# Monterey County Office of Education

# Technology Plan

# July 1, 2014 to June 30, 2017

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# I. Context

The Monterey County Office of Education (MCOE) is one of 58 county offices located throughout the state of California. The full-time and part-time staff of 720 works year round providing services which complement and supplement those offered by 24 public school districts in the County of Monterey. Over 70,000 students in grades from preschool through post-secondary are served by 130 public schools in Monterey County.

Programs operated by MCOE provide full and part-time education to students in specialized programs that are more cost-effective to operate on a regional basis. Programs include:

- Special Education classes for infants, children, and young adults with moderate to severe intellectual, physical, social, emotional and communication disabilities as well as other special education programs for students with low incidence disabilities such as for the deaf, hard of hearing, blind and visually impaired.

- The Head Start Program provides a comprehensive child development program to preschool children from families below poverty level, to prepare them intellectually, socially, emotionally, and physically for school and life

- The Alternative Education Programs Department serves "high risk" students who have been removed from area schools or who have unique educational needs

- The Migrant Education Program (MEP) provides education and support services to children and young adults (ages 3-21) who move due to their parents' or their own search for agricultural work, and as a result interrupt their education

- Monterey County Home Charter School programs work in partnership with parents, families, school districts, community agencies, and the business community to provide a quality educational experience for all students who choose to attend.

**Plan Development**

All of these programs sent representatives of administrators, teachers, and parents to serve on the MCOE Technology Support Committee in order to provide guidance and feedback during the creation of the 2014-17 MCOE Technology Plan. The Support Committee met monthly in the year before submission to develop the

technology plan and review previous additions to ensure consistency and accuracy. In addition to MCOE stakeholders, the technology plan was also informed by consultations from district IT representatives from Monterey County. These stakeholders met every other month in order to provide feedback regarding the development of the technology plan that had been generated by the MCOE Technology Support Committee.

# II. Goals and Strategies

## Mission

To provide for the innovative, dependable, and efficient use of information technology to enable Monterey County students, faculty and staff to effectively meet their goals and expand their capabilities as a learning community.

## Goals and Strategies

### Goal 1: Technology will be integrated into the curriculum to improve student learning.

- Provide professional development to faculty in the areas of Common Core and SBAC Testing.
- Teachers will compare and collect common assessment data and use that analysis to inform curricular planning.
- Staff and students will utilize technology in expanding online and distance learning.
- Students will use technology to collaborate with one another and digitally publish work to the school community.
- Staff and students will acquire, through professional development and direct instruction, the necessary technology and communication skills to utilize technology for learning, research, and assessment.

### Goal 2: Students, staff, and faculty will have access to the requisite technology to enhance learning outcomes.

- Students, faculty, and staff will have access to high speed Internet with adequate bandwidth.
- To ensure continued operation, students, faculty, and staff will have access to technology support provided over the phone, by e-mail, and in person as needed.
- Students, staff, and faculty will be able to acquire the necessary technology devices that best fit their instructional needs.

**Goal 3: Students and staff will exercise best cyber safety practices and ethical technology use.**

- Students, staff, and faculty will receive online, blended, or in-person instruction on how to stay safe when using Internet services and how to use technology in an ethical manner.
- School administrators will monitor the employee and student utilization of Internet related services to ensure that use is safe, secure, and ethical.
- Students, faculty, and staff Internet access will be filtered in such a manner that it is safe for daily use and compliant with all CIPA requirements.

**Goal 4: Students, faculty, and staff will have equitable access to high speed Internet, digital curriculum, and mobile devices.**

- MCOE will work to provide high speed Internet access to places that are cost prohibitive to install using current vendors and conventional practice.
- MCOE will strive to provide mobile high speed Internet access for its staff and students in places that are not owned by MCOE or partner organizations.
- MCOE will provide a safe, secure, and high-speed access to Internet related services and curriculum when using staff and students' personally owned devices.
- All students, teachers, and staff will have the necessary access to technology devices that best fit their learning and operational needs.

**Goal 5: MCOE will use technology to improve the collection, storage, and analysis of student assessment data to inform curricular decisions.**

- MCOE departments will access and use an MCOE centralized, managed database for student records that is integrated with the various individual systems used by departments.
- MCOE will work with its staff and students to develop custom data collection methods to improve efficiency and accuracy, especially in areas without Internet connectivity.
- Staff and administrators will have the ability and knowledge to effectively analyze student assessment data in order to inform curricular and organizational decisions.
- MCOE staff will explore available options for student data assessment systems and/or personnel to help facilitate the analysis of student assessment and demographic data.

**Goal 6: MCOE will use technology to improve communication between staff, home, and community.**

- MCOE will provide and maintain a website that will contain updated information regarding the services and programs available to teachers, staff, and students.
- MCOE TIS will provide staff and teachers with Voice-Over-IP telephones as well as electronic e-mail to facilitate internal and external communication.
- MCOE will provide updates, newsletters, and other communications using relevant social media sites.

## Benchmarks and Implementation

### Using Technology to Improve Student Learning

Objective and Benchmark (1 of 3): Students will improve Smarter Balanced test scores through online practice and digital curriculum. Students will improve their 2015 scores by 10% in 2016 and 15% in 2017.

Implementation and Monitoring: The site directors will be charged with providing professional development opportunities for teachers on the task of integrating technology into Common Core instruction and for providing Smarter Balanced practice opportunities. Teachers will be responsible for enacting this professional development in the classroom. The Educational Technology Coordinator will provide guidance and coaching for teachers/directors and will compileSmarter Balanced results to submit to the Technology Support Committee to monitor benchmark progress.

Relevant Curricular Goal: Provide professional development to faculty in the areas of Common Core and SBAC Testing.

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Objective and Benchmark (2 of 3): Students will be able to access lessons and learning resources out of the classroom. By 2015, 5% of teachers' lessons will be available online in video or audio format. By 2016, 15% of teachers' lessons will be available online in video or audio format and supplemented by digital readings or worksheets. By 2017, 25% of teachers' lessons will be available online in video or audio format with supplemental readings and worksheets for expanded learning.

Implementation and Monitoring: Site directors will provide professional development to teachers on the creation of audio and video lessons. They will also provide the requisite cameras and/or microphones and software to create digital lessons and post them to an Internet forum. MCOE-TIS will provide a hosted server for easily positing and sharing lessons. The Educational Technology Coordinator will collect the amount of lessons published online and will submit them to the Technology Support Committee to review and monitor.

Relevant Curricular Goal: Staff and students will utilize technology in expanding online and distance learning.

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Objective and Benchmark (3 of 3): Students will have daily access to a technology device on a daily basis. Benchmark: By 2015, all students will have access to a technology device (Chromebook, iPad, Laptop, etc.) at a 4:1 student to device ratio. By 2016, the ratio will be 2:1. By 2017, the ratio will be 1:1.

Implementation and Monitoring: Site directors will be in charge of gathering input and purchasing the appropriate technology device for their teachers and support staff. At the end of each year the Educational Technology Coordinator will collect data and submit to the Technology Support Committee to review.

Relevant Curricular Goal: Students, staff, and faculty will be able to acquire the necessary technology devices that best fit their instructional needs.

