Mission College Technology Development Plan
FY19-FY23

Approved by Mission College Council, Academic and Classified Senates in Fall 2019

(July 2019 Version)

Technology Committee FY17-19

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Introduction

The purpose of the Technology Development Plan is to serve as the College technology directions and standards reference for Mission College's planning, implementation and use of information, instruction, media, and event support technology, serving the achievement of the College's strategic mission and objectives. This plan is a dynamic document that will be revised yearly as needed and updated with a review of technology activities, progress, and trends. At the beginning of each academic year, the Technology Committee will review the Plan in the context of projects and initiatives progress, research and survey analysis, alignment with revised District and Campus Strategic Plans, Vision and Mission Statements, and interaction with various stakeholders. The Committee will then update and revise the Technology Master Plan and report on the progress to GAP, the College's Participatory Governance Committee.

The foundation upon which this plan was developed is Mission College's vision for technology:

- Through participatory governance in support of our first priorities, Mission College systematically commits to evaluating and improving educational programs, technological resources and student support services by making informed decisions, allocating resources and establishing institutional policies and procedures.

To accomplish its mission, the College:

- Promotes an organizational culture that engages in continuous learning and uses the results of systematic data assessment and evaluation to inform decision-making, allocate resources, and improve institutional policies and procedures.
- Provides comprehensive academic and technological resources.

Use of This Document

This document serves as a context and framework for technology visioning and planning at all levels of college administration. Individual initiatives should be aligned with College goals, take advantage of existing or emerging College technology strategies and standards, and coordinate with other technology development activities. The Plan should be used as reference and evidence of an initiative's alignment and relevance to the College's master vision of technology development during the project planning, review, and approval process.

Technology Committee

In order to become broader in its scope and outreach, as of the 2011 academic year, the Technology Committee was reorganized as a participatory governance committee and reports to Mission College Council. The Committee meets twice each month during the fall and spring semesters and is made up of 12 members: six faculty – one from each of the six divisions – two administrators, two classified staff, and two students, plus the following ex-officio members: the Committee chair, the College Web master, and one representative from Distance Learning, District Information Systems, the Library, and the Disabilities Instructional Support Center.

The Technology Committee is responsible for developing and overseeing the Mission College Technology Master Plan and for participation in the review and deployment prioritization of the technology requests identified during the College's yearly Program Review process. In addition, the committee conducts a technology survey each academic year, alternate years shifting focus between faculty/staff and students. The Committee designs, distributes, collects, and analyzes the surveys. The results are shared with the appropriate departments and published on the Technology Committee Web page. In addition, the Committee uses the analysis to inform Tech Master Plan review and the tech planning and deployment recommendations related to the Integrated Budget Allocation and Program Review Process.

Technology Management Process

Strategic Technology Classification:

Technologies that support instruction and services in the WVMC District fall into 4 distinct classes:

1. Instructional: Classroom A/V, Computer labs, Presentation halls, Student support centers, instructional servers, software, media production, media distribution.
2. Academic Services: Scheduling, course management, distance learning, student support services.
3. Business: finance, A&R, student records, printing, student business services, office hardware.
4. Network: Ethernet, fiber, Wi-Fi, Enterprise server systems, and IT security.

Technology classes 3 and 4 are related primarily to District Services and are guided by the District Strategic Master Plan. Technologies 1 and 2 are more specifically related to the College and are the primary focus of the College Technology Master Plan. District planning influences development of the College's technologies. The College's goals and objectives inform District planning. Coordination occurs through the VP-I.S. Committee, DISPAC, CBAC, and Division Council. The College Technology Master Plan is downward focused on needs and outcomes in service of the ultimate beneficiaries of applied technologies - students, faculty, staff. Goals and objectives will reference District technologies only as they influence student outcomes.

Technology Management

Technology resources at Mission College are managed through two departments, District Information Systems (IS) and Educational Technology Services (ETS) in coordination with the Technology Committee and the Distance Learning Committee.

District Information Systems (IS) is a West Valley Mission Community College District (WVMCCD) service that supports the technology needs of all employees at both West Valley College and Mission College. IS is headquartered at West Valley College with an additional building at Mission College for the staff and core network hardware dedicated to Mission College. IS supports the administrative needs of the College, including the telecommunications network, wireless network, phone system, email system, all enterprise software such as Banner, and all faculty/staff office computer needs, including both software, and hardware.

Refer to District Information Systems Technology Strategic Plan (2018-2021) for a list of their goals and Total Cost of Ownership information, including funding:

https://wvm.edu/committees/dispac/Public%20Documents/District%20Information%20Systems%20Technology%20Strategic%20Plan%20(2018-2021).pdf

Mission College Educational Technology Services (ETS) is responsible for campus-level instructional technology needs. ETS is based at Mission College and supports the computer hardware and software needs in the classrooms, computer labs, and support centers including the ASC, Welcome Center, Assessment Center, and public computers in the Library. ETS also supports all campus Audio/Visual systems in classrooms, conference rooms, event venues, and other student support facilities. ETS provides media production, management, and distribution tools and services, as well as media support for instruction, training, and events. ETS manages new technology deployment and technology refreshment, project design and installation, and consults during design and construction of new building and building remodel projects. ETS consults with user groups throughout the technology purchase request process. The ETS department reports to the Dean of Business, Technology and Kinesiology.

Mission College Distance Learning Committee reports to the Academic Senate. This committee leads Distance Learning activity and development, and is responsible for the training needs of faculty. ETS provides technology coordination, direction, advice, and deployment services to the Distance Learning committee on an ad-hoc basis.

Technology Plan Update Process

Each fall, the Technology Committee updates the Technology Master Plan based on the previous year's activities:

- Review/report progress on past year's Recommendations, Initiatives, and projects.
- Analyze:
    1. Tech Survey, Summary, and ETS analysis.
    2. Program review request documents: department, college-wide, future
    3. Program review budget allocation
    4. ETS activity reports, trends and tech usage.
    5. District Strategic Plan
    6. Campus Strategic Plan
    7. EFMP updates.
    8. Instructional and student support planning and initiatives.
    9. ETRIS Plan.
- Update:
    10. Goals and Objectives
    11. Processes
    12. Standards

Refer to the Technology Committee documents archive for Tech Survey Summaries and Survey Analysis Reports: http://www.missioncollege.edu/inside_mission/committees/technology/documents/index.php?dir=Surveys

Educational Technology Refresh Inventory Schedule (ETRIS)

To be effective and systematic in planning, deployment, and maintenance of thousands of technology items, ETS maintains detailed records of all instructional technology equipment, inventoried in a document named: Educational Technology Refresh Inventory Schedule (ETRIS). This document keeps track of all technology item descriptions, quantity, deployment time, suggested replacement schedules, primary users, installed locations and projected replacement costs. ETRIS is organized in three sections: Computing Hardware, Computing Software and Audio-Visual Hardware.

When budget is allocated, items listed in ETRIS are scheduled for replacement/renewal based on deployment date and expected lifespan. Items in ETRIS are not part of the Program Review technology request process as they are considered Operational Resources and not Department or Service Area Program Innovation requests. Annually, ETS collaborates with Office of Administrative Services and College Budget Advisory Committee (CBAC) to coordinate budget, replacement planning, and deployment.

Technology Request Process

One of ETS' important functions involves research of education/student-related technological developments. This includes planning, purchasing, installing, and deploying new technology on campus. ETS works on new technology for future buildings, refreshing existing technology, upgrading various pieces of equipment as they become old and/or obsolete, and working with departments to standardize where possible and realize their technology goals.

All instructional technology requests for hardware, software, equipment upgrades, operational improvements, and suggestions for additions to classrooms must begin in the Technology Request Process associated with Program Review. The TRP workflow standardizes a process cycle of request review and consultation, request refinement,

prioritization, approval, and budgeting. As the department managing deployment and service of instructional technologies, ETS is a key consultant in the process, reducing inefficiencies, conflicts, missed deadlines (critical for grant funding), and overlooked better alternatives.

