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Purpose, Mission and Function of the Technology Master Plan
The Foothill College Technology Master Plan creates the foundation for college-wide decision making and goal setting for technology planning, purchases, implementations, and policy-making. Through the input of college program reviews and the resource request process, the plan also identifies college priorities for technology purchases and implementations. This information then informs the Foothill-De Anza Community College District Technology Plan.

The Mission of the plan is to improve student learning, engagement and retention and organizational innovation, entrepreneurship and efficiency, through the use of technology. The Technology Plan is an integral part of both the Foothill College Integrated Planning and Budget Process and the Foothill De Anza Community College District Master Plan. The plan is informed by program review plans completed at Foothill College and through the shared governance process of the Tech Task Force, and the Planning and Resource Council (PaRC).

As a community of scholars serving a diverse population of students, Foothill College uses technology to provide access to outstanding educational opportunities, to facilitate access to services and resources and to support and improve student learning and success. The technology plan describes how we use technology to support our goals as defined by our college mission.

The technology plan outlines our planning process for technology purchases and acquisitions, our way of assessing the technology needs of faculty and students to support learning, and identifies how we support faculty and students through training and in the use of the technologies the college and district adopt and support.

Understanding that predicting future technology needs is an imprecise science due to the quickly changing nature of the industry, we endeavor through this plan to position ourselves to meet the needs of the future, in terms of emerging trends and new technology.

Vision and Goals for 2010-2015

Foothill College begins its technology plan with the following vision and goals for 2010-2015. Understanding that this plan is intended to provide a general framework for defining institutional planning and organization around technology, we seek outcomes that improve student learning and improve our overall college operations. Through the processes and activities outlined in this plan, we seek to accomplish the following goals in the next five years:

Technology Goals for Foothill College 2010-2015:
- Deploy technology to create a more dynamic learning environment;
- Meet students' expectations for access to informational resources, the Internet and support for computing devices;
- Provide high-quality learning environments supported by technology
- Reach the leading edge of higher educational computing and technology deployment to support students;
- Offer the highest quality online learning tools/systems for students and faculty;
- Ensure all students have access to technology to provide student equity in the learning environment.

Executive Summary

The Foothill College Technology Master Plan 2010-2015 defines how technology is integrated with college-wide planning processes, how the college makes decisions around technology purchases and implementations and how the college uses technology as part of a high-quality learning environment, to support student achievement and student success. This plan is a component of the Foothill College Educational Masterplan, and of the Foothill-De Anza Community College District Educational Technology Services (ETS) Master Plan.

1. Introduction: Foothill's goal of leadership in technology innovation in higher education and vision for the role of technology in supporting an innovative and inspiring learning environment for students--Our past accomplishments, current initiatives and goals for the future.

2. The integration of technology planning and decision making into the Foothill Strategic Planning Process--The Tech Task Force and its role in the integrated planning model at Foothill College. How program review and institutional planning form the basis of college priorities for technology implementations, acquisitions and initiatives. The role of the District technology organization and how it supports college activities, and how the college interacts with and informs district priorities.

3. Technology and its Role in Supporting Student Learning at Foothill College. Distance Education and the Foothill Global Access program.

4. Infrastructure and Organization: How Foothill creates and maintains a technology infrastructure that is consistent, safe, and reliable.

5. Training: how Foothill and the District technology organizations train its students, faculty and staff on the technology it supports.

6. Assessment: How Foothill College ensures that technology needs of students, faculty and staff are identified and met through surveys, program planning, SLOs, AUOs and other methods.

7. Priorities and Positioning for the Future: A brief overview of current project priorities and how we position our college to meet the needs of the future.

1. Introduction and History

Since its founding in 1957 with the mission of "Educational Opportunity for All", Foothill College has sought to create a new standard in community college higher education. Located in the heart of Silicon Valley, several miles from Stanford University and techno-historical sites such as the Palo Alto garage where Bill Hewlett and Dave Packard founded HP in 1939, Foothill College has always included technology as an integral part of the learning and teaching environment. In 1995, Foothill College faculty member Michael Loceff, authored the first online class taught in the California community colleges, Programming in C++. Later, Loceff would help create Foothill's own course management system, Etudes (Easy To Use Distance Education System).