**Providing Technology and Information Literacy Skills for Students**

Objective and Benchmark (1 of 2): Students will be trained on using the Internet in a safe and secure manner. By 2015, 100% of all teachers will be prepared by the Educational Technology Department or applicable vendor on the safe usage of the Internet and will provide this instruction to their students. By 2016, 100% of all students will undergo a video refresher course made by their teachers on the topics presented in the previous year. By 2017, 100% of all students will give and receive peer presentations on the usage of safe Internet practices.

Implementation and Monitoring: Site directors will consult the Educational Technology Department to bring in the relevant training for teachers as early as possible in the school year for each year of the technology plan. Teachers will be responsible for the oversight and implementation of the professional development they receive regarding best safe Internet practices, making of educational videos, and having students research and present on cyber citizenship. Site directors will monitor the progress of these inititatives and will send their progress reports to the Educational Technology Coordinator in order to send to the Technology Support Committee.

Relevant Curricular Goal: Students, staff, and faculty will receive online, blended, or in-person instruction on how to stay safe when using Internet services and how to use technology in an ethical manner.

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Objective and Benchmark (2 of 2): Students will acquire the requisite skills and knowledge to share documents when one another digitally and publish them for the community to access. By 2015, 100% of teachers will be taught on how to share documents with other teachers and will use this system to share lessons, homework,

and other resources with students. By 2016, 100% of students will implement and be instructed on how to share documents with peers in a controlled digital environment. By 2017, 100% of students will be implement and be instructed on sharing documents produced in a classroom environment with the community including parents, other teachers, and administrators.

Implementation and Monitoring: Site directors will be in charge of consulting the Educational Technology Department for instruction to teachers on how to share and publish documents digitally in a safe and secure environment. The teachers will be given time to learn these tasks in professional development sessions throughout the year. At the end of each year, site directors will report to the Educational Technology Department on the progress of the professional development as well as the success of implementation in the classroom. The Educational Technology Coordinator will compile these reports to present to the Technology Support Committee.

Relevant Curricular Goal: Students will use technology to collaborate with one another and digitally publish work to the school community

**Using Technology to Improve Student Assessment and Record Keeping**

Benchmark and Objective (1 of 2): Teachers will be able to collect and compare common assessment data between themselves in order to improve instruction. By 2015, all teachers will develop at least 4 common assessments for each common content area. By 2016, all teachers will have implemented at least 4 common assessments for each common content area and will have content level meetings at least 4 times a year in order to compare and analyze data. By 2016, all school sites will input common assessment data into a student information system that will allow teachers to see past common assessment results for each student.

Implementation and Monitoring: Site directors will be in charge of providing at least 20 hours of release time to teachers each year in order to develop common assessments and to compare common assessment data collected. Teachers will be in charge of developing the common assessments for each content area, implementing them, and comparing student data across different classes. MCOE-TIS will be responsible for developing or acquiring an appropriate student information system that will allow school site staff to input common assessment data and have teachers access said information. School staff (as designated by the site director) will be charged with inputting data collected by teachers. The site directors will monitor the progress of these initiatives and will report to the Educational Technology Coordinator who will compile all results to present to the Technology Support Committee.

Relevant Goal: Teachers will compare and collect common assessment data and use that analysis to inform curricular planning.

Benchmark and Objective (2 of 2): Itinerant staff will have access to improved data collection methods without the need for Internet connectivity. By 2015, the Educational Technology Department will conduct an audit of all programs with itinerant staff that collect data and identify/prioritize program improvement needs. By 2016, the software development team will implement a customized data collection and analysis system for at least 2 itinerant programs. By 2017, the development team will implement custom systems for at least 4 programs.

Implementation and Monitoring: The Educational Technology department will oversee the audit and prioritization of the itinerant programs, reporting back to the Technology Support Committee when the audit is complete. After the audit is complete, the software development team will work with the itinerant programs to develop a custom data collection system. The Educational Technology department will act as a bridge or liaison as needed by the software development team. The software development team will report on yearly progress to the Technology Support Committee for oversight.

MCOE will work with its staff and students to develop custom data collection methods to improve efficiency and accuracy, especially in areas without Internet connectivity.

# III. Professional Development Strategy

### Current Skills

A Technology Comfort Survey was distributed to MCOE employees in February 2014 in order to gauge employee proficiencies with technology. The survey identified the following skills with programs:

| Program | % Basic | % Intermediate | % Highly Skilled |
|---|---|---|---|
| Word | 88 | 76 | 67 |
| Excel | 56 | 43 | 13 |
| PowerPoint | 87 | 74 | 58 |
| Outlook | 93 | 82 | 75 |
| Acrobat | 32 | 15 | 3 |
| Chrome/Safari | 97 | 86 | 78 |

In addition, most all teachers expressed concern regarding the integration of technology into the new Common Core State Standards as well as preparing students for the upcoming Smarter Balanced assessments. Cyber security, data collection/analysis, blended learning, shared educational medial, and communication methods also appeared in their curricular concerns.

Overall, staff expressed general confidence in their ability to use technology to perform their current work functions, though many commented that they feel there are more efficient ways to perform tasks and would like additional training in order to maximize their time. Most staff prefers small group training rather than whole group sessions.

**Current Technology Use**

Special Education

| Area | User | Current Access | Current Use |
|---|---|---|---|
| Special Education | Students | Each classroom has one to three computers; most computers have their own printer, or access to a network printer<br>All classrooms are wired and wireless with Internet access | • Technology skills<br>• Developing skills using specialized software solutions<br>• Productivity Suite software |
| Frequency of Use by Students | Students | All students have access to classroom and/or lab computers during the school day<br>Some host sites provide access to district computer labs | Hours:<br>School day hours |
| Special Education | Teachers | Each classroom has one to three computers; most computers have their own printer, or access to a network printer<br>All classrooms are wireless and wired with Internet access | • Customized, specialized software E-mail IEP's<br>• Productivity Suite Software<br>• Material preparation and lesson plan creation |
| Frequency of Use by Teachers | Teachers | Teachers have access to the classroom computers before, during, and after school hours. | Hours:<br>School day hours, plus |

Head Start

| **Student Uses of Technology** | | |
|---|---|---|
| Technology Being Used (software titles and type of equipment e.g. science probes, calculators) | How is it used? | Grade Level(s) or Subjects it is used in |
| • Kid Desk<br>• Millie's Math House<br>• Bailey's Book House<br>• Sammy's Science House<br>• Thinkin' Things<br>• Jump Start<br>• The Tortoise and the Hare | To help children learn letters, colors, other basic information. | Preschool |

| **Teacher Uses of Technology** | |
|---|---|
| Technology Being Used For Personal Productivity (e.g. Grade book, Classroom Management, Web Authoring) | How is it used? |
| Microsoft Word, Microsoft Excel | Used to create documents, letters, and other classroom materials. Also used to track student assessment data over time and for formatting data for state and federal reporting. |
| Apple iPads | Used to create portfolios of student work, take notes for formative assessments, and record presentations to share with other teachers and students. |