All departments must consult ETS early in the process of a technology initiative, regardless of funding sources. ETS can provide guidance and coordination with other initiatives already underway, helping avoid redundant solutions, workload impacts, and scheduling issues, in the context of project management capacity on campus and compatibility with existing facilities systems.

Refer to the GAP and Technology Committee-approved Technology Request Process for a better understanding of the work flow here:
http://www.missioncollege.edu/inside_mission/committees/technology/TechProcessApproved20160209.pdf)

Integrated Budget Allocation and Program Review Process

IBAPRP defines the flow of managerial approval, prioritization, budgeting, and funding of technology requests.

- Program Review drives the Integrated Budget Process Prioritization:
  - First at the Department, then Division level.
  - Then Division Council & Student Services Council.
  - Then Student Services – Instruction Joint Council.
- The roles of CBAC and President's Cabinet are to assess costs, prioritize, recommend integrated prioritization list & funding reviews, set funding allocation and send recommendations to GAP.
- GAP reviews & recommends final integrated prioritization list.

- Process allows funding integration to requests by tying funding allocation to program review and strategic plans, SLO's, PLO's, SAO's and goals

Refer to IBAPRP review cycle (Appendix: IBAPRP Cycle diagram. Funding Cycle diagram)

Education and Facilities Master Plan Process

On a five-year cycle, a consultant is retained to review and update the MC Educational Master Plan and the Facilities Master Plan. Mission College's 2018-2023 Educational Master Plan makes general recommendations that address the needs of the college, its students, and the community it serves for the next five years. The plan is in keeping with the college's vision and mission. The Mission College's 2018-2023 Educational Master Plan provides a roadmap for the development of the College's physical campus, including new construction, replacement of existing obsolete facilities, and refresh/repurpose of facilities where practical. The Plan is aligned to support the EMP recommendations and strategic vision of the College in support of student success.

Input derived from surveys, campus and community forums, constituent meetings (faculty, staff, management, students), and institutional data is gathered and posted. Synthesis of recommendations are posted for campus and general community feedback, informing the EFMP plan and recommendations.

The Educational and Facilities Master Planning Committee, a participatory governance committee, consisting of representatives of the faculty, classified staff, students, and management, develops the Educational Master Plan's overarching five-year recommendations.

Refer to Mission College Education and Facilities Master Plan 2018-2023
https://www.missioncollege.edu/research/Mission_College_Master_Plan_Final.pdf

District Strategic Plan Process

The District Technology Strategic Plan (DTSMP) represents an overview of the District's technology needs. It provides overall vision that anticipates the emerging technological needs of the Colleges and District entities that requires an understanding of and accommodation for Federal, State, and Local requirements. The DTSMP anticipates and provides for the technological needs necessary to enable other planning processes at the District and College level and ensures a continuous two-way alignment with the Colleges' technology requirements in support of Instruction and Student-focused services. The Technology Strategic Plan also addresses the budget necessary to accomplish the goals and objectives of the plan.

Refer to District Information Systems Technology Strategic Plan (2018-2021):

https://wvm.edu/committees/dispac/Public%20Documents/District%20Information%20Systems%20Technology%20Strategic%20Plan%20(2018-2021).pdf

Advisory entities informing the District Tech Plan include:

VPs – I.S. Committee (includes the Vice Chancellor, Vice Presidents from the colleges).

This body is responsible for:

1. Establishing and articulating district technology directions;
2. Establishing technology priorities;
3. Reviewing and approving proposed technology policies;
4. Meeting accreditation standards.

District Information Systems Advisory Committee (DISPAC) (which is the district technology committee). This committee includes representative from both college technology committees, campus ETS staff, and faculty.

This body is responsible for:

1. Recommending district technology directions;
2. Recommending technology priorities;
3. Recommending proposed technology policies;
4. Ensure alignment
5. Advisory Committee Workgroups: Data Warehouse Workgroup; A&R Workgroup.
6. Task Forces: Ad hoc project teams support specific District technology initiatives, such as Banner implementation.

ADA Compliance Process

The District's intention is to infuse ADA compliance into all technology development and deployment processes, including technology requests, consultation, design, prioritization, purchasing, deployment, and support.

Technology ADA compliance is structured by a District-wide ADA Compliance Advisory Group. Membership includes District and College Webmasters, representatives from campus Educational Technology departments, District IS representatives, District HR Compliance Officer, District Purchasing, and campus DSPS offices.

At Mission College, Department technology requests are made as part of the Program Review cycle. The requests are vetted through the Technology Request Process. ETS consultation provides guidance and review, including ADA compliance. The Campus ADA compliance review duties are currently performed by an ETS staff member.

Compliance confirmation is performed by District Purchasing in the processing of purchase orders. The ADA Compliance Advisory Group is building a library of guidelines and templates for department requisition submittals.

Each College has an office of Disability Support Services. The department is a resource for ADA compliance, in its roll providing accommodation support services to students, including ADA specialized classroom and learning technology.

Technology Plan's Guiding Principles

Guiding Principles

As the reach of technology expands into to every aspect of the student experience at Mission College, the Technology Committee consensus is that the Principles and Goals of the use of technology should focus on student outcomes, student success, and student retention.

From this, the Committee developed **five** guiding principles that give dimension to these areas of primary focus.

1. **Enrich** and **Support** the teaching and learning experience by providing comprehensive, innovative, future-focused, accessible, and secure technologies for students and faculty in classrooms and laboratories.
2. **Empower** faculty, staff, and students to use technology by providing reliable, intuitive systems, up-to-date hardware and software, training, and support.
3. **Maintain** a significant technology-enhanced distance-learning program by providing high-quality training, technology, and support.
4. **Provide** technological access to information using the most efficient and effective technologies available to foster student, faculty and staff knowledge, capability, awareness, and citizen engagement.
5. **Promote** creative, flexible, adaptable campus design when planning instructional technology during reconstruction of existing learning spaces and construction of new buildings.

Planning Goals

Technology Goals for FY19-23:

Goal #1: Provide and support comprehensive and emerging technologies for students and faculty in classrooms and laboratories

Objective 1.1*: Maintain current baseline standards by upgrading Mission College instructional labs and classrooms according to the four year ETRIS plan. (GP1)*

Objective 1.2*: Provide high quality technical support for the instructional computers, presentation and interactive technologies throughout the campus. (GP1)*

Objective 1.3*: Maintain high-performance instructional servers.*

Objective 1.4: *Implement emerging technologies for students and faculty in classrooms and laboratories based on yearly research, review, and technology request processes (GP1/5)*

Objective 1.5*: Advocate for support and services at the District level:*

Objective 1.6: *Maintain accessibility, and whenever possible incorporate the principles of universal design, to instructional and administrative technology throughout the campus based on federal standards for accessibility, i.e., Section 508 of the Rehabilitation Act of 1973 and SB 105 Standards for Educational & Information Technology products and services. (GP1)*

Goal #2: Maintain a significant technologically enhanced distance-learning program.

Objective 2.1*: Create and maintain an Instructional Designer position to guide faculty & Staff in the use of innovative technologies for collaboration and knowledge management.*

Objective 2.2*: Implement and acquire high-quality software and tools that enhance distance learning and teaching, based on yearly research, review, and technology request processes. (GP3)*

Objective 2.3*: Promote the effective use of distance learning technology to enhance the learning and teaching experience for faculty and students. (GP3)*

Objective 2.4*: Provide training for faculty on distance learning technologies including how to use the technology, how to design instruction, and how to conduct mediated learning based on best practices. (GP3)*

Goal #3: Empower faculty and staff to use technology.