Through the support and innovation of Foothill faculty members, Foothill quickly became the Bay Area leader among community colleges offering online classes. Under the leadership of President Bernadine Fong, Foothill continued to innovate in course management system, in 2003 entering into a partnership in the Sakai Project with Stanford University, an open source course management platform. Foothill online classes were migrated in 2005 from Etudes Classic to Etudes-NG (Sakai platform), providing a new level of support and service to faculty and students. Under the leadership of Dean of Technology and Innovation Judy Baker, Foothill continues to offer the most robust selection of online classes among Bay Area community colleges, and through the support of the Hewlett Foundation, has emerged as a national leader in the support and development of open education resources, commonly known as open-source textbooks.

Measure C: In 2006, voters in the Foothill-De Anza Community College District approved Measure C, a $490 million bond to support new construction, renovation, and funds to upgrade district technology. The bond funds have enabled Foothill and De Anza to meet the needs of students, faculty and staff in terms of classroom technology, personal computing and technological infrastructure, in a way it never could before. As part of this funding, in 2009-10 the Foothill-De Anza Community College District was able to replace its aging enterprise resource program SIS+, with Banner, an ERP product offered by Sunguard Higher Education. The Banner implementation process continued in Fall 2010, with new registration, finance, human resource and portal systems being implemented.

In 2010, Foothill College was well positioned to meet the needs of the future as it looked to the completion of its wireless network across campus, the renovation of classrooms not completed under Measure E, the construction of the new Physical Sciences and Engineering Complex that

began in Fall of 2011 and the upgrade of existing classrooms with high-quality audio-/visual systems and instructional computing. The college updated its entire website in 2010, and has begun to include mobile computing devices in its strategy to push information to students, faculty and staff.

On November 12, 2013, the Board of Governors of the California Community Colleges awarded a $16.9 million competitive grant to a partnership of the Foothill-De Anza and Butte-Glenn community college districts to launch Gov. Jerry Brown's groundbreaking Online Education Initiative for the state of California.

Building on the existing California Virtual Campus, a launch team has begun work to develop a robust, one-stop statewide online education portal where California community college students can apply, register, and take online courses from participating colleges throughout the state. The goal of the initiative is to increase the number of California students who obtain associate degrees and transfer to four-year universities by dramatically increasing the number of online classes available to community college students and providing those students with comprehensive support services to help them succeed.

Rather than independently creating its own courses and degrees, the Online Education Initiative will provide the funding, support and best practices for all California community colleges to offer high quality courses and programs through a statewide portal and common course management system, backed with an array of student support services. An Online Education Initiative Advisory Committee representing all community college constituency groups will provide oversight for developing the initiative, with the faculty playing a primary leadership role. The state Legislature approved funding for the initiative in response to Gov. Brown's January 2013 proposal to allocate $16.9 million to increase online education in the community colleges. The California Community Colleges' Chancellor's Office developed the grant requirements and issued a competitive request in August for applications to develop and manage the project. The grant began Dec. 1, 2013. Governance committees and the permanent management team are expected to be in place by June 2014. Planning for various operational functions of the initiative will occur throughout 2014. Colleges can sign up to offer classes through statewide portal at the end of 2014 and the portal will be operating by June 2015.

Funding of $16.9 million is authorized for the first seven months of the project, through June 30, 2014, with potential funding of $10 million annually for the next four years, starting in 2014-15.

2. Technology and the Strategic Planning and Budget Process

Foothill integrates technology planning with college planning through its institutional planning model and through its primary technology-based shared governance committee, the Technology Task Force. The Tech Task force is chaired by the dean of Foothill Global Access and includes representatives from the Academic Senate and the Classified Senate. The college has a Distance Education Advisory Committee and Committee on Online Learning to address distance education specifically. The former is a shared governance committee with members who represent various campus groups. The latter is only comprised of members appointed by the Academic Senate.

