chromebook carts are equipped and the Chromebooks are properly functioning.

The technology department staff post a daily total of all tickets, sorted by site and by status, either open, on hold, or solved. At the time of the FCMAT visit, the total number of open tickets districtwide was 48. Interviews with staff at school sites indicated a discrepancy between number of open, unresolved help tickets reflected in the help desk system and posted in the technology department office, and the actual

number of outstanding issues at the sites. Staff interviews indicated that tickets are sometimes closed in the system before an issue is completely resolved, and rather than reopening the ticket, the user is prompted to submit a new ticket, thereby masking the number of unresolved issues.

Day to day support for users and devices often is provided by teacher technology leads. As described in more detail in the Organization and Staffing section, these individuals are non-IT staff and may either be teachers or administrators. During high-demand periods such as the beginning of the school year and testing, the teacher technology leads may spend significant time outside of their regular job duties to troubleshoot technology problems and handle technology support without contacting the technology department or submitting a request. Because of this, the help desk system alone does not provide a complete picture of the district's technology support requirements.

Most districts utilize an online help desk system and find it to be a valuable measure of efficiency and support needs when the data it generates are accurate. Districts with 1:1 deployments and extensive technology programs adjust their process of closing tickets and/or add metrics to acknowledge the unreported or underreported issues that occur in the schools, thus providing the department and the district with data to evaluate and plan technology support needs more realistically. Districts with numerous devices often institute processes for regular interaction between site technology leads and district technology staff. These regularly scheduled meetings, online or in person, enable collaboration, problem-solving and improved communication between schools and district staff and help build confidence that the district staff is supporting school needs.

## Recommendations

*The district should:*

1. Evaluate and improve methods for recording and closing help desk tickets to ensure a more accurate measure of technology support needs at the schools.

2. Establish a regular routine of meetings between teacher technology leads and district technology department staff to determine the full extent of the technology support issues and adjust practices as necessary.

## Hardware Installation and Setup

Since the 2010 district launch of the student Chromebook program for high school students, approximately 2,500-3,000 devices have been purchased each year to reach a current staff and student total of approximately 12,000 devices districtwide. These include Chromebooks, PC desktops and laptops, Apple laptops, Apple iOS and Android tablets.

The director of technology services selects vendors and equipment in collaboration with technology department staff, and all equipment is purchased through the central office once funding is determined. Devices are received at the district office, configured by technology department staff and then delivered to the schools.

The technology department secretary often checks in and configures Chromebooks. These are received and stored in a space adjacent to the technology department office. Technology department staff indicated that the size and layout of space in this building is inadequate for the types and quantities of equip-

ment that are handled by staff before delivery to the schools or for storage. Most districts are increasing warehouse and staging capacity to handle the increase in mobile devices.

The mobile device management systems, Meraki for iOS and Chrome Management Console, are managed centrally by the technology department. Once the devices are delivered to the schools they are stored on secure carts in departments or classrooms and distributed to students during class. Some staff stated that devices are not tracked at the schools. Staff indicated there are over 12,000 student devices, but a technology inventory provided to the FCMAT team lists 5,134 items including network devices, computers, laptops, storage carts and printers. The QCC Fixed Asset system only tracks devices over $500, and Chromebooks and many other devices are below this cost. The technology services department staff can track devices, assign users, and remotely configure the devices, but no other inventory system is in place at the schools. Many districts with large inventories of mobile devices have implemented an inventory tracking system for devices valued less than $500. With an anticipated increase in the quantity of low-cost mobile devices for students and staff, most districts with 1:1 programs utilize an inventory system to track these assets. These allow site staff to efficiently manage their own inventories and provide accurate reports to donors and the district.

Board Policy 3400, Management of District Assets/Accounts, states,

> "*The Governing Board recognizes its fiduciary responsibility to effectively manage and safeguard the district's assets and resources in order to help achieve the district's goals for student learning,*" and as stated in the administrative regulation, "*in order to provide for the proper tracking and control of district property, the Superintendent or designee shall maintain an inventory of equipment.*'

While this specifies responsibilities for tracking capital assets of over $5,000 and BP 1154, Inventories, prescribes inventory tracking for equipment valued over $500, the significant investment in assets less than $500 represents an increasingly sizeable district asset. Some districts are amending board policies and administrative regulations to include responsibilities for the large number of devices valued at less than $500.

In district classrooms, interactive whiteboards and classroom LCD projectors are being replaced with Chromeboxes and large monitors as the older systems become nonfunctional. District staff interviews indicated there is disagreement between technology and maintenance about responsibility for installation of these systems. Outside contractors are often used as a result.