Objective 3.1*: Utilize the Instructional Designer to assist in guidance for faculty & Staff in the use of innovative technologies in collaboration and knowledge management. (GP2)*

Objective 3.*2: Maintain a reliable up-to-date learning management system. (GP2)*

Objective 3.3*: Provide high quality technical support for faculty and students that use the Learning Management System. (GP2)*

Objective 3.4: *Provide training on office applications, and District-wide software. (GP2)*

Objective 3.5*: Advocate for support and services at the District level:*

***Objective 3.5.1**: Expand unified academic support technology: class scheduling, grading, on-line testing/proctoring; anti-cheating. (GP2)*

***Objective 3.5.2**: Revise Faculty office computer standard to dual monitors with docking station plus portable computer with interactive technology to enable use of the same device in office and classroom. (GP2)*

***Objective 3.5.3**: Transition and maintain, where appropriate, employee processes and documents to an electronic and/or online format. (GP2)*

***Objective 3.5.4**: Provide high quality and professional technical support services for computers on the administrative network. (GP2)*

***Objective 3.5.5**: Maintain a four-year Equipment Replacement Plan and Baseline Standards for faculty and staff computers and software. (GP2)*

Goal #4: Optimize technology to deliver effective support for programs and services to students, faculty, and staff, with an emphasis on sustainability.

***Objective 4.1:** Maintain an informative, accessible and compelling Mission College website. (GP4)*

***Objective 4.3**: Leverage the use of technology in the College's marketing and public relations activities and plans. (GP4)*

***Objective 4.4**: Address the growing BYOD needs: device charging; classroom connection/integration; technology guidance. (GP1/GP4)*

***Objective 4.5**: Incorporate digital way-finding into all building/landscape designs. (GP5)*

***Objective 4.6**: Expand use of technology to deliver library and information resources to users on and off campus. (GP4)*

***Objective 4.7**: Implement unified room-use management system: room attributes, scheduling, activity information, booking requests, way-finding, ACAMS integration. (GP2/GP4/GP5)*

***Objective 4.8**: Advocate for support and services at the District level:*

***Objective 4.8.1**: Maintain high-performance administrative servers. (GP2/GP4)*

***Objective 4.8.2**: Utilize technology to deliver student services online. (GP2/GP4)*

***Objective 4.8.3**: Create and maintain, as appropriate, electronic storage and filing systems for the College. (faculty and staff) (GP2)*

***Objective 4.8.4:** Ensure that all faculty, staff and students have access to reliable and user-friendly enterprise technologies. (GP2/GP4)*

***Objective 4.8.5:** Enhance reliable email & calendar system for faculty and staff with increased email storage. (GP2)*

***Objective 4.8.6:** Establish reliable email & calendar systems for students. (GP2)*

***Objective 4.8.7**: Maintain a high performance wireless network service (Wi-Fi) throughout the College. (GP5)*

***Objective 4.8.8**: Improve efficiency and effectiveness of services by deploying "Low Touch" support service-management tools. (GP1)*

Goal #5: Identify and foster partnerships with technology organizations to keep the *College* at the forefront of technological advances.

***Objective 5.1**: Develop partnerships to identify emerging technologies, implementation strategies, and opportunities to utilize technology to improve quality and efficiency in College operations. (GP1/GP3/GP5)*

***Objective 5.2**: Develop partnerships to identify emerging trends and industry needs in technology for enhancement of programs, curriculum, and services. (GP1/GP3)*

***Objective 5.3:** Ensure priority consideration of technology within the facilities and infrastructure planning for all instructional areas, specifically classrooms and computer labs. (GP5)*

Goal #6: Ensure efficient and effective use of technology through planning.

***Objective 6.1**: Optimize College management structure to centralize effective tech planning, deployment, and maintenance, through a dedicated Office of Technology or some equivalent.*

***Objective 6.2**: Maintain an ETS presence in all campus building refurbishment, remodeling, or new building planning & construction: master planning, architect selection, facility design, user input; IT and A/V design review & installation punch and commissioning.*

***Objective 6.3**: Advance the development and adoption of the Technology Request Process (TRP).*

***Objective 6.4**: Develop a process to make sure grant related technology requests are institutionalized to reflect TCO, Tech Refresh and planning.*

***Objective 6.5**: Maintain an annual review process for the Technology Master Plan to continually address the current and future instructional needs of the College.*

***Objective 6.6**: Regularly assess Technology Committee structure, participation, mandate, and purpose*.

***Objective 6.7**: Advocate for support and services at the District level:*

Objective 6.7.1**: Refine District Purchasing processes to integrate with technology planning and technology request processes for improved efficiency, coordination, and effectiveness**.

***Objective 6.7.2**: Establish District Purchasing Vendor certification and qualification standards to assure baseline construction quality for reliability, functionality, and effectiveness.*

Objective 6.7.3**: Coordinate with District and WVC technology departments to implement district hardware and software standards (where possible) to improve reliability, serviceability, service efficiency, and user experience consistency**.

***Objective 6.7.4**: Retain A/V and/or IT design consultant services for planning and construction review.*

Appendices

Appendix A:	Acronyms
Appendix B:	Goals/Objectives: Fiscal Year 2018-2019 Review
Appendix C:	Emerging Trends
Appendix D:	Educational Technology Baseline Configurations
Appendix E:	Mission College Technology and Implementation Process
Appendix F:	Integrated Budget Allocation and Program Review Process

Appendix A: ACRONYMS

ADA: Americans with Disabilities Act

ASC: Academic Support Center

CBAC: College Budget Advisory Committee

DBAC: District Budget Advisory Committee

DSPS: Disabled Students Programs & Services

EFMP: Educational & Facilities Master Plan

ESL: English as a Second Language

ETRIS: Educational Technology Refresh Inventory Schedule

ETS: Educational Technology Services

GAP: Governance & Planning Committee

IBAPRP: Integrated Budget Allocation & Program Review Process

IS: District Network & Information Technology Services

LRC: Learning Resource Center

MDM/EMM: Mobile Device Management/Enterprise Mobility Management

STEM: Science, Technology, Engineering, Math programs

TCO: Total Cost of Ownership

TRP: Technology Request Process

VDI: Virtual Desktop

Appendix B: Goals/Objectives: FY 2018-2019 Status Review

Tech Master Plan Redesign:

During Accreditation Self-Study discussions in Spring 2017, discussion turned to the functionality and effectiveness of the 2014-2018 Technology Plan. This was a timely anniversary to consider a major re-imagining of the Plan. The consensus was that the plan had too much the appearance of a project management document, with no backing managerial team with the role to implement and monitor the proposed projects. Instead, the plan should be a Technology Master Plan document, visioning development of instruction-supporting technology and providing guidance and standards as a reference and benchmark for use during the technology request and implementation process that is part of the Technology Request process (TRP), the Integrated Budget Allocation & Program Review Process (IBAPRP), and the Technology Refresh process (ETRIS). This restructuring and rewrite of the Technology Master Plan has occupied Fall 2018, and Spring/Summer 2019. This document represents the final drafting done in Spring 2019. (**obj 6.3**)

Technology Committee Structure:

Lack of participation last year, beyond a core, sub-quorum group of dedicated members, has compromised effective committee function. With the passing of heavy focus on accreditation, interest in committee participation has waned.

The committee was founded to give faculty voice in the direction of technology support for instruction in the classroom. As technology has grown in influence in every facet of student instruction and support, the committee membership has widened to include support services personnel as well. Committee functions evolved from a simple Academic Senate advisory role to include tech surveys, tech master planning documents, technology Program Review request prioritization, and finally the addition of Accreditation documentation. The committee advanced from advisory to standing, with reporting shifting to Governance and Planning (GAP). This shift, and the end of the accreditation focus, has coincided with an exodus of faculty participation in Tech Committee meetings. Remaining participants are reflecting on the future look, structure, and reporting of the committee, and how to rebuild an active, effective body.

The Tech Committee currently has three core activities that offer faculty voice, and depend on faculty input: management/development of the Technology Master Plan; management/analysis of the annual Faculty and Student Technology Surveys; review of technology project requests during the Program Review process and the emerging technology project request process.