In the 2009-10 academic year, Foothill College implemented a new integrated planning and budgeting model, to improve college-wide participation in the planning process and to align program review, student learning outcomes and assessment, with the decision-making and

budgeting groups on campus. The new structure includes the Planning and Resource Council (PaRC) as the ultimate authority for college planning and decision-making. The PaRC is made up of representatives from college governance groups including the Academic Senate, Classified Senate, employee unions and representatives from instructional and student services working groups such as the Basic Skills Task Force, the Transfer Advisory Committee and the Workforce Advisory Group.

2a. The Technology Task Force: How college needs are identified, communicated and prioritized and how college decisions about technology purchases, services, facilities, and hardware/software standards are made in the integrated planning model.

The Technology Task Force (TTF) is an auxiliary shared governance group that reports to PaRC and includes membership from the Academic Senate, Classified Senate, District ETS organization, administration, distance education representatives, faculty and staff technology practitioners and specialists. In addition to this college-based group, the Vice Chancellor of Technology for the Foothill-De Anza Community College District, convenes a district-level technology committee, the Educational Technology Advisory Committee (ETAC), which includes membership from all employee groups and the chairs of the TTF.

Campus technology coordination serves to deploy technology to create a dynamic learning environment; meet students' expectations for access to informational resources, the Internet and support for computing devices; provide high-quality learning environments supported by technology; reach the leading edge of higher educational computing and technology deployment to support students; offer the highest quality online learning tools/systems for students and faculty; and ensure all students have access to technology to provide student equity in the learning environment.

Under the authority of PaRC and under the guidance of the District's Education Technology Services organization, the TTF provides a forum for informing overall District technology planning, supervises and is responsible for drafting the college technology plan, decision-making and goals, and creates a forum for college decision making, planning, and vetting issues and requests for technology.

The Tech Task Force addresses the following issues and tasks on an ongoing basis:
- Individual faculty and staff computers including replacement, priorities and hardware/software standards;
- Classroom technology needs including instructor computing and audio/visual hardware standards, priorities and planning;
- College website and web technology needs; requests for new technology implementations and purchases beyond regular classroom and individual computing needs;
- College priorities related to large-scale, district-wide technology projects and implementations.

2b. How college needs for technology, and new initiatives emerge through the program planning process.

The TTF is the primary organizational element at Foothill College that is used in the identification and assessment of technology needs. It works with the district's central services technology organization, Educational Technology Services (ETS), to gain an understanding of

the full scope of technology needs and issues. ETS conducts surveys, elicits input from ETAC, and develops analyses of system performance to understand the needs of the colleges.

The college identifies, communicates and articulates its needs and requirements for technology services through the TTF. The TTF identifies technology needs by participating in and reviewing the college's strategic plan, through analysis of program plans of academic and administrative departments, and by soliciting input from its members in committee discussions.

Priorities
During the 2011-12 and 2012-13 academic years, the following projects were prioritized by the TTF:
- SARS/eSARS integration for tracking student attendance and participation
- Installation of TracDat for capturing and maintaining SLO and program review data
- Deployment of desktop virtualization in the PSEC building
- CalPERS Benefits Transition
- Clockworks (a database scheduler and an integrated management tool designed to meet the needs of Disability Resource Center services)

These priorities were communicated to the ETS organization to inform the overall district technology plan, and to the campus community, so that students, faculty and staff understand the college-wide priority for work completed in those years.

During winter and spring of 2013, Vice Chancellor of Technology, Joe Moreau updated the ETS Project Planning and Prioritization Process document with the intent of making the process more streamlined, responsive, and transparent. The process has a four-tiered approach: 1) Exploration or Mini Project; 2) Small Scale Projects; 3) Medium Scale Projects, and 4) Large Scale Projects. A technology project is defined as an activity undertaken to acquire, develop, enhance, or repair functional capabilities or services using IT components (software, hardware, or both) requiring a significant level of effort to meet objectives. A significant level of effort is defined as encompassing more than 40 hours of labor or cost more than $5,000 to complete.