Most districts have been faced with a shift in traditional maintenance and operations job duties as audiovisual classroom equipment has increasingly included technology components and connections to the district networks. As these projects require expertise from several areas, some districts have established collaborative teams comprised of maintenance, facilities, and technology department staff to update their workflows and installation process. Some districts have added or adjusted job descriptions to include the skill sets required for technology-equipped classrooms, including moving and installing projector and audio hardware and interactive white boards, changing or adding electrical wiring and data, and connecting and testing projectors, cameras and sound systems. As classroom instruction becomes more innovative with the use of multimedia, the responsibilities and demands for district support will increase. Cooperation between departments is essential.

# Recommendations

*The district should:*

1.  Evaluate receiving and warehouse storage and work areas to create efficiencies and accommodate an increase in equipment purchasing.

2.  Evaluate an inventory management system to track the distribution of electronic devices and other equipment valued under $500 and not accounted for in the QCC system.

3.  Update board policies and administrative regulations to include inventories and asset tracking for mobile devices under $500.

4.  Develop agreements and adjust job descriptions to define responsibilities for classroom audiovisual equipment installations and maintenance, and improve communication between departments.
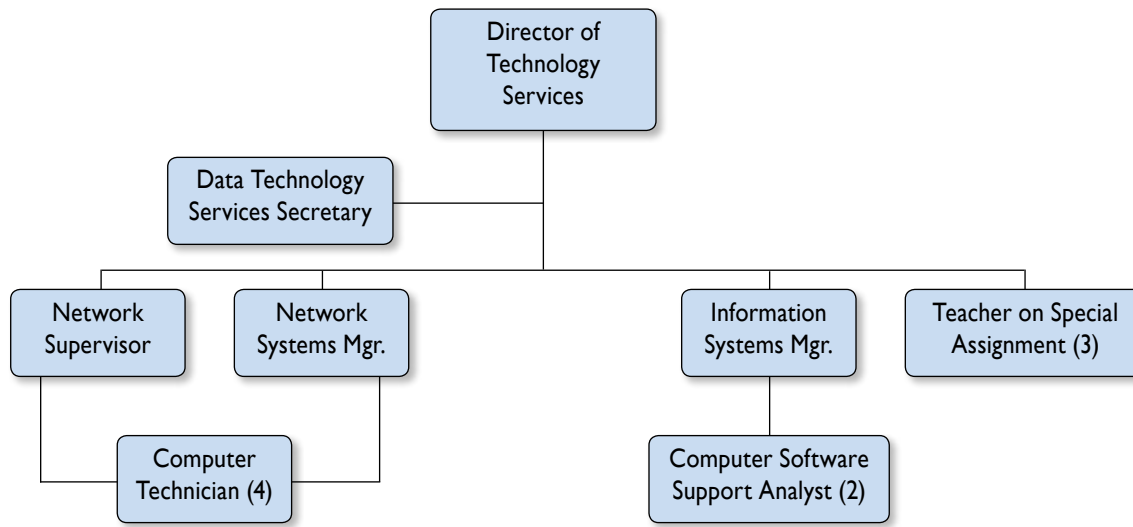
# Organization and Staffing

Information provided by the district's Human Relations Department indicates that the district's technology department is led by the director of technology services, who reports to the superintendent. The director of technology services leads a staff consisting of three management employees (network manager, network supervisor, information systems manager) and seven classified employees (data technology services secretary, computer technicians (4), computer-software support analysts (2)). Additional support comes from three TOSAs who work closely with the technology services department, focus on educational technology and report to the assistant superintendent of educational services.

At the time of FCMAT's visit to the district, the computer technicians and computer-software support analysts were having their jobs reviewed by the reclassification committee. Because of this, FCMAT did not review job descriptions of those positions.

Based on job descriptions, the titles and reporting structure of the department is indicated in the organization chart below.
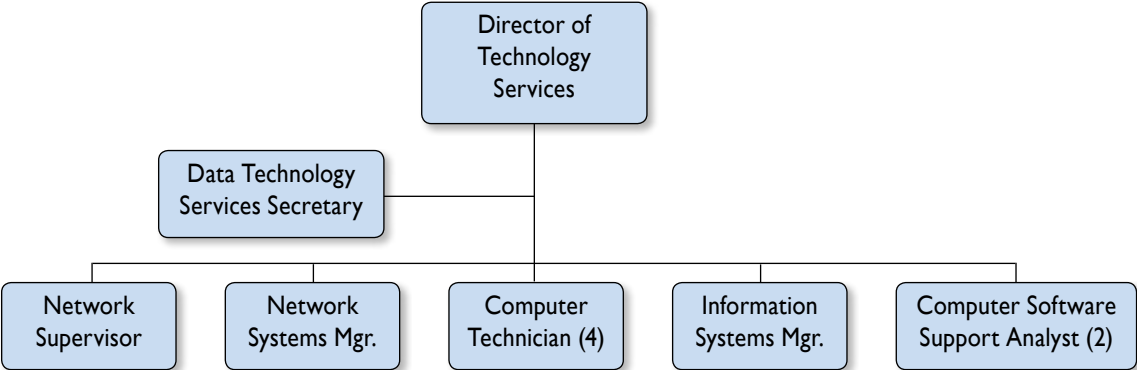
Unofficially and in daily practice the reporting structure is indicated here.