The committee has a role in the Program Review/Tech Request cycle. But without faculty presence at meetings, the larger committee had no input into project approval and prioritization, other than through contact with the ETS department, which has a central consultation role in the review process and has representatives on the Tech Committee.

The committee cannot continue its present course. This is not a viable option. The first order of business is to reconsider the structure of the committee. Will it remain a standing committee under GAP, be reduced to a taskforce/task specific basis, merge with the Distance Learning committee, or…? The reorganization of TC is under consideration in concert with restructuring of GAP as the Mission Advisory Council (**obj 6.4**)

Technology Management Processes:

Over the last two years, significant attention has been paid to refining and institutionalizing technology management and technology development processes.

ETRIS: A formal systematic process has been approved and implemented to inventory, schedule replacement intervals, and maintain refresh budget for all instruction related campus technology, under the management Educational Technology Services (ETS). This presents a clear picture to Finance and the Board of projected budget needs to maintain current, functional technology support in the classroom. (**obj 1.4**)

TRP: As part of the Program Review process, departments list instructional needs that may be addressed with classroom technology. They can request specific technologies. This triggers consultations and reviews that refine the requests and appropriate solutions in the context of best practices and campus or District standards. An Emerging

Technology path allows review of requests that arise outside the Program Review cycle window. Projects flow through review, revision, approval, prioritization for scheduling, and budgeting.

As the Program Review is at its core a self-study review of Department activity and effectiveness, there is Dean's level reconsideration of the entire Program Review process, with the potential of disengaging the technology request process, so that the two processes can escape limitations imposed by their linkage. (**obj 6.2, 6.4**)

District Purchasing, Vendor/Contractor Standards, Technology Project Design Standards:

Technology project construction management has been under-performing for years, and has become a critical issue as the pervasiveness of classroom technology increases and construction of new, replacement, and renovation projects has grown exponentially. We must deal with poor design, finish quality, missed deadlines, and the maintenance and performance/reliability headaches that result. Representatives from District and the two sister Colleges have been collaborating on creating a suite of processes, standards, and robust bid and performance documentation standards aimed at addressing these issues.

In Spring 2018, the District Board approved District-wide standards for classroom technology project bid solicitation, purchasing, vendor/contractor qualifications/certifications, installation /commissioning requirements, and technology system platforms. Working within a single manufacturer's system of devices simplifies design/ interoperability/ maintenance/ troubleshooting/ technician training/ knowledge base, reduces necessary spares stock, and reduces classroom down-time. Carefully written bid and qualification specifications reduces shoddy workmanship, and disputes over expectations of function and finish. Maintenance headaches are reduced, down the line. (**obj 1.7.1**)

Banner Roll-out:

In 2016, the District selected Banner as the enterprise data management system to replace Datatel. User consultation and system module design is on-going. Financial and Payroll modules were first on-line. Student modules followed Fall 2018/Spring 2019. Intensive training is in place for all staff **(obj. 3.3.4, 4.7.3)**

Online Services for Students and Staff:

Portal: The District Portal has been completely revised and expanded as the gateway to new Banner Enterprise Data Services. Combined with Accessibility Standards compliance, the District-wide single-sign-on user name/password initiative, roll-out of student email accounts, and adoption of Microsoft Office 365/ One Drive platform, the District now provides a robust, expansive suite of conveniently accessible student and staff services. **(obj. 3.3.3, 4.2, 4.7.4, 4.7.5)**

Student Email Accounts: After a two-year study of feasibility, the District under the Chancellor's leadership has proceeded with an implementation plan Fall 2018. An introduction to the new service benefits will be broadcast to enrolled students in October 2018, after piloting a limited release of a draft introduction email. Full announcement followed a week later, with the target of the November registration period for Winter and Spring 2019 classes. Student email accounts enhance access to student services, communication with instructors, and access to benefits such as College Buys software and hardware discounts, and Office 365 applications.

Website: After a two-year user survey and development process, a completely redesigned Mission website has been rolled out. Focus and content has been coordinated with Portal content and services. Navigation paths are tailored to outreach, new students, existing students, and faculty/staff. It is designed to meet current multi-platform/device and accessibility standards. It adds a new live chat help service. **(obj 4.1, 4.2)**

Outreach Marketing:

Focus has increased dramatically on social media presence and services to new and continuing students. The website is new and robust, with services such as 'Ask.missioncollege' (intelligent response), SnapEngage, live chat with student ambassadors, College Central, 'jobs.missioncollege' (jobs website), Event Calendar with RSS feed, Rave (campus alerts).

Social media channels: Twitter, Facebook, Instagram (also integrated in our website)

Outreach: Constant Contact (email service to market)**,** Slick Text (texting service to market)

Media Outreach: YouTube; Google Ad Words; Pandora; Radio; CBS and Metro Eblasts

Analytics; Google Analytics; Crazy Egg, heat map; Social media analytics. **(obj. 4.3)**

Accessibility:

A District wide task force has been organized in 2018 to manage ADA compliance in digital services, website and Portal, media delivery, distance learning, and technology hardware and, especially, software purchasing. The District compliance officer manages the task force, among other compliance duties. Campus level compliance agents review purchase requests for software. Campus DSPS offices act as watchdogs and consultants on campus facilities planning, design, and construction. **(obj. 4.2)**

Distance Education:

Online courses and online/ face-class hybrid courses support is managed by the Distance Education Committee, reporting to the Academic Senate. The committee acts as a clearing-house for online faculty resources, training, and standards. The committee explores and promotes simple production tool standards, such as ScreenCast-O-Matic, online course security, such as Proctorio test proctoring, and Zoom conferencing platform for chat/office hours/group collaboration and remote presenter webinars. The Committee works closely with the Technology Committee and Education Technology Services department to coordinate and consult on technology development in the classroom. **(obj. 2.1, 2.3, 4.7.2)**

Campus Digital Signage and Way-Finding:

Since 2013, the College has adopted SCALA as the support platform for digital information displays on campus, including a large entry digital billboard and distributed information displays in hallways and gathering areas in all recent construction. The platform allows locally managed, location specific information display, as specific and diverse as wait-area informational content or Café menu displays. A pilot interactive way-finding display is located in the main lobby of the Student Engagement Center building (houses student services, classrooms, tutorial, open computer labs).

Ultimately, way-finding can provide interactive route guides to selected locations, and interface with course schedules, room assignments/room schedules. The system can integrate with emergency notification processes, with granular control of location specific notifications. **(obj. 4.5)**

Campus Construction:

The College is 5 years into a 15 year building initiative that will have replaced or remodeled 100% of the original campus facilities. The Gillmor Center classroom and lecture hall facility is the first building to pilot the basis of the current classroom technology standards. The Viso Kinesiology and Human Performance building utilizes dance and fitness studio specific technology, but uses hardware from within the Extron universe for compatibility with campus A/V standards. The Student Engagement Center is a student services facility with tutorial, open labs, and classroom floors, representing an extension and refinement of the standards first applied to Gillmor. Several Gillmor classrooms have already been refitted with dual-screen, multi-image systems, matching the updated SEC baseline standard. This transition will continue in Gillmor with the upcoming Tech Refresh cycle in 2019-2020. Single screen systems will be used only in classrooms dedicated to academic programs with very specific single screen requirements, or smaller spaces that cannot accommodate a full dual-screen system.

With the SEC opening, all classrooms and services once housed in the college's Main Building have been replaced, and April 2018 saw the closure and start of Main Building demolition to make way for the MT portable classrooms replacement building and a new campus Quadrangle with outdoor teaching and study retreats, a sunken garden, amphitheater stage, and a community event plaza. Construction on the Quad and the Business & Technology Building (MT Replacement Building) begins June, 2019.