1) Exploration or Mini Project
For projects that require less than a week to complete and cost less than $5,000, the requestor is asked to complete and submit a brief form. The CTO assigns the correct technical resources to that to review the request. ETS will report out at each Tech Task Force meeting on what projects have been submitted and how ETS will respond to each request.

2) Small Scale Projects
Small Scale Projects are those that take more than a week, but less than 90 days, and would cost more than $5,000 but less than $20,000. Projects of this scope would require campus leadership approval before being submitted to ETS. After receiving the approved request, it would be agendized by the CTO and his directors, based upon available time, with a response to the originator within two weeks. ETS will report out at each Tech Task Force meeting on what projects have been submitted and how ETS will respond to each request.

3) Medium Scale Project
Medium Scale Project are those that will take more than 90 days but less than 6 months, and will cost more than $20,000 and less than $88,000. Campus Tech Task Forces will be able to provide input regarding on the prioritization of these projects for their own campuses. The request would

then go to the senior administrators meeting, which meets once a month. One of the ETS directors or one of their staff would work with the requestor to do an analysis of cost, time and scope ETS will get back to the requestor in approximately 30 days with what can be done.

4)   Large Scale Projects
Large Scale Projects are those that take more than six months and are above the bid limit. Such projects will follow the project prioritization process which occurs twice yearly. The project request will go to the campus Tech Task Force for prioritization with each campus prioritizes its own requests. The prioritization list goes to ETAC to consolidate the recommendations and then goes to Chancellors cabinet for final call on prioritization.

The following projects do not fall within the scope of the ETS Prioritization Process:
Routine break / fix / moves
Computer refresh / installs
Multimedia refresh / installs
Wireless networking installs
Banner functionality improvements within original implementation project scope
Infrastructure projects (Measure C, etc.)

2b1. Defining our resource allocation model for technology and role the Tech Task Force plays in recommendations to the Planning and Resource Council (PaRC) and the Operations and Planning Committee (OPC).

In the governance structure of the college, the TTF serves as the primary channel to the PaRC, for recommendations on new technology implementations, major purchases of new technology and for policy recommendations and approvals. For instance, technology needs that are identified through individual program review documents, or technology needs that are identified through divisional program reviews, through college-wide needs discussions involving technology that occur, would first be aired in the TTF for review, feedback, investigation and recommendation to both PaRC and the ETS organization. Examples include the need for a new email system for part-time faculty. These types of requests would channel through the TTF for evaluation and recommendation to the PaRC and the Operations and Planning Committee, the budget arm of PaRC.

The TTF will work with the OPC to consult on budget issues related to technology and to receive and review any technology related resource requests that come to PaRC outside the direct channel to the TTF or that are identified in program review documents that flow through by the OPC and the TTF.

In addition, the TTF serves as a forum for monitoring the progress of ongoing technology support operations, and for ongoing implementation projects, such as routine computer updates for faculty and staff, classroom audio-visual upgrades and related standards, and the campus-wide wireless implementation. The TTF monitors and sets priorities for classroom technology updates and installations funded by Measure C, and for employee computing needs and updates, as funded by Measure C. These activities are done in concert with the ETS departments and staff responsible for servicing, purchasing and installing the equipment.

For systems and services provided by ETS, such as the district-wide network, the Banner ERP system, and other critical IT functions, the TTF communicates these needs to ETS, who works with representatives of the college to define requirements and develop solutions.