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                          ┌──────────────┐
                          │ Director of  │
                          │ Technology   │
                          │ Services     │
                          └──────┬───────┘
        ┌──────────────┐         │
        │ Data Technology│───────┤
        │ Services Secretary│     │
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│Network│ │Network   │         │Information│ │Teacher on   │
│Supervisor│Systems Mgr.│       │Systems Mgr.│Special      │
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   │          │                     │      └─────────────┘
   │   ┌──────┴────┐          ┌─────┴──────────┐
   └───│ Computer  │          │ Computer Software│
       │Technician (4)│        │Support Analyst (2)│
       └───────────┘          └────────────────┘
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**Director of Technology Services**

The director provides district technology leadership and planning, including infrastructure, hardware, software and systems, budget management, equipment purchasing, technical support and data systems staff supervision and oversight. The director regularly interacts with hardware and software vendors to design and procure equipment and applications that meet the needs of students and staff. This job description also includes close collaboration with business services, education services, human resources, and maintenance and operations to support instructional practices. The director reports to the superintendent and consults with cabinet.

Some staff reported a lack of communication from the technology director about the overall vision and strategic direction for technology use in the district beyond the goal of achieving a 1:1 student-to-device ratio. Staff at the schools and the district indicated their confidence that the technology director had a vision and a plan, but were not themselves able to articulate those or how they would apply to their site or department.

A well-articulated vision of technology integration into instruction and operations is essential to the optimal use of technology. A key role of the technology director is to communicate a unified vision for technology throughout the organization. Regular participation in site-level meetings with all district stakeholders, ongoing dialogue with site instructional leaders and administration, and attendance at cabinet and administrative meetings are essential roles of a technology leader. District and site staff can then integrate technology goals into their own department plans and practices.

**Network Supervisor**

The network supervisor is responsible for active directory, Meraki wireless, mobile device management, IP phones and firewall upgrades, and also supervises the computer technicians. The network supervisor works closely with the network systems manager. Operation of the network is distributed equally, and they jointly supervise computer technicians.

**Network Systems Manager**

The network systems manager's duties include network configurations, maintaining and upgrading servers, server virtualization, network monitoring, storage area networks, and operating system updates. This individual works with the technology director on network design and infrastructure planning, and also works with the network supervisor on the operation of the network and to jointly supervise computer technicians.

**Computer Technicians**

The four computer technicians are based at the district technology department and report to the network supervisor and the network systems manager. They work approximately half-time at their desk to check work order requests and perform remote repairs and maintenance, and half-time at their assigned school sites responding to work orders. They are assigned to their schools by region, although they sometimes support other schools in addition to their own, and they are responsible for all technology at each of their sites.

During FCMAT interviews, most site-based staff indicated the need for more on-site presence of the computer technicians. With the quantities of aging equipment and upcoming new initiatives, staff interviews indicated an increasing need for skilled support technicians on campus throughout the school day, all year.

Many technology-rich districts have classified technology support staff placed at the school sites. These positions provide basic troubleshooting and diagnostics, repairs and user support, and escalate issues as needed to other technology support staff. This allows certificated staff at the sites to focus on teaching students and administrative duties, and provides the immediate basic support that is becoming more frequently needed throughout the school day.

Due to the different quantities and types of technology used, higher grades usually require more technology and technical support. In many cases technology support equal to 0.5 FTE can meet the needs of an elementary school. This often increases to 0.75 FTE for middle schools and K-8 schools, and rises to 1.0 FTE for high schools. The district's continuation school could be served by a 0.5 FTE computer technician.

The following table gives the number of full-time equivalent computer technician positions needed by type of school with this formula.

| School quantity and type | FTE needed per school | Subtotal FTE needed | Type of position |
|---|---|---|---|
| 9 elementary | .5 | 4.5 | Computer technician |
| 2 middle | .75 | 1.5 | Computer technician |
| 1 high school | 1.0 | 1.0 | Computer technician |
| 1 continuation high school | .5 | .5 | Computer technician |
| Total technology support specialist 1 FTE needed | | 7.5 | |

The district already has four computer technicians, and would need to add 3.5 computer technician positions to provide staffing as outlined above. It is best practice to add positions in phases and then analyze and evaluate the need for additional support at the school sites for a time before making further changes.