Pre-standard systems remain only in 20 temporary modular classrooms and 4 science building classrooms. The modular rooms are scheduled to be decommissioned in three years with the opening of the future Business & Technology Building. The building design will be finalized Winter 2018-2019, with construction to begin Summer 2019. Classroom design will be a further refinement of the SEC standard, with emphasis on furniture and technology elements that facilitate flexible arrangements and collaboration. The emphasis will be on portable collaboration technology and soft sharing solutions such as the Zoom conferencing platform, rather than on dedicated, complex, hardware-technology-heavy classroom infrastructure, which limits deployment to only a subset of classrooms due to

expense, tends to be maintenance intensive, and is underutilized because the resource use is not restricted to specific departments/faculty requesting the capabilities and trained in use of the technologies.

With the passage of a new Bond Measure, remaining new construction or reconstruction projects include:

STEM Center – new Sciences, Engineering focused classroom/lab building

Performing Arts – Dance/Music/Film Theater

Science Building Retrofit – repurpose for Early College Program classrooms, administrative and community engagement services

Telecommunications Retrofit – relocate Educational Technology Services workspaces and repurpose rooms as meeting spaces to complement the existing presentation hall and videoconference/media studio

Campus Center Retrofit – update interior and reconsider the purpose of upstairs meeting/ workspaces and downstairs meeting rooms, bookstore and police station.

Library – Remodel the interior to reflect 21st century library design, use allocation, and digital library technology. Visioning sessions and planning started Fall 2018. **(Obj. 1.2, 1.5, 4.6, .6.3)**

Open Labs:

Over 60% of Mission students take advantage of campus computer resources outside the classroom, in spite of over 90% owning computers or having access at home. Mission is actively expanding open computer access after the setback 6-8 years ago of the 'Tech Center Computer Lab' demise due to budget challenges. The ASC Tutorial Center stepped in to restore some access, and expanded stations with their move to the SEC. The ASC lab provides students with access to specialized software such as AutoCad and the Adobe Suite for project work outside the classroom labs. Language Arts is creating a writing lab in the ASC classroom, and student access computers are installed in the new STEM Center, EOPS, and other student support programs.

The Library is studying the expansion of its public access computer stations, separating part of the computer station hall into a technician/help desk supported computer lab, and adding an additional computer classroom. Issues of public versus student access management, and specialty software license restrictions affect these plans, as libraries are restricted from limiting non-student related computer use or time allotment. Library computers compliment, but don't necessarily substitute for dedicated student open computer labs on campus.

Faculty Computer Standards:

District supplied computers have traditionally been divided into two management classes: office/IS managed and instructional/ETS managed. Office computers were highly standardized in terms of hardware specifications and software load-sets and admin network connection. Instructional computers were much more instructional program specific, requiring a broader selection of hardware and software. They are carried on an instructional network, isolated from the admin network for security. With the evolution of portable computers, faculty are blurring the distinction, as they want a device that they can use for presentation in the classroom and for preparation in the office. Technology advances present a potential opportunity to consolidate the faculty office computer, the classroom teaching console computer, and a portable interactive stylus presentation computer into one portable device, with docking station in the office, and wireless connection in the classroom. This concept is under consideration at the campus level (Mission Tech Committee, ETS) and district level (District Tech Committee (DISPAC)). It is contingent on device refinements/reliability, district-issued computer policy changes, and district portable device management/security. **(obj. 3.3.1)**

MDM/EMM Enterprise Device Management Software Systems:

The proliferation of classes of devices requested by Departments for classroom instruction is growing: specialized work-station desktops, tablets, stylus-interactive compact laptops. The District device management standard is intended for standardized office desktops, and is not adequate for management of a diverse population of portable device classes. In absence of movement at the District Level, ETS is proceeding on the Mission Campus with a universal EMM/MDM platform to manage all instructional computers and portable devices. **(obj. 1.3)**

Computer/Server Systems Virtualization:

Instruction server migration to virtual servers was completed in 2018. All media and instructional program specific servers are now on virtual machine servers located in the campus IS building. The only hardware servers remaining are specialized systems such as the NCAST lecture capture media server and redundancy servers. With the exception of specialized labs requiring high powered work station class computers, such as Graphics Arts, many general computer labs on campus are virtual machine devices, using basic all-in-one Dell desktops as clients.

Across the District, there are 10-15 unique VMWare accounts. Discussions have occurred over the last year to consolidate all licenses into one master agreement, with expected management efficiencies and significant negotiated cost reductions. In the 2018, West Valley Mission Community College District executed the Enterprise Level Agreement with VMware (also known as: ELA). This implementation streamlined licensing management, simplified procurement, and has yielded considerable cost savings ($2 million dollars saved over 5 years). **(obj. 1.4, 3.3.2)**

Lecture Capture:

The campus has been using the NCAST system for over 5 years. We have 5 portable systems and 5 installed classroom systems. Interest tends to be high, but use is fairly low in the classroom. We have about 10 faculty members who regularly use the system for classroom lecture recording. In the community college setting, media production tends to focus on supplemental material rather than simple class lecture recording. A large percentage of classes tend to be more hands-on, rather than traditional higher-ed lecture style. Much supplemental material is self-generated by faculty using production products such as Camtasia, or alternatives such as ScreenCast-O-Matic.

The systems see significant use for recording seminars, trainings, and events, and as live streaming systems for large event overflow.

We have infrastructure in new construction classrooms to accommodate LC deployment. But we have not expanded the number of deployed systems until demand justifies the effort. One impediment to adoption is the reliability and robustness of the system. We have been satisfied with the recording hardware, but the server end has been limited. NCAST's resources have focused on the hardware recorder end, neglecting the content management and distribution server software, as most larger institutions using lecture capture have enterprise media management tools already in place. As the recorders are reaching 5-8 years, we are seeing some hardware failures, and technology refresh interval has been reached. We are taking this opportunity to re-evaluate other options.

Members of the Distance Education Committee have been piloting use of the licensed version of the ScreenCast-O-Matic software media recording solution for media creation equivalent to the NCAST hardware recording system.

The Zoom videoconference system is also finding use as a lecture recording tool. Zoom applications are installed on all classroom instructor computers.

Combined with the robust media management features of CANVAS, the dedicated recording/media management NCAST server appears to be obsolete. Hardware streaming encoders such as the NCAST appliance or the now District standard Extron streaming appliance may remain in use for seminar/event overflow streaming and recording. **(obj. 1.2, 1.5, 2.1)**

Industry Technology Partnerships:

Extron Classroom AV Technology: An important benefit of District adoption of Extron products as District classroom instructional support equipment standards is no-cost access to Extron training, consultation, engineering, new installation commissioning services, and maintenance service support. **(obj. 5.1)**

MC2IT: An affiliated foundation was developed 5 years ago to create internship opportunities by setting up an incubator program which could match Mission students to Industry small project needs. A highly versatile tech intensive work/learn/present space was created on campus. The College concluded the foundation model was not viable, and the program was folded into Workforce and Economic Development.

The following is a list of partners with Mission College's Apprenticeship programs:

CA.gov

Cisco (Mission also offers a CISCO Network Academy certificate)

Omptech

Graniterock

IBM

NetApp

Nova Workforce Development

Palo Alto Networks

Plantonics

Synopsys Silicon to Software

Santa Clara County

V&C Solutions

VTA Transportation Authority

Work2Future Jobs

Workforce Santa Cruz County

HSI STEM Workforce Experience Coordinator.

Appendix C: Emerging Technologies

BYOD, Collaborative Screen Sharing; Collaborative Classrooms

Hardware solutions have proven to be complex technologically, un-reliable, and challenging to use -- requiring significant training and maintenance support. Growing capability of standard classrooms blur the line with dedicated 'collaborative' classrooms. Flexible seating arrangements allow grouping. Dual screen projection and stylus tablets create effective 'interactive' displays. Zoom meeting technology allows personal device screen sharing with the class. Portable displays serve breakout groups. We are trending away from dedicated hardware solutions, and deploying soft technologies that add collaboration features to all classrooms.