Alternative Education

| | **User** | **Current Access** | **Current Use** |
|---|---|---|---|
| Alternative Education | Students | All classrooms are hard-wired with Internet access. All sites also have wireless Internet access.<br>Each classroom has a minimum of eight computers for student use and also a laptop lab to complete a classroom set. | -Technology skills Using Word to create documents<br>-Using calculators to learning numeric skills Using Spreadsheets to develop math and Algebra skills<br>-Using Chrome, Firefox, or Safari to access the Internet and for Internet research<br>-Using Word and |

| | | | |
|---|---|---|---|
| | | | Publisher to develop newsletters<br>-Using computers to access online curriculum: Cyber High, Odysseyware |
| Frequency of Use by Students | Students | All students have access to classroom and/or laptop lab computers during the school day | Hours:<br>School day hours |
| Alternative Education | Teachers | Each teacher has a Macbook or PC laptop. Each classroom has a computer for teacher and staff use. | -Using Mac Mail, Outlook, and OWA for E-mail<br>-Using Word and Excel to Develop Instructional Materials<br>-Using PowerPoint or Keynote for Presentations<br>-Maintaining student records through PowerSchool |
| Frequency of Use by Teachers | Teachers | Teachers have access to the classroom computers before, during, and after school hours. Nearly every teacher has a Mac or PC laptop to use at home and at school for school purposes. | Hours:<br>School day hours and home use |

Migrant Education

| | **User** | **Current Access** | **Current Use** |
|---|---|---|---|
| Migrant Education | Students | All classrooms are wired with Internet access or a combination of wired and wireless internet access.<br>Each classroom has a minimum of one computer for student use. Some classrooms have apple mobile labs. | -Developing Keyboarding skills<br>-Email<br>-Internet browsers for research |

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|---|---|---|---|
| Frequency of Use by Students | Students | All students have access to classroom and/or lab computers during the school day. Some have access after school hours. | Hours:<br>School day and extended day hours |
| Migrant Education | Teachers | Each classroom has at least an Apple or PC.<br><br>40% of Teachers have iPads | -E-mail<br>-Presentations<br>-Lesson Plans<br>-Student Records via Migrant Database<br>-Working with office related documents such as Word or Excel and forms. |
| Frequency of Use by Teachers | Teachers | Teachers have access to the classroom computers before, during, and after school hours<br><br>Teachers can bring iPads home to use for work. | Hours:<br>School day hours, plus one hour before and one hour after |

Home Charter

| | **User** | **Current Access** | **Current Use** |
|---|---|---|---|
| Monterey County Home Charter School | Students | Students only have access to computers in their homes or in the library. The MCHCS provides computer access to students on the school site when they meet with their teachers.<br><br>Students communicate and access content using a Google Apps for Education Domain | -Word Processing<br>-Web-based tutoring<br>-Tutoring program<br>-Multi-media production<br>-Communication with teachers/school |
| Frequency of Use by Students | Students | Based on student access to home | Hours:<br>The MCHCS does not |

| | | | |
|---|---|---|---|
| | | computers or computers in the library. | provide computer access to students unless they are meeting with their teacher. |
| Monterey County Home Charter School | Staff | -All teachers have been issued a Mac laptop for school use.<br>-All teachers have access to printers, fax machine, and LCD projector.<br>-All staff have access to MCHCS Google Apps for Education Domain | -Using Google Docs or Word to develop Lesson plans and/or worksheets and assignments for students<br>-Using Gmail for communication between staff, parents, and students<br>-Using projectors to display content to students |

**Curricular Professional Development**

In alignment with the goals above, the MCOE Educational Technology Department will work with internal departments to develop and implement instruction on the following topics:

- Common Core Technology Integration
- Smarter Balanced Planning, Preparation, and Implementation
- Use of Blended and/or Distance Learning Strategies
- Digital Collaboration and Sharing of Documents
- Cyber Security and Ethical Practices
- Use of Custom Data Collection Processes
- Data Analysis and Decision Making
- Maintenance of Websites and Social Media Outlets
- Use of Electronic Mail and Voice-Over-IP Phones

Personnel Responsible: Student Services Managers and Educational Technology Coordinator

Monitoring Process: The above staff will keep a log of all professional development offerings given, who attended, and the length of training. Logs will be compiled by the Educational Technology Coordinator and verified for completeness at the end of each fiscal year.

Goal: That all student-serving departments or schools will schedule a minimum of three professional development sessions of 1 day in length per year regarding one or more of the above topics, as applicable to their curricular needs.

Benchmarks: In the future iterations of the Staff Technology Survey, teachers and other student facing staff (including administrators) will rate their competencies in above topics an average of 10% higher by year 1, 20% higher by year 2, and 30% higher by year 3.

**Regularly Scheduled Professional Development**

Clerical staff, administrators, and teachers at the Monterey County Office of Education regularly use productivity apps such as Microsoft Excel or Microsoft Outlook to accomplish their work duties. For those common, highly utilized programs, the MCOE Educational Technology Department will offer regularly scheduled trainings for employees to take free of charge. Whether training is optional or mandatory is up to the supervisor of the employee. These trainings will:

- Occur on a weekly basis with schedules published at least 2 months in advanced of the class date
- Provide computers or software necessary to learning the given topic or skill
- Have no more than 15 students per teacher
- Recur quarterly at minimum
- Have added sections if demand significantly exceeds maximum allowable teacher-student ratio (15:1)
- Be differentiated according to skill level

Personnel Responsible: Educational Technology Coordinator

Monitoring Process: The Educational Technology Coordinator will send monthly reports of attendance (as tracked in the Organizational Management System) to staff that contains each employees' attendance of technology trainings in the past month.

Goal: That all employees will have attended at least five technology training classes each year and that staff will rate their competencies in productivity apps (listed in "Current Skills" an average of 10% higher by year 1, 20% higher by year 2, and 30% higher by year 3 in the yearly Staff Technology Survey.

**Customized Professional Development**

Each department within MCOE has specialized functions with unique technology needs. As such, the regularly scheduled sessions will not cover all needs. To this end, the Educational Technology department will work with department heads and managers to schedule training that effectively meets the needs of a particular staff.

Personnel Responsible: Department Leaders and Educational Technology Coordinator

Goal: That all departments will schedule at least five individual training sessions of at least 1 hour and 30 minutes each year and that in the yearly Staff Technology

Survey, staff will respond 10% higher in year 1, 20% higher in year 2, and 30% higher in year 3 to the question: "On a Scale of 0-5, how comfortable do you feel in using technology to support your unique job requirements?"

Monitoring Process: The Educational Technology Coordinator will maintain a log of all professional developments given, including sessions that were customized for a given department. Monthly reports will be given to the cabinet (senior leadership) to review adequate progress toward the aforementioned goal. S/he will also monitor and log the change in responses in the yearly Staff Technology Survey.

**Technology Orientation**

New employees must be oriented to the technology protocols and resources at MCOE when onboarding. To fulfill that goal, technology orientations will be scheduled each month that new employees will have to attend. The topics of discussion will be:

- Acceptable Use Policy
- Device Safety
- Passwords
- E-Mail Safety
- E-Mail Etiquette
- Accessing Webmail
- Taking Advantage of Shared and Personal Network Drives
- Professional Development Opportunities
- Getting Help (Using Help Ticket System)

In addition, we recognize that many former employees have never been oriented to our technology resources since starting their employment. As a result, it is our goal that each department will schedule a mandatory department technology orientation with the Educational Technology Department that will cover the same topics as the new employee class.