2c. Foothill-De Anza District Educational Technology Advisory Committee
Technology needs are brought forward by the TTF to the Educational Technology Advisory Committee (ETAC) committee. The ETAC committee has primary responsibility for developing a District strategic plan for technology and monitoring the ongoing implementation effort aimed at achieving the goals of this plan. ETAC is a participatory governance committee at the District level designed to be as inclusive as possible of all constituency groups (administration, faculty, staff, and students) from both college campuses and district central services.
The ETAC committee:

- Makes specific recommendations to the Chancellor's Advisory Council on the use of technology throughout the district with regard to both ongoing activities and future direction.
- Keeps informed about the current activities and future plans in each of the technology areas: Infrastructure, Information Systems, and Client Services through the appropriate ETS managers and its own subcommittees.
- Monitors the operations, special projects, and overall budget of the Educational Technology Service (ETS) staff in an ongoing effort to have a comprehensive overview of the entire technological effort in the District.
- Assess policy on matters such as intellectual property rights, appropriate use of technology, and standards.

3. Technology and its Role in Supporting Student Learning at Foothill College. Distance Education and the Foothill Global Access program.

In creating a dynamic learning environment for students and a high-quality working environment for the college community, intelligent and strategic use of technology is critical to success at Foothill College. Student learning and improving the instructional experience is at the heart of college technology deployments, from equipping classrooms with multimedia and high-speed Internet, to facilitating an interactive lecture and classroom experience, to creating the highest quality virtual classroom experience through distance education software, allowing students from across the globe to participate and earn credit in Foothill classes.

3a. Foothill College Distance Education: Foothill Global Access.
As a means to increase access to education, Foothill College has offered distance education courses for more than 15 years. In addition, it has built and maintained comprehensive instructional and student support services available for distance education students. Faculty and staff engage in iterative processes to monitor, evaluate, and improve the quality of distance education instruction and services. Foothill College's distance learning program is called Foothill Global Access (FGA). It offers a wide complement of services in support of faculty and students engaged with distance education courses.

The mission of FGA is to increase educational access for students by supporting technology-mediated delivery of high-quality instruction and providing students with a flexible, convenient, and cost-effective system for achieving their educational goals. The FGA mission aligns with the college mission by emphasizing educational access and providing students with the scheduling and logistical flexibility they need to overcome barriers to success in their educational pursuits.

Foothill College on-campus facilities reach capacity at peak hours such as 10 a.m. and 11 a.m. To increase our capacity to serve students, construction and renovation projects are under way.

Distance learning delivery of instruction provides Foothill College with a means to expand enrollment without impacting facilities on campus. The college's well-developed and successful FGA distance learning program, which has continued to expand, offers courses via the Internet using the Etudes online course management system. The number of enrollments in online courses has grown to approximately 9,713 in 281 sections in the fall of 2013 Quarter, representing more than 44 percent of Foothill's enrollment.

FGA and the Distance Education Advisory Committee

The plan to offer distance education courses was initially implemented through the creation of FGA that would support online instruction. Online course delivery began in 1996–97 and has grown steadily over the past 15 years which is consistent with Foothill's mission to provide ". . . access to outstanding educational opportunities for all of our students." (2008–09 Foothill College Course Catalog). In response to the growth of the college's online course offerings, Foothill's instructional and student support services expanded to provide the equivalent services to distance education students as are provided to on-campus students. Now distance education planning is addressed by several shared governance committees at Foothill College: Technology Task Force, Distance Education Advisory Committee, and the Committee on Online Learning.

Primarily, the Tech Task Force has been involved in planning Foothill College's distance education technology, equipment and infrastructure needs, including development and improvements to Foothill's website and online district faculty and student resources. The Distance Education Advisory Committee is the shared governance body with primary oversight of the delivery of Foothill's distance education programs. The Distance Education Advisory Committee has been primarily involved in developing a Distance Education Plan which includes establishing processes to ensure high-quality standards in online courses, and instructional and student support service. The DEAC exists as a tandem group with the Committee on Online Learning (COOL), and makes recommendations to Planning and Resource Council (PaRC), the Technology Task Force, and other shared governance groups, for vision, policies, and implementations related to distance education. The COOL is a committee of the Academic Senate. COOL engages faculty in monthly discussions about pedagogy of online courses, ensuring course quality, and course evaluations.