Zoom

We are working on expanding the number of Zoom-supporting conference rooms to 5, including Facilities Conference Room, TAV 140, SEC-354 and GC-215/315. TAV 140 and SEC 354 are "Zoom Rooms" and the GC rooms are "Zoom Enabled Rooms".
A "Zoom Room" is a Zoom-premium-software/dedicated-zoom-account/multi-screen/installed-PC/control-station-tablet solution that allows "1-Button" meeting launch between Mission and WVC-based "Zoom Rooms". The point of the Zoom Room was to make intercampus meetings support free – a user could walk in with minimal knowledge, on short notice, and initiate a meeting without needing ETS tech support to set up the room and assist making the meeting connection
"Zoom Enabled Rooms" are conference rooms with built-in Zoom-hosting PC's, webcams, single display screens, and ceiling microphones. Meetings are initiated by the organizer with a personal Zoom Pro account (acquired free through the State Chancellors Office Zoom program). This will require users have a greater level of Zoom knowledge, and be familiar with managing meeting scheduling. But tech support is reduced to first meetings for each user. No subscription expense is involved – just the initial hardware investment.

The TAV 140 response has been remarkable: the room is used for video meetings 2-3 hours a day on average (and growing). The simplicity of the interaction has been a contributor. As has the room's reliability due to the minimalist approach taken in hardware design.
Note that all 'Zoom' conference rooms are "agnostic" multi-conference-standards designs, capable of use for webinars, Adobe Connect, Citrix NetMeeting, and other web-meeting platforms. We simply default boot the room to "Zoom Room" function to avoid the need in most cases for significant tech support.

Interactive Tools:

Stylus Tablets:

Stylus tablets promise an effective solution to several long-standing classroom challenges.

Interactive projector: MC has unsuccessfully piloted systems in 6 locations. The projection image has to be small and low to be reachable by the instructor. This compromises sight lines in a college size classroom. The stylus tools are large and ungainly, and response is inaccurate and lags. It means one more software package to learn. And the instructor must face the board, rather than the students. The stylus tablet with a wireless connection to the projection system allows the instructor to show material and annotate on top of it, while facing the class. The image is reflected on the normal projection screen(s) in the room. For example, a powerpoint can be prepared with blank graphs or grids, or tables, that the instructor writes on as she demonstrates a concept. With a webcam, snapshots of a paper document make the tablet a portable doc cam. Snap a picture of a student's laptop display for instant screen share.
As of fall 2018, the Microsoft Surface is the only stylus laptop or tablet with a functional HDMI wireless dongle

that connects simply to the standard HDMI laptop source cable provided in MC classrooms. iPad Pro's would require a less convenient, and far more expensive Apple TV box to connect to the system.
Wireless Doc Cam: instructors request a portable 'doc cam' they can take to a student's desk to show a paper note or document. Instructors can use a stylus tablet to snap a photo of the document that can then be presented and annotated on the room's projection screens.

Screen Sharing:
Hardware wireless screen sharing has been disappointing: proprietary, difficult to use, compromised video quality. MC is favoring the use of Zoom meetings as a software solution. The Zoom application is installed on all classroom instructor station computers. With the advent of the State Chancellors Office Zoom standard, all instructors have access to free Zoom Pro accounts. The instructor starts a Zoom meeting, and a student with information to share, joins the meeting. A student does not need an account or installed software. With the 'share' feature, the desktop or a specific window can be shared to the instructor PC for display to the class.

Clicker Response Systems:
Several faculty members have investigated classroom interactive response systems. But to date, there has not been enough perceived utility in the typical MC classroom to research and pilot a system. It will remain on the radar.

VR and AR:

Virtual Reality:
VR may be on the far horizon, but it is not here yet as a practical teaching tool. The future in education will be driven by content/textbook publishers, as they begin to offer '3D' supplemental material. VR head gear will need to become less clumsy and expensive. It will need to be easy to sanitize. Fully immersive spaces will always be inefficient in the amount of square footage per student required.

Augmented Reality:
AR will likely impact student support and the classroom in the nearer term. It piggybacks on existing device technology, and can have immediate application in wayfinding/campus information, class schedule and location information, safety, teaching. In the classroom, again, use will be driven near-term by inventive educational content publishers, as only the larger higher-ed institutions will have the time and resources to self-publish content, at least until simple tools become more wide-spread for individual content creation.

Appendix D: Educational Technology Baseline Configurations

Important Note: All standards describe herein are dynamic and can change per technology availability and development on campus. All changes will be updated as part of the TMP yearly review.

Classrooms

Single Screen Classroom:

1. Integrated lectern/equipment rack with motorized ADA lift for standing/seated teaching function.
2. A/V hardware: touch panel, switcher, controller, audio.
3. Built-in COMPUTER with dual monitors/articulating arm stand on lift desk. Default PC source selection sends PC desktop to monitor left and extended desktop to monitor right, and extended desktop to projector screen. Default doc cam or laptop source sends screen to R monitor and projection screen.
4. ADA compliant computer station(s).
5. Wireless Clicker/Remote
6. 1080p Document camera
7. 120" (min) motorized projection screen. Independent raise/lower control.
8. 5200 lumen (min) 16:9 (or cropped 16:10) HDbaseT input projector with lens shift.
9. Wall-mounted Left/Right stereo speakers, adjacent to screen.
10. Source cables on desktop for user device: Ethernet, HDMI, Mini DisplayPort, USB-C
11. Lighting: ceiling suspended light bars need to drop less than 10" below suspended ceiling to prevent shadows in projection image cone. Lighting controls must have a switch or preset turning off all light units within 10' of teaching wall to prevent room light spill on projected images.

Dual Screen Classroom:

1. Integrated lectern/equipment rack with motorized ADA lift for standing/seated teaching function.
2. A/V hardware: touch panel, matrix switcher, controller, audio.
3. ADA compliant computer station(s) access.
4. Built-in COMPUTER with dual monitors/articulating arm stand on lift desk. Basic mode PC source selection sends PC desktop to monitor left and extended desktop to monitor right, and extended desktop to audience left/right projector screen. Other single screen sources send screen to R monitor and audience L/R projection screen. Advanced control interface on touch screen controller allows independent, selectable routing of sources to left and right monitor and audience left and right screen.
5. Wireless Clicker/Remote
6. 1080p Document camera
7. 100" (min) motorized projection screens. Independent raise/lower control.
8. 5200 lumen (min) 16:9 (or cropped 16:10) HDbaseT input projector with lens shift.
9. Wall-mounted Left/Right stereo speakers, adjacent to screen pair.
10. Source cables on desktop for user device: Ethernet, HDMI, Mini DisplayPort, USB-C
11. In rooms requiring speech reinforcement, Lavalier mic/belt pack, wireless mic receiver, in-ceiling distributed speakers (70-volt), ALS system.
12. Lighting: ceiling suspended light bars need to drop less than 10" below suspended ceiling to prevent shadows in projection image cone. Lighting controls must have a switch or preset turning off all light units within 10' of teaching wall to prevent room light spill on projected images.