Personnel Responsible: Educational Technology Coordinator, Human Resource Specialists, and Department Heads

Goal: That all former employees undergo Technology Orientation within one year of publication and that all new employees undergo Technology Orientation on a rolling basis.

Monitoring Process: HR will provide the Educational Technology Coordinator a list of employees on a monthly basis that the coordinator will use to verify the goal of 100% attendance of employee attendance at a technology orientation. Attendance will be gathered via sign-in sheets that are collected by each department's manager at the time of training and passed on to the coordinator.

**New Project Training**

The Technology and Information Services Department will be implementing a number of new projects over the next three years, including, but not limited to, Voice-Over-IP phones and a new cloud portal for applications and file storage/access. We recognize that an essential part of successful implementation of these projects is making sure users know how to operate these new systems.

For each TIS project that is planned, there will be a "Training Needs Assessment" conducted that will identify the scope and audience of necessary professional development. The training needs assessment will then be given to the Educational Technology Department for review and implementation. The project manager will be responsible for providing all relevant hardware, literature, and necessary assistants to move forward with the training in a timely manner.

Goal: Each project will undergo a Training Needs Assessment and subsequent professional development in collaboration with the originating project manager and the Educational Technology Department.

Personnel Responsible: Project Managers and Educational Technology Coordinator.

Monitoring Process: The Operations Program Manager will ensure that a Training Needs Assessment is completed as part of the completion of any technology related project at MCOE. The assessment will be passed on to the project manager who will be responsible for scheduling a training session with the Educational Technology Coordinator. Upon completion of the training, the Educational Technology Coordinator will inform the Operations Planning Manager who will mark the training process as complete.

**TIS Professional Development**

There is also an ongoing need within Technology and Information Services to broaden skills to build capacity within our software development, infrastructure, and helpdesk teams. Consequently, each department head will create a department learning framework as well as individual learning plans.

The department learning framework will be used to identify key skills and sub-skills for each position inside the department. These skills will be reviewed and updated each year. In addition, the department manager will evaluate his or her employees on the skills and sub-skills within the learning framework. These assessments will give the manager a broad picture of the skills his or her employees have as well as areas for potential growth. These assessments will be updated semi-annually.

Once the learning framework is established, each manager will create an individual learning plan for every employee in the department. This learning plan will identify specific areas of growth for the employee, sources of professional development, a

timeline of learning, and an assessment of learning during and after the process. These learning plans will be done on a rolling basis throughout the year with each employee.

Goal: That each department manager will create and update a learning framework for each position and will design and implement an individual learning plan for each employee. Each department manger will assess each employee on a 0-5 scale on each skill for their position. By the end of each year, every employee will improve at least five skills by at least one point on a 0 to 5 scale.

Personnel Responsible: Department Managers for design and implementation. Educational Technology Coordinator for guidance and oversight.

Monitoring: The Educational Technology Coordinator will collect assessments from the Department Managers at the beginning and end of each fiscal year and compare the results to see if employees are meeting the desired growth goals.

# IV. Assessment of Services and Hardware

In order to fulfill the goals outlined in section II, the MCOE Technology Planning Committee has assessed the current state of services and hardware in order to determine what items must be upgraded and improved.

## A. Existing Technology Support

Monterey County Office of Education (MCOE) provides vital resources to support the county's 24 school districts, two community colleges and over 100 school sites. It serves all students within Monterey County, from pre-school to post-secondary, providing them with the tools they need to succeed in life. The total number of students enrolled (including community colleges) within the county is around 87,486. Total number of administrators and teachers is around 11,141.
MCOE also directly serves various student programs, including Special Education, Head Start, Alternative Education, Migrant Education, and Monterey County Home Charter School.

**Distributed IT Organizational & Support Structure**

MCOE has long had a distributed IT organizational structure with approximately five different IT services units, including roughly 25 full-time staff members involved in providing IT resources and services to MCOE employees. In response to the recommendations of a FCMAT audit of MCOE technology support services in 2012, the organization began a process to centralize technology support in January of 2013.

The MCOE TIS division handles organization-wide infrastructure support, and financial system support, as well as technical support for most MCOE employees, with the exception of those in Migrant Education. Professional development is provided by the Educational Technology department, with assistance from other Technology Services departments. A key goal for the TIS division is to improve communication and transparency throughout all technical support functions by developing a common organizational-wide technical support solution.

**MCOE Technology and Information Services (TIS) Division – Central Technology & Support Organization**

The TIS division at MCOE provides technology leadership across the organization and into the constituent districts throughout Monterey County. The division's dedication and service to the schools and districts provides a safe and reliable computing environment where technology operates transparently, enabling the important work of education to go on unburdened with such concerns.
The division is focused on providing enabling technology infrastructure and services in supports of MCOE's goals of:

- Student achievements
- Student safety and health
- Highly qualified teacher and staff
- Fiscal accountability

These goals are accomplished through the use of centralized strategic planning supported by the coordinated efforts of the departments within TIS. The division is divided into four departments: Infrastructure Services, Service Desk, Software Systems and Educational Technology.

**Infrastructure Services**

The department provides solutions for multi-tiered technology issues ranging from serving as an Internet Services Provider (ISP) to school districts located within the county, to providing safe and secure Internet access for teachers and students. It also provides WAN and LAN services as well as technology consulting services to schools. The department provides web hosting, email server hosting, network security services and content filtering that complies with Child Internet Protection Act (CIPA).

The Infrastructure Services (IS) team is responsible for server and network design and implementation. In this capacity, they are leading efforts to improve connectivity and bandwidth to schools throughout the county, including the wireless project at the Alternative Education Wellington facility. This project will provide network access within cellblocks for credit recovery activities to previous unserved students. Another IS project targeted at ensuring more equitable access is the Hotspot Initiative. Scheduled for the 2014/2015 school year, this project will

provide CIPA-filtered Internet access to remote and itinerant student populations who cannot otherwise be served.

**Service Desk**

The department deployed a new unified Service Desk solution – Web Helpdesk (WHD), to the whole organization in 2013. The objective of this project was to bring MCOE an ITIL (Information Technology Infrastructure Library) compliant, effective enterprise-level solution to manage, track and monitor technology services related requests and assets. The WHD system provides an online portal for user support requests and will facilitate integration of support system processes in the following areas:

- Service Desk (trouble ticketing, service support & delivery)
- ITAM (Information Technology Asset Management)
- Change Management

The Service Desk (SD) maintains a helpdesk function that provides phone support and remote control desktop assistance to the MCOE user community. It also provides Desktop Support to end-user, including the setup and configuration of all client computing devices. The SD team provides operations support for financial systems; application administrative for certain database systems; central administration of fixed asset processes; technology purchasing assistance, and support of MCOE phone systems.
The Voice over IP (VoIP) project scheduled for the 2014/2015 school year will be headed by support staff assigned to the Service Desk. The project will provide voice services, including unified messaging and presence information, not previously possible with MCOE's present phone system. The VoIP implementation will facilitate more flexibility in phone deployment, lower related maintenance costs and enable the Service Desk to expand its helpdesk services with full call-center operations.