Adding computer technician positions would address the need for immediate support at the schools and provide frequent opportunities to align the work of the technology services department staff with the schools' needs and interests. One way to accomplish this is to establish a routine of technology services

department meetings that would include the site-based computer support technicians. Establishing a practice of regular collaboration and communication between site and district technology services department staff can ensure continuous communications between the schools and the district and continuity of service when staff are absent.

**Information Systems Manager**

The information systems manager is responsible for the operation of the student information system, state and federal reporting, data extracts and analyses, and other district educational and operational database systems. This position also processes public records and research requests related to technology.

**Computer Software Support Analysts**

Two computer software support analysts report to the information systems manager and serve as backup for that position. These individuals are responsible for managing the student information system, operating the help desk, providing user support, system maintenance and backup, data collections and extracts for state and federal reporting including CALPADS and CRDC, and information systems training for district users. They gather data as needed by the information systems manager, and provide reports at the request of district administrators and teachers.

Data analyses and custom reports about student assessments and performance requested by administrators and teachers were fulfilled by an outside data expert contracted by the district full-time during the 2015-16 school year and part-time during 2016-17. While the value of the reports for teachers and administrators has become clear during this time, the individual is no longer easily available and the number and complexity of requests by district users for data analytics and reports have continued to increase. Some staff commented that they missed the data analysis reports that were provided by the contracted specialist

Many districts focus on using data for instructional and operational decision-making and have in-house or outside experts to perform these tasks and to build capacity for data use by training educators and staff. Some student information and online instructional systems have also developed dashboards and data reporting features to provide real-time, on-demand feedback to teachers.

**Data Technology Services Secretary**

The data technology services secretary handles incoming calls, the electronic document project, technology purchase requisitions from the schools, fixed asset tagging for incoming equipment, phone line repair calls, vendor contacts, printers, E-Rate, and Chromebook and iOS account management for new equipment. Approximately half of this employee's time is spent performing duties not cited in the job description, such as receiving and configuring new equipment and working with the mobile management consoles. Although it's fairly common to perform some duties not specified, job descriptions should accurately reflect the scope of work required for a position.

**Teachers on Special Assignment**

Three educational technology TOSAs are assigned to the district office. These individuals provide training and support for teachers with assessment development and data reports, data analysis, state testing, personalized learning systems and strategies, digital citizenship, productivity and instructional software, and technology integration into instruction. They offer professional development sessions at the request of the schools, and conduct training on newly adopted systems. Some staff indicated the inability of the few district TOSAs to fulfill the many professional development needs at the schools. Comments included a lack of staff awareness of the offerings provided, difficulty in scheduling, and lack of expertise in some applications.

**Teacher Technology Leads (Non-IT Staff)**

There are teacher technology leads at each school who are paid by stipend and report to the principal. In some cases, school administrative staff fill the role of technology lead. The site-based technology leads are responsible for basic technical support and assistance at their schools, and they serve as the schools' primary point of contact for the district technology staff.

Staff reported that because the technology leads have teaching or administrative duties in addition to technology support responsibilities, teachers and other staff may experience slow responses to their requests for assistance and support. During peak times at the beginning of the school year and testing, the demands for assistance to prepare classroom technology far exceed the time the technology leads are available to help.

Most districts have discontinued the practice of relying on certificated teachers or administrators as technology leads and have instead hired full or part-time classified technology support assistants who are based at the schools. In school districts with numerous technology devices there is an increasing demand for immediate technical support by on-site technical support staff. These "level one" technicians can perform diagnostics, assess user problems and escalate issues to the technology department as needed.

**Working Environment**

The technology department office was recently remodeled in an open office configuration with an attached conference room and storage area. The open design allows the director to interact frequently with staff and facilitates communication among all staff in the department. Some staff commented that, depending on the tasks they're performing and nature of their work, the noise and activity can be a distraction. Highly collaborative districts are designing open, flexible office spaces and classrooms while providing ample private spaces for one-to-one meetings and quieter areas for certain types of work.

## Recommendations

*The district should:*

1. Create more opportunities for all stakeholders to interact with the technology director and participate in technology planning and discussions.

2. Evaluate the need to add up to 3.5 new computer technician positions.

3. Provide more professional development opportunities for teachers by improving the method of delivery or by increasing the number of technology TOSAs.

4. Conduct a needs assessment to determine how to fulfill site staff requests for data reports and analyses.

5. Update the data technology services secretary job description to reflect changes in actual duties.

6. Configure the technology department office space to allow for privacy and quiet working spaces as needed.