Classroom Computer Labs

Dual Screen Hide-away Lab (Physical or Virtualized):

1. Integrated lectern/equipment rack with motorized ADA lift for standing/seated teaching function.
2. A/V hardware: touch panel, matrix switcher, controller, etc.
3. ADA compliant computer station(s) access.
4. Built-in COMPUTER with dual monitors/articulating arm stand on lift desk. Basic mode PC source selection sends PC desktop to monitor left and extended desktop to monitor right, and extended desktop to audience left/right projector screen. Other single screen sources send screen to R monitor and audience L/R projection screen. Advanced control interface on touch screen controller allows independent, selectable routing of sources to left and right monitor and audience left and right projection screens.
5. Wireless Clicker/Remote
6. 1080p Document camera
7. Motorized hide-away dual computer station student desks, with instructor remote control.
8. All-in-one student computers.
9. 100" (min) motorized projection screens. Independent raise/lower control.
10. 5200 lumen (min) 16:9 (or cropped 16:10) HDbaseT input projector with lens shift.
11. Wall-mounted Left/Right stereo speakers, adjacent to screen pair.
12. Source cables on instructor desktop for user device: Ethernet, HDMI, Mini DP, USB-C
13. In rooms requiring speech reinforcement: lavalier mic/belt pack, wireless mic receiver, in-ceiling distributed speakers (70-volt), ALS system.
14. Lighting: ceiling suspended light bars need to drop less than 10" below suspended ceiling to prevent shadows in projection image cone. Lighting controls must have a switch or preset turning off all light units within 10' of teaching wall to prevent room light spill on projected images.
15. Floor box locations match furniture layout

Student Support Services: Labs

ASC, DSPS, Library, CC, Valor

1. Mission College has a number of special labs established for unique student services. These support instruction, but are generally not full classrooms.
2. The exception is the language Labs, which expands the standard classroom computer lab with software interactive control of student computers from the teacher station, and adds additional microphone headsets and other required system devices.
3. Open access tutorial/study labs use single user desks and standard instructional lab computers. There is no teacher station or A/V equipment in these labs.
4. Collaborative labs use group tables and checkout laptops or tablets.
5. A/V hardware as required: touch panel, matrix switcher, controller, etc.
6. Visual display is dependent on size of space and user needs. LCD display or motorized projector screen and projector matching specifications of campus standards.
7. Audio hardware dependent on user needs.

Lecture Halls

Music, Presentation, Large Lecture Class

1. Integrated lectern/equipment rack with motorized ADA lift for standing/seated teaching function.
2. A/V hardware: touch panels, matrix switcher, controller, transmitters, receivers, etc.
3. 10" (min) wall-mounted touch screen control panel controlling switcher. Duplicate touch panel on room back wall.

4. Floor box connections for data, power and A/V.
5. Built-in computer with dual monitors/articulating arm stand on lift desk. Basic mode PC source selection sends PC desktop to monitor left and extended desktop to monitor right, and extended desktop to audience left/right projector screen. Other single screen sources send screen to R monitor, and audience L/R projection screen. Advanced control interface on wall-mounted touch screen controller allows independent, selectable routing of sources to left and right monitor and audience L/R projection screens.
6. Source cables on desktop for user device: Ethernet, HDMI, Mini DisplayPort, USB-C
7. Rack Aux In panel: HDMI, USB-C, 1/8" audio. 1/8" audio direct to DSP, always active.
8. Rack Aux Out panel (for recording/ lecture capture): HDMI sources out; Room Camera out; RCA program audio out (combined source/mic).
9. Wireless Clicker/Remote
10. 1080p Document camera
11. HD PTZ video camera, rear wall or ceiling pole mounted. Controlled via room touch panel.
12. Audio output processed: Amp 1: Front L/R; Amp 2: L/R delayed mid hall; Amp 3 Center front/ middle.
13. 140" (min) motorized projection screens. Independent raise/lower control.
14. 8500 lumen (min) 16:9 (or cropped 16:10) HDbaseT input large venue laser projector with lens shift, long throw lens.
15. Three wall-mounted speakers, L/R/C, adjacent to screens. Two mid-hall delayed secondary speakers. Theatrical lighting: assuming approximately 15' x 45' 'stage' area. 5 LED PAR downwash, 6 LED Fresnel, 2 LED spot. Note: Arrange acoustical ceiling treatment to nest front of house Fresnel/spot electric into ceiling for appearance purposes and to clear fixtures above projection cone from projectors to screen.
16. Lighting control board that communicates wirelessly from AV rack closet.

Conference Rooms

Huddle Room / Collaboration Study Room with LCD Display

1. Source cables connected to a wall plate for user devices: HDMI, Mini DisplayPort, USB-C
2. Audio through display internal speakers or external sound bar.
3. Large format display(s), 1080P or higher, HDMI, DisplayPort, RS32 communication.
4. Touch or button panel with built-in controller

Conference Room with LCD Display and Table Connections.

1. A/V hardware: touch panel, switcher, controller, transmitters, receivers, etc.
2. Source cables at table for user devices: HDMI, Mini DisplayPort, USB-C
3. Audio through display internal speakers or external sound bar.
4. Large format display(s), 1080P or higher, HDMI, DisplayPort, USB-C, RS232 inputs.

Large Conference Room with Projector Display, Table Connections.

1. A/V hardware: touch panel, switcher, controller, transmitters, receivers, etc.
2. Source cables at table(s) for user devices: HDMI, Mini DisplayPort, USB-C
3. 100" (min) motorized projection screens. Independent raise/lower control.
4. 5200 lumen (min) 16:9 (or cropped 16:10) HDbaseT input projector with lens shift.
5. Audio dependent on space and user needs: ceiling speakers or screen wall mounted.

Video Conference Rooms

1. Defined as point-to-point video and audio conference meeting technology. This is a unique use, separate from internet Webinar interactive seminar software systems such as Adobe Connect, or Citrix GoToMeeting.
2. The District standard is Zoom, replacing Skype and the abandoned State Chancellors Office Tandberg-

based standard. Zoom is now a supported standard at the Chancellors Office level.

3. All District employees can open a Zoom Pro account through the Chancellors Office. Any computer, classroom or office, can be used (if webcam/microphone equipped) to host or participate in a Zoom meeting.
4. In addition, several conference rooms have been equipped with hardware and Zoom accounts held under a District Zoom license for use as dedicated videoconference rooms, requiring minimal knowledge of the Zoom system to host or participate in a Zoom meeting.
5. Two levels of hardware systems are in use: Zoom-enabled Rooms; Zoom Rooms.

Zoom Enabled Room:

1. In addition to standard conference room equipment, the Zoom enabled room features a rack mounted PC that runs the meeting software automatically and allows user control via mouse and keyboard.
2. Dedicated Dell mini COMPUTER with wireless keyboard and mouse. 8GB/128GB.
3. Microphones dependent on space and user needs: ceiling mounted array or tabletop.
4. DSP/Mixer for automatic microphone level controls.
5. PTZ camera with user control via remote.

Zoom Room:

1. In addition to standard conference room equipment, the Zoom Room features a rack mounted PC that only runs the Zoom Room software
2. A touch panel linked to the Zoom Room account controls the Zoom meeting. These rooms have a dedicated Zoom Room account held under a District Zoom License (not covered under the Chancellors Office state license). An additional $500 per year license fee per room applies.
3. Dedicated Dell mini COMPUTER with wireless keyboard and mouse. 8GB/128GB.
4. 10.5” iPad Zoom control panel device.
5. Preferred displays are two large LCDs but depending on size of space and user needs other options are available.
6. Microphones dependent on space and user needs: ceiling mounted array or tabletop.
7. DSP/Mixer for automatic microphone level controls.
8. PTZ camera with user control via touch panel.