**Software Systems**

The Technology and Information Services Software Systems team provides software consultation to clients requiring assistance in implementation and customization of software systems, development of custom software per client specifications, and assistance in evaluating potential software acquisitions. In addition, Software Systems provides support in the integration of data systems, database architecture and design, and backend technical support as it pertains to Enterprise Data Systems. Software Systems has provided and continues to provide numerous enhancements to existing software solutions. They have provided the MCOE Business Services and Human Resources departments with enhanced reports and automated notifications systems that are critical to their everyday operations within the Escape Financial System. They have also designed and developed custom applications to track the lifecycle of contracts and systems that allow employees to manage their own contact information and integrated this data into our mass notification System, ConnectEd.

One project scheduled to begin in the 2014/2015 school year is the migration, and redesign on the MCOE website. This effort will improve the functionality, content, and usability of the website to better serve the public, our school districts, staff and students.

The development team within the Software Systems department has recently moved into Student Information Systems (SIS), providing numerous enhancements to existing systems like the Special Education's Student Information System, PROMIS. In working with Special Education they implemented a number of enhancements, custom data extracts and reports to increase the productivity and accuracy of student data.

Efforts in this area will be a major focus that continues to expand over the period of time covered by this technology plan. The Software Systems team is concentrating efforts on student information, leading a project to consolidate SIS systems, taking a central role in CALPADS reporting, and developing solutions to improve data collection. One such solution slated for pilot during 2014/2015 is to move Migrant Education's data collection activities from a paper system to one using store-and-forward technology, allowing collection on an iPad that can be uploaded directly to the related database system.

**Educational Technology**

The Educational Technology department (EdTech) provides instructional technology services to MCOE employees as well as teachers, staff, and administrators in school districts throughout Monterey County. Within MCOE, the department offers regularly scheduled and requested professional development sessions centering on the efficient use of office programs needed to fulfill employees' job duties such as Microsoft Excel or Adobe Acrobat. For teachers and administrators (within and outside of MCOE), the department provides on-demand workshops at MCOE and at district sites. These workshops focus on using technology to facilitate internal communication and collaboration as well as to enhance student learning and achievement in the classroom setting and at home. Educational Technology is the component of the TIS division most directly connected with curricular goals. EdTech is charged with professional development activities directed toward raising the level of expertise and competence associated with the Common Core State Standards (CCSS) and ensuring the faculty and staff is adequately versed in the online testing requirements for the Smarter Balanced Assessment Consortium (SBAC).

Assigned responsibility for technology plan approval for all of Monterey County, the Educational Technology department plays a central role in ensuring technology is used to support instruction. EdTech leads the development and monitoring/evaluation of the MCOE Technology Plan and provides a vital conduit between the other TIS departments and instructional staff from MCOE Educational Services, Student Services and our constituent districts.

## B. Client Technology Usage

### Client computing and management

MCOE's distribution of traditional computers is split 60% Mac and 40% PC. Over half of the computers are located at remote sites that reside behind another district router or firewall. Many of these computers connect back to MCOE using a single district NAT IP address. This environment poses a considerable management challenge. Some of the biggest issues have been:

- Active Directory integration
- Client management and inventory
- Patches and compliance
- Organizational File sharing

In the last few years the proliferation of mobile devices, such as tablets and Chromebooks, has increased the complexity of the challenge faced by systems management.

Currently MCOE has implemented partial solutions that cater specifically to the Mac or PC environments. For Mac and iOS devices we utilize the Casper Suite of tools for systems management. Casper provides inventory and configuration management for both local and remote devices. We have over 500 Apple Computers and 286 iOS devices currently enrolled in the system. PC management does not have parity with the Macs. Local PCs are managed with Active Directory and Group Policies. This type of management is not available for many of our remote and itinerant PC users. MCOE will be evaluating tools in the future that will provide the management capabilities we require.

The computer deployment strategy at MCOE relies upon two different imaging solutions. Mac imaging utilizes Deploy Studio, a free open source tool that offers flexible workflows, and imaging over the network. PC imaging utilizes Smart Deploy. The tool has not been fully implemented, but has been tested. Smart Deploy offers the flexibility to maintaining master images as virtual machines, and alleviates hardware driver compatibility issues. Both tools help speed up the deployment process, and provide a means to expedite system repairs when all other options are exhausted.

Client computing at MCOE continues to move towards a streamlined and centrally managed approach that will increase access and availability to technical resources for faculty, staff, and students.

### Productivity Tools

The primary productivity tools used at MCOE are Microsoft Office (Word, Excel, Outlook, and PowerPoint) and the Adobe Creative Suite 6 Production Premium.

These tools are available to both Mac and PC users, and are available to purchase at a significant discount to all faculty and staff of MCOE.

To keep abreast of the industry shift towards more cloud based productivity tools MCOE has started to explore the uses of tools such as Google Apps in Education. There is no definitive plan to move in that direction at this time, but MCOE will be monitoring the progress of these cloud solutions as they mature.

## C. Networking and Telecommunication Infrastructure

### Network Infrastructure

The MCOE wide area network has a hybrid network architecture which includes T1, fiber optic, and licensed/unlicensed microwave/802.11 radio links. There are approximately 126 remote school sites connected to the network, supporting approximately 11,300 individual connections. The MCOE network's connection to Internet is provided by K12HSN/CENIC on an AT&T 10Gbps circuit with a 1Gbps backup circuit.

MCOE remote offices have network connections in speeds ranging from single or multiple 1.5Mbps (T1), 10Mbps-45Mbps (point-to-point wireless connections), to 100Mbps (AT&T Customized Switched Metro Ethernet or, CSME connections).

MCOE's local area network at our central campus is supported by an extensive fiber optic infrastructure. The campus network is composed of a 1Gbps backbone with fiber links to all buildings. The access layer switches are power over Ethernet (PoE) enabled Cisco 3560s. The core switch is a Cisco 6509 switch with redundant supervisor engines.

### Wireless Access

The TIS department has provided a wireless infrastructure to create a seamless wireless environment for all MCOE wireless users. To help ensure ubiquitous campus wireless coverage and to decrease the cost of wireless services, a centrally managed infrastructure with a Cisco WLAN 4402 wireless controller, has been constructed using "thin" or light weight access points (LWAP). Both encrypted and unencrypted access is provided. All LWAPs are 802.11A/B/G capable. There are 34 Cisco 1242AG access points deployed throughout the MCOE network. We are quickly approaching the management capacity limit of Cisco WLAN 4402 controller, which can manage no more than 50 LWAPs. There is very limited wireless coverage for MCOE remote sites.

### Remote Access

MCOE provides virtual private access (VPN) access, which gives remote & wide area

network (WAN) users secure access to critical network resources at the central office. The VPN connectivity is provided by a Cisco Adaptive Security Appliance (ASA).

**Phone System**

The current MCOE phone system – AT&T Centrex—has been in use for the last 20 years or so. Centrex – a 1980's technology is a reliable, central-office based voice communication solution without the large up-front investment. However, the system lacks flexibility, and is slow to respond to users' needs. MCOE has been charged by vendors for simple moves, adds and changes. Currently the MCOE's automated attendant/Centrex call distributor system (MessagePro) is residing on a standalone, in-house device that has no data or power backup.

**Routers and Switches**

The department operates and manages a county wide area network (WAN) which connects over 126 school sites, and administrative office sites. The core WAN router at the central office is a Cisco 7609 router, with redundant supervisor engines. Routers used at remote sites are Cisco 2600, 2800, 3700, and 3800 series routers. As district wide area connections are upgraded to higher speeds district edge routers will be replaced with devices capable of the higher throughput. The TIS department also operates and manages the local area network (LAN) for MCOE, providing network services for MCOE central office. The core LAN router is a Cisco 6509 router, with redundant supervisor engines. The access switches are power over Ethernet (POE) enabled Cisco 3560s.

**Servers & Platform Virtualization**

The MCOE currently has over 60 application and resource servers, both physical and virtual, running on Dell rack and blade servers. A server virtualization platform with 10 Dell blade servers running on VMWare vSphere 5.x, is deployed. This virtual server farm reduces per server costs, increases availability and improves the efficiency of administration.

**Storage Area Network (SAN)**

The MCOE has deployed a Nimble CS-460 as the primary storage system, providing shared storage to critical systems including the server virtualization platform (VMWARE vSphere), desktop virtualization (Stoneware), Exchange, financial systems, file servers, and disk-disk backup etc. Combining simplicity and performance, the Nimble storage array delivers performance, expandability, and advanced data management features.

**Server Resources**

The majority of MCOE's servers run on Windows 2008r2 operating systems, Network operation-related servers (external DNS, MRTG, NMIS etc.) run on Redhat Linux Advanced server. MCOE's enterprise system architecture is on Windows centric platforms including Windows Server, Active Directory, and Exchange 2007. MCOE's enterprise Active Directory system is a two-domain system within a single forest. The system serves as the source of authentication and authorization for most of the MCOE's key applications. MCOE's enterprise Email system utilizes Microsoft's Exchange 2007 and provides each MCOE user with email, calendaring, contact and task related tools.

**Client Computer & Enterprise Mac Management Solution**

36% of the client computers are running on the Windows 7 operating system, while the majority upon the Mac OS-X operating system. There is room for improvement in the current management capabilities for Macs in the organization. The top three issues facing Mac integration are: Active Directory integration, client management for inventory, patches and compliance, and file sharing across operating systems. Mac adoption and management challenges are growing steadily within the organization.

**Virtualization/Cloud Computing**

Secure private cloud computing by Stoneware is implemented at the MCOE. Stoneware, unlike any other VDI or conventional cloud solution, facilitates complete web-based IT delivery through a desktop built into the browser that functions on most devices. Classlink's Launchpad has been chosen to augment our cloud offering by providing a high performance interface alternative. Currently Launchpad is in alpha testing.

**Networking, Telecommunication and Data Center Infrastructure Monitoring**

In the area of infrastructure – increasing demands for higher bandwidth by the various applications is driving the need for an improved infrastructure to meet those demands. Video conferencing, distance learning, video streaming, webcasting, etc. all require a more robust network infrastructure to support these applications. The TIS Network department is deploying advanced monitoring and analysis tools to better insure increased visibility and predictability of our entire infrastructure.

**Main Connection to the Internet**

MCOE's 10G connection to the Internet is provided by CENIC/K12HSN, and is being shared by the MCOE and 24 school districts. Current bandwidth utilization is averaging 10%. With school district connections migrating to AT&T's 1Gbps ASE or similar high speed fiber connections in the next year, this coupled with a drastic increase of multimedia educational applications and rich media needs, bandwidth usage of the 10G connection is expected to rise to 40%. The TIS department will

continue to monitor bandwidth usage and plan for appropriate upstream connections over the next 3 years.

### 10/100/1000 Ethernet Connection to desktop

Existing MCOE Cisco 3560 main campus access level switches are capable of providing 10/100 connection speeds to the desktops. The proliferation of multimedia applications combining image, video and sound means that file sizes greater than 50 Mbytes are not uncommon. Users expect content to appear instantaneously; only Gigabit Ethernet can guarantee this level of response time. When funds become available, it is necessary for the MCOE to upgrade all desktop connections to 10/100/1000 capable Ethernet connections.

### 10G Backbone Connection for the MCOE Main Campus

The existing MCOE main campus backbone fiber connection is 1G. The continuing deployment of cloud based computing products is placing an extra strain on the network infrastructure. While existing Fast Ethernet switches with Gigabit uplinks are fine for connecting desktops and laptops equipped with 100 Mbps interfaces, they are not optimal for use in an entity deploying Gigabit-capable end points such as current desktops and notebooks. For these environments a high performance Gigabit Ethernet switch with a 10 Gigabit uplink capability is preferred to provide optimal levels of performance.

### Network Critical Path Redundancy

As the network becomes increasingly important, network critical path redundancy is needed to enhance overall network fault tolerance and reliability. Core network devices such as the border router, network firewall, and core switches all need to have redundancy built in.

### Wireless Network for the MCOE and Remote Sites

Through traffic tunneling, MCOE shall be able to deploy light weight access points at remote sites, so that 802.11 wireless coverage can be provided yet remain centrally controlled. There are 34 Cisco 1242AG access points deployed throughout the MCOE network. The MCOE is quickly approaching the management capacity of Cisco WLAN controller, which can manage no more than 50 LWAPs. The MCOE needs to upgrade the controller so that it can provide central management capabilities for growing numbers of access points. Next-generation 802.11ac wireless technology is ready for business and has been deployed extensively across many industries. Adoption of 802.11ac wireless today protects our long-term investment by delivering the performance needed to support new applications and meet user expectations for mobility. By deploying a next-generation 802.11ac wireless network, we can:

- Lower the total cost of full employee mobility

- Address the wave of mobile client devices entering the network
- Meet challenges associated with demanding RF environments
- Enable bandwidth-intensive multimedia applications

In the next 3 years, the TIS department will continue to improve wireless infrastructure solutions using licensed and un-licensed microwave wireless technologies to provide connectivity to our underserved rural school districts.

**Air Cards for Mobile Work Force**

Many remote sites and districts, that the MCOE serves, are in rural areas with spotty local wireless coverage. Our staff tends to be very mobile, and needs wireless access all the time. Cellular based commercial wireless providers offer roaming access to the Internet outside the array of Wi-Fi hotspots. The advantage of Cellular Data Connections over other types of wireless service is that one can use it to connect to the Internet wherever cellular service is available. MCOE mobile employees need to be equipped with cellular data connections to ensure a persistent data connection for their critical applications. Using Verizon's Private Network switching service, remote user traffic can be routed back through our datacenter allowing for full management and filtering capabilities. We will be working with Verizon Wireless to implement this technology in the near future.

**Network Connectivity for Remote Sites**

All MCOE sites must have LAN and WAN connections capable of supporting the ever increasing demands for online educational support materials, video and audio streaming, video conferencing and VoIP. The following are network connectivity needs for all MCOE remote sites:

- Cat5 or better LAN cabling for all sites
- Appropriate wired network drops per classroom
- 802.11x Wireless connectivity
- High Speed WAN connection

**Network and data security**

The TIS department has identified a need to improve network and data access security. Third party vendors will be regularly used for security audits. Monterey COE Security policies and related procedures will be created and their efficacy verified by audit results.