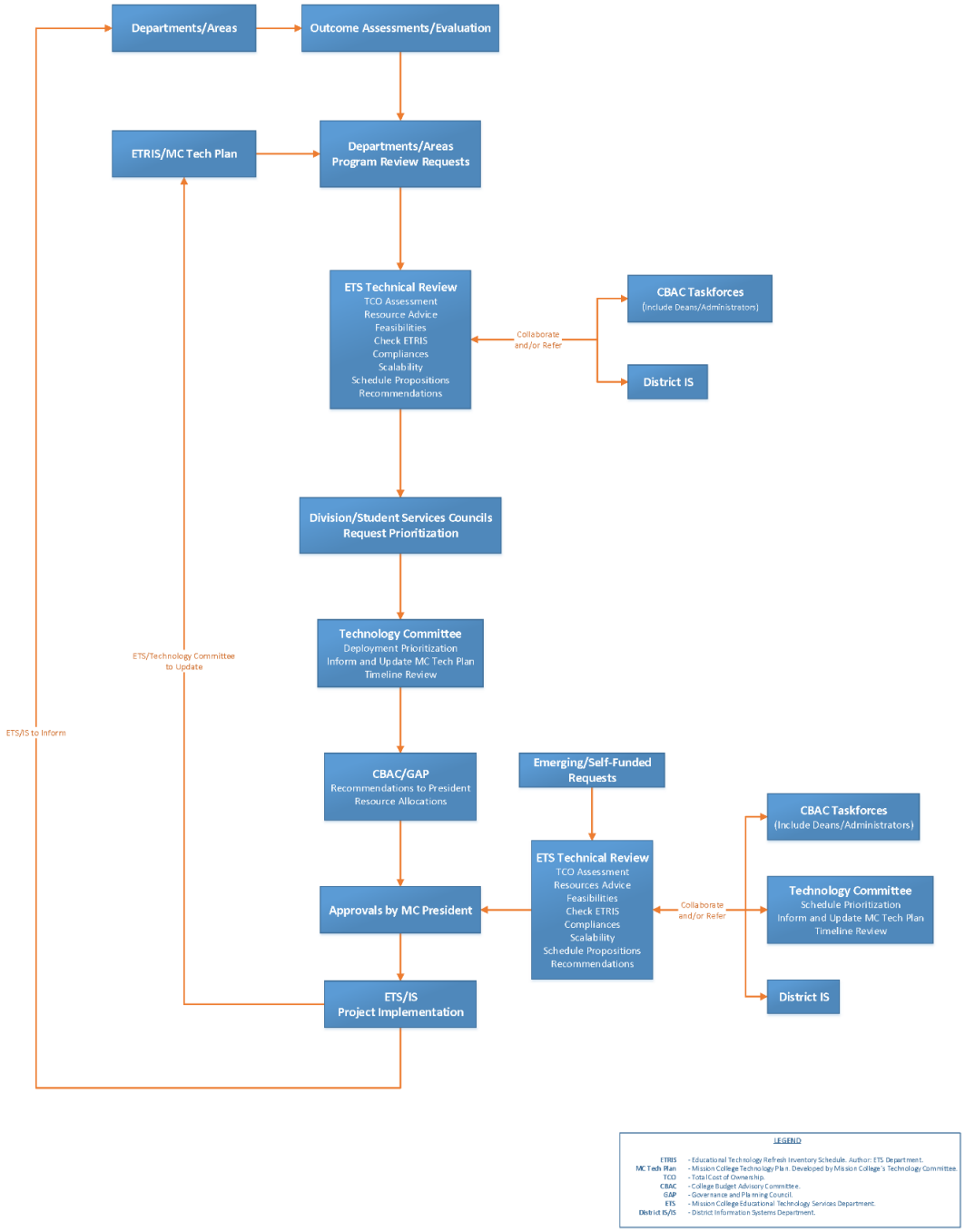
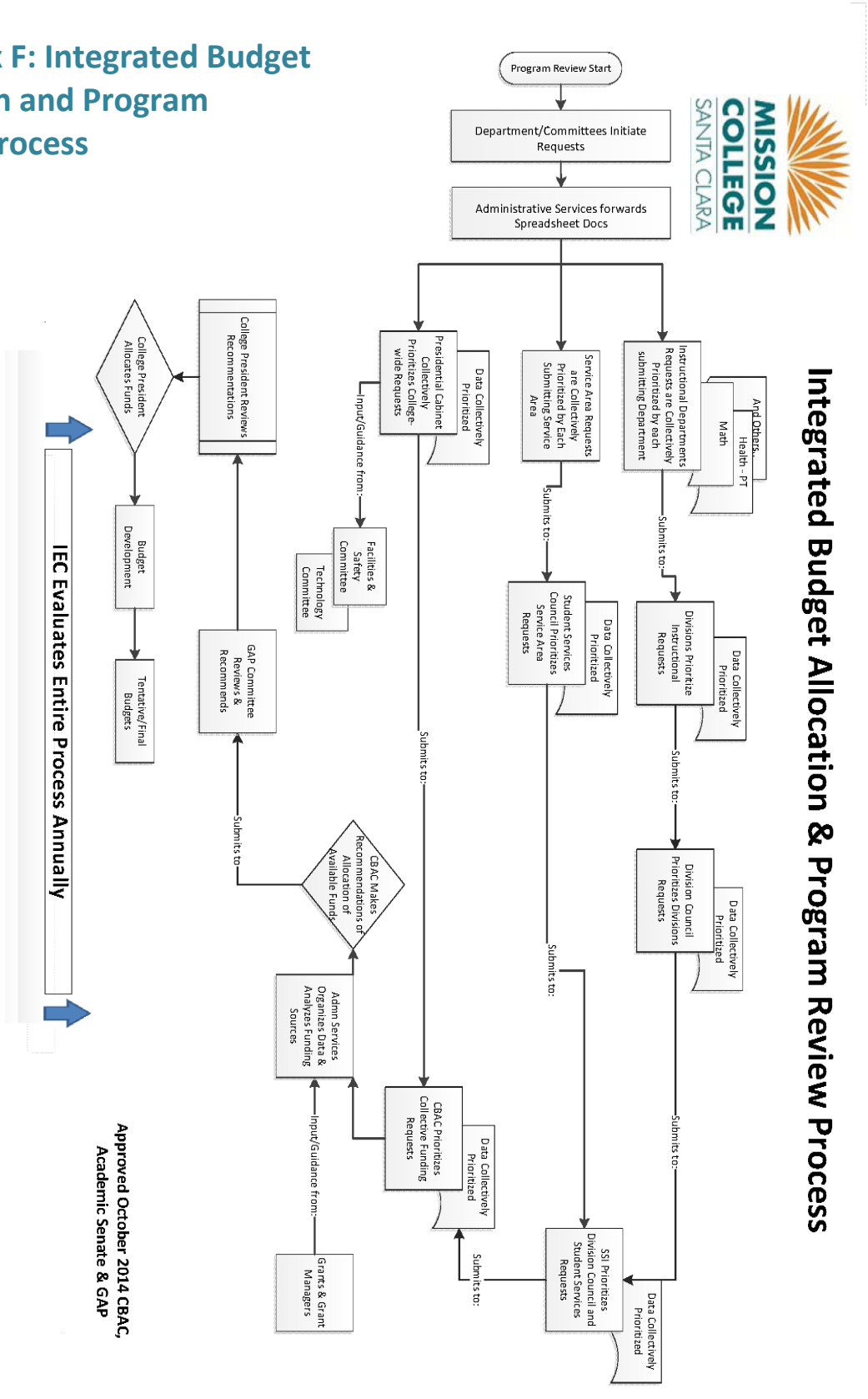
Lecture Capture Classrooms

1. Current standard is NCAST hardware and media management software.
2. LC support infrastructure is included in all new classroom construction.
3. Systems are installed in 5 classrooms, and 4 portable systems are available for deployment.
4. Classroom system includes: NCAST Presentation Recorder: two simultaneous inputs plus audio combined in a single two-window .MP4 file. Upgrade Recorders can record two simultaneous streams for flexible arrangement of PIP windows during playback. Local 7” confidence monitor. 4x2 audio mixer. Revolabs HD Solo rack mounted microphone receiver; Revolabs HD Solo clip on wireless mic. HD PTZ HDMI conference video camera.
5. Recorder is connected to camera, audio mixer, and instructor COMPUTER.
6. Cart based system uses the same hardware, with cables to connect to a local COMPUTER (laptop or instructor station), and network.
7. Recorder is controlled via network and COMPUTER browser interface, from any local laptop or the instructor station COMPUTER.
8. Media management, storage, and playback is handled with a dedicated server, the NCAST Presentation Server.
9. Recordings can be edited, deleted, captions added, metadata changed (for search filtering), and prepared for viewing.
10. A separate program provides a portal for viewing, with episode listings, search, filtering, and playback through a proprietary browser plug-in. The episodes are downloadable in a standard .MP4 format.

Appendix E: Mission College Technology Request Process

MISSION COLLEGE TECHNOLOGY REQUEST PROCESS

Approved – 02/09/2016



Appendix F: Integrated Budget Allocation and Program Review Process