**Data Center Energy Efficient Power & Cooling**

Correctly managing power and cooling issues in data center environment can enable us to maximize energy efficiency, and reduce our operating expenses, while maintaining uptime in our mission-critical facility. Our current datacenter cooling design needs improvements made to direct cooled air more efficiently to devices.

**VoIP and Unified Messaging**

MCOE is currently transitioning away from a 20-year-old legacy AT&T Centrex phone system to a modern hosted Voice over IP system provided by Jive. The impetus for this change stems from the inflexibility of Centrex, and a lack of desirable features. Centrex requires outside intervention for basic activities, such as resetting voicemail passwords and moving phone extensions. Jive will make basic activities serviceable by internal support technicians. Jive will allow us to extend access of the phone system to remote sites with minimal effort. The advanced features of the Jive system will allow for call routing and call center functionality that is not available in the Centrex environment. Jive moves us closer to a unified messaging system by allowing the delivery of voicemail to email accounts, and access to the Active Directory Global address list from the phone. The new system will allow for the use of softphones that give all the functionality of a phone but in a software application that runs on the user's computer. E-rate funding for this project has been approved, and the implementation should be complete by years end.

**Disaster Recovery Planning**

MCOE TIS department has been charged with critical tasks such as providing networking access to over 100,000 students, teachers, and administrators, and producing payroll for all schools and districts. An uptime of close to 100% is mission critical to the organization. A business continuity plan, which should include disaster recovery plan, should be prepared and implemented. Possible disaster recovery strategies might include:

- Replication of data to an off-site location. This generally makes use of storage area network (SAN) replication, or VM replication technology
- High availability systems which keep both the data and system replicated off-site, enabling continuous access to systems and data

**Core Devices Lifecycle Management and Periodic Devices Refresh**

As part of IT Asset Management (ITAM), core servers and network devices need to be replaced regularly to meet vendor's minimum support requirements. MCOE needs to replace and/or upgrade existing servers & network devices (routers, switches, and appliances), and acquire additional devices so that functions and services may be distributed and redundancy established. Specifically, we need to:

- Replace all access points with 802.11ac capable wireless devices

- Replace all end of support, end of life servers
- Replace all end of support, end of life networking devices including firewalls, routers and switches

### Email and Document Archiving

E-mail archiving is a systematic approach to saving and protecting Email messages so that they can be accessed quickly at a later date. The department backs up e-mail, but not in a manner that make messages searchable. If a specific e-mail needs to be traced, it often takes days to find it. With today's compliance legislation and legal discovery rules (such as the Federal Rules of Civil Procedure and The California Public Records Act), it has become necessary for the department to manage the entire organization's e-mail archiving so that specific messages can be located in minutes. To accomplish this the MCOE needs to introduce:

- A board approved data retention policy
- A policy-based e-mail & document archiving system, allowing IT managers to manage large e-mail & document archives, as well as to free up space on production servers and speed up backup times.

### Public & Private Cloud Computing

Cloud Computing can be described as the use of online services that have traditionally been carried out locally, or on the desktop/ notebook. It allows shared resources, software, and information provided to computers and other devices on demand. Infrastructure as a Service (IaaS) is becoming much more common as a method of providing services such as web hosting and online backup services. MCOE can benefit from cloud computing by shifting applications backup and archiving into public cloud where appropriate. While at the same time, with the introduction of private cloud applications such as Stoneware and LaunchPad, the TIS department can now provide smaller districts with a higher quality services, saving districts from the vast amounts of capital outlay.

## D. Software Information Systems

### Student Information System

Currently, each MCOE educational program is using its own student information system (SIS): Power School by Alternative Education and Home Charter, PROMIS by Special Education, SIRUS by SELPA, ChildPlus by Head Start, COESTAR by Migrant Education. Additionally Home Charter is evaluating a new SIS, School Pathways. Standardization across programs will provide cost-savings, organizational expertise between programs as well as more consistent data integrity, and integration. MCOE needs to introduce a unified SIS system, to facilitate the student transitory movement, better data integration, and relational data integrity.

## Escape Financial System

It is the goal of the MCOE TIS department to provide and support the best possible financial system resources to its clients. Beginning in July of 2012, the TIS department began a 2 phased migration and implementation of the Escape Financial System replacing our former Financial Management System. In the coming years the TIS department will increase their efforts to build custom modules that integrate with the Escape System to ensure data consistency and integrity throughout the organization by providing an authoritative source for all financial and human resources data.

## IT Asset Management (ITAM)

The IT Asset Management function is the primary point of accountability for the life-cycle management of information technology assets throughout the organization. Included in this responsibility are development and maintenance of policies, standards, processes, systems and measurements that enable the organization to manage the IT Asset Portfolio with respect to risk, cost, control, IT Governance, compliance and business performance objectives.

IT Asset Management includes integrated solution that works with all departments that are involved in the procurement, deployment, management and expense reporting of IT assets.

MCOE TIS will implement the built in Asset Management module in the Escape Financial System beginning July 2014 to support the following functions:

- Gain control of the inventory
- Increase accountability to ensure compliance
- Enhance performance of assets and the life cycle management
- Risk reduction through standardization, proper documentation, and loss detection.

In the coming years the TIS department will establish integration with hardware discovery tools to supplement available device data relevant to TIS and again establish the Escape Financial System as the authoritative source for data.

## E. Goals and Benchmarks

### Goal 1: Fulfill technology needs identified above

| **Year 1 Benchmark** | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Deliver high speed broadband connections to sites previously connected by T1 or slower connections where possible and forecast further upgrades as they become needed or available. | Director of Infrastructure - TIS | Planning and preparation Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |
| Deliver WAN connectivity and wireless access to Head Start remote sites. | Director of Infrastructure - TIS | Planning and preparation Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |
| Migrate district WAN connections from CSME to ASE for Carmel Unified, Chualar Union, Gonzales Unified, South Monterey County Joint Union High, King City Union, Pacific Grove Unified, San Ardo Union, Soledad Unified, Spreckles Union, Washington Union and Salinas Union High School. Forecast future bandwidth needs and increase circuit bandwidth as needed. | Director of Infrastructure - TIS | Planning and preparation Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |
| Implement wireless access in Alternative Education classrooms. | Director of Infrastructure - TIS | Planning and preparation Director of Infrastructure will meet with stakeholders periodically to |

| | | |
|---|---|---|
| | | apprise them of progress until the goals are met. |

| **Year 2 Benchmark** | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Deliver high speed broadband connections to sites previously connected by T1 or slower connections where possible and forecast further upgrades as they become needed or available. | Director of Infrastructure - TIS | Implementation Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |
| Deliver WAN connectivity and wireless access to Head Start remote sites. | Director of Infrastructure - TIS | Implementation Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |
| Migrate district WAN connections from CSME to ASE for Carmel Unified, Chualar Union, Gonzales Unified, South Monterey County Joint Union High, King City Union, Pacific Grove Unified, San Ardo Union, Soledad Unified, Spreckles Union, Washington Union and Salinas Union High School. Forecast future bandwidth needs and increase circuit bandwidth as needed. | Director of Infrastructure - TIS | Implementation Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |
| Implement wireless access in Alternative Education classrooms. | Director of Infrastructure - TIS | Implementation Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |

| Year 3 Benchmark | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Deliver high speed broadband connections to sites previously connected by T1 or slower connections where possible and forecast further upgrades as they become needed or available. | Director of Infrastructure - TIS | Monitoring and Forecasting<br>TIS director will meet with stakeholders periodically to apprise them of progress until the goals are met. |
| Migrate district WAN connections from CSME to ASE for Carmel Unified, Chualar Union, Gonzales Unified, South Monterey County Joint Union High, King City Union, Pacific Grove Unified, San Ardo Union, Soledad Unified, Spreckles Union, Washington Union and Salinas Union High School. Forecast future bandwidth needs and increase circuit bandwidth as needed. | Director of Infrastructure - TIS | Monitoring and Forecasting<br>TIS director will meet with stakeholders periodically to apprise them of progress until the goals are met. |

**Goal 2: Students and staff will exercise best cyber safety practices and ethical technology use.**

| Year 1 Benchmark | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Apply content filtering to all student traffic including application level inspection and secure traffic inspection. | Director of Infrastructur e - TIS | Planning and preparation<br>Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |

| Year 2 Benchmark | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Apply content filtering to all student traffic including application level inspection and secure | Director of Infrastructur | Implementation<br>Director of |

| | | |
|---|---|---|
| traffic inspection. | e - TIS | Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |

**Goal 3: Students, faculty, and staff will have equitable access to high speed Internet, digital curriculum, and mobile devices.**

| **Year 1 Benchmark** | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Deploy secure cellular based network extensions to ensure equitable Internet access for students, faculty and staff located at mobile or remote sites not covered by conventional network connectivity | Director of Infrastructure - TIS | Planning and preparation<br><br>Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |
| Deliver conventional applications via secure web based portal access for greater location and device independence. | Director of Infrastructure - TIS | Planning and preparation<br><br>Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |

| **Year 2 Benchmark** | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Deploy secure cellular based network extensions to ensure equitable Internet access for students, faculty and staff located at mobile or remote sites not covered by conventional network connectivity | Director of Infrastructure - TIS | Implementation<br>Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |
| Deliver conventional applications via secure web | Director of | Implementation |

| | | |
|---|---|---|
| based portal access for greater location and device independence. | Infrastructure - TIS | Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |

| **Year 3 Benchmark** | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Deliver conventional applications via secure web based portal access for greater location and device independence. | Director of Infrastructure - TIS | Monitoring and Forecasting<br>TIS director will meet with stakeholders periodically to apprise them of progress until the goals are met. |

**Goal 4: MCOE will use technology to improve the collection, storage, and analysis of student assessment data to inform curricular decisions.**

| **Year 1 Benchmark** | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Provide enterprise class hosting services for the centralization of student information systems | Director of Infrastructure - TIS | Discovery, planning and preparation<br><br>Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |

| **Year 2 Benchmark** | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Provide enterprise class hosting services for the centralization of student information systems | Director of Infrastructure - TIS | Implementation<br>Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until |

| | | |
|---|---|---|
| | | the goals are met. |

| **Year 3 Benchmark** | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Provide enterprise class hosting services for the centralization of student information systems | Director of Infrastructure - TIS | Continued discovery, planning and preparation<br><br>Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |

**Goal 5: MCOE will use technology to improve communication between staff, home, and community.**

| **Year 1 Benchmark** | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Implement a Voice Over IP telephone system to improve efficient communication inside and outside the MCOE. | Director of Infrastructure - TIS | Discovery, planning and preparation<br><br>Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |

| **Year 2 Benchmark** | | |
|---|---|---|
| **Recommended Actions/Activities** | **Person(s) Responsible** | **Monitoring & Evaluation** |
| Implement a Voice Over IP telephone system to improve efficient communication inside and outside the MCOE. | Director of Infrastructure - TIS | Implementation Director of Infrastructure will meet with stakeholders periodically to apprise them of progress until the goals are met. |

# V. Evaluation Process

## Monitoring and Evaluation

A recurring theme of this Educational Technology Plan is the importance of informal and frequent communications among the MCOE's departments and within each department's professional networks to monitor relevant advances in technology and evolving practices. Through these communications, the departments can monitor and evaluate the implementation of their respective Technology Plans and identify needs and opportunities to revise their Plans.

Accordingly, MCOE's Technology Support Committee, which includes representatives of each department within the MCOE, will convene regular meetings to report specific progress in implementing their respective portions of the Educational Technology Plan, discuss technology-related actions of possible interest to other departments, and invite advice on any current technology-related problems and issues within the department. The department representatives will work very closely with the department administrators to assist in the evaluation and assessment of programs, and the effectiveness of the plan within their individual departments.

The committee will also serve in an advisory capacity for each department - reviewing the annual progress, providing assistance for ensuring goals and objectives can be met, offering advice for implementation issues, and for ensuring overall compliance with the technology plan.

In general, the departmental representative on the MCOE Technology Support Committee will be responsible for collecting data and assessing the progress toward meeting their respective goals and objectives. The representative will meet annually with the department administrator to report on the status, and to make recommendations based on the results and follow-up assessments.

## Schedule for Evaluating the Effect of Plan Implementation

Recognizing the continuing, rapid evolution of information technology, and the emergence of useful new applications of this technology for educational agencies, the MCOE assigns a high priority to conducting regular inquiries into opportunities to adopt new technologies and coordinating uses of technology internally. These activities are appropriately combined with systematic reviews of progress toward goals of the MCOE's Educational Technology Plan.
Given these considerations, the MCOE Technology Support Committee, which meets bi-monthly, will be convened semi-annually with agendas that focus on these objectives. The representative of each department that is included in this Educational Technology Plan will be expected to report in detail on the respective department's progress toward its goals and objectives.

In addition, our process for monitoring and evaluation of progress toward these goals includes a review of progress by the Educational Technology Coordinator during the latter part of each year covered by this Educational Technology Plan. This Educational Technology Coordinator will be commissioned to:

- Analyze the goals and objectives of the Plan, including any revisions that have been made,
- Interview each department's manager and Technology Support Committee representative,
- Report objectively on each department's progress to date, and
- Recommend needs, if any, to refine the monitoring and evaluation process.

**Process of Communicating Evaluation Results**

The results of the monitoring process and evaluation will be used as appropriate principally to refine and update the Educational Technology Plan to reflect changing needs, new hardware and software technologies and changing relationships with schools, districts and other educational and community agencies within the Monterey Bay region.

In addition, these results will be used to refine and strengthen the monitoring and evaluation process itself, with the intention of generating clear, comprehensive and practical feedback that is of real value in the ongoing task of optimizing the MCOE's uses of information technology.

Given these considerations, the MCOE Technology Support Committee will be convened semi-annually with agendas that focus on these evaluation results. The MCOE Technology Support Committee will report annually to the County Superintendent of Schools, the MCOE Cabinet, and the County Board of Education, presenting accomplishments and goals.