FGA is responsible for the assessment, planning, development, and implementation of the distance education program. The dean for FGA co-chairs the Distance Education Advisory Committee, chairs the Technology Task Force, tri-chairs the Professional Development Committee, and serves as a member of the district's Educational Technology Advisory Committee. The active involvement of the FGA dean in these Foothill College and District governance groups is instrumental in coordinating institutional efforts to meet the needs of Foothill College's distance education students and instructors.

Core values of the FGA program are to increase educational access for students by supporting technology-mediated delivery of high-quality instruction and providing students with a convenient, and cost-effective system for achieving their educational goals. Outcomes for FGA are: 1) Students will identify their readiness to learn via technology-mediated delivery such as the Internet and develop the skills necessary for success in distance learning courses; 2) Faculty will develop the skills necessary for effective technology-mediated delivery of instruction; and 3) Staff will provide technical, training, and administrative services necessary to support technology-mediated delivery of high-quality instruction. Evidence of success in achieving these goals are: 1) Students will demonstrate their distance learning knowledge and skills by

successfully completing distance education courses; 2) Faculty will demonstrate their distance instruction skills with completion of required and optional professional training and 3) Evidence of provision of services by staff will be demonstrated by steady enrollment in fully online courses.

4. Infrastructure: Creating and maintaining an environment for learning with technology that is consistent, safe, secure and reliable.

4a. How Foothill College provides for the management, maintenance and operation of its technological infrastructure.
The college and the District together provide the staffing, organization, funding, and participative governance structures necessary to ensure the effective management, maintenance, and operation of its technological infrastructure and equipment.

Staffing and Organization

Central IT: The management, maintenance, and operation of the college's technological infrastructure and equipment are primarily handled through the District's central technology organization, Educational Technology Services (ETS). ETS is organized to support the development, improvement and support of IT systems including software applications, networks, instructional computer labs, smart classrooms, personal computing and telephony for the District's two colleges. A chart showing the organizational structure of ETS can be viewed at http://ets.fhda.edu/who_we_are. In addition to providing direct technical support through staff, ETS manages some of its systems through outsourcing contracts.

College staffing: In addition to the staffing in ETS, the college provides a limited number of IT staff (primarily at the Instructional Associate level) to directly assist with instruction in computer labs. The college also has a Web Coordinator who coordinates and maintains the college's website (http://www.foothill.fhda.edu/index.php) and the curriculum management system (C3MS) (http://www.foothill.edu/cms/).

Formerly, the college had a senior leadership position for oversight and coordination of technology held by the Associate Vice President of External Relations, Kurt Hueg. Effective June 2013, dean of Foothill Global Access, Judy Baker was assigned the role of Campus Technology Coordinator.

External staffing: The college outsources some of its IT support needs to vendors. Its course management system (CMS) is maintained by Etudes, Inc. (http://etudes.org/).

4b. How Foothill College systematically plans, acquires, maintains and upgrades or replaces technology infrastructure and equipment to meet the needs of the college, including computer refresh cycles and classroom multimedia upgrades and installations.

How Foothill College funds its technology program.

Foothill College maintains a coordinated ongoing plan for updating faculty, staff and administrator computers, on a five-year refresh cycle. The college has a full-time coordinator of Furniture, Fixtures and Equipment (FFE) who is responsible for working with ETS to maintain a database of all computers on campus, and to coordinate with the TTF and the campus technology coordinator for in ordering new computers and arranging for timeline installations.

In addition, the college maintains a coordinated plan for the updating of all classrooms with multimedia equipment for instructional use.

The Director of Facilities, the FFE coordinator and the Campus Technology Coordinator work with ETS to develop timelines for classroom renovations and multimedia upgrades, to schedule the updating of existing multimedia equipment on a five year refresh cycle, and to handle immediate issues that come up such as equipment failure. Computer labs on campus are coordinated in the same manner, and Deans and faculty are consulted so that appropriate computer equipment is ordered and installed to meet the needs of the specific division and program area students and faculty.

For scheduling computer and smart classroom refurbishment / installation, the college coordinates with ETS through a group called the Prioritization Team (composed of the Campus Technology Coordinator, the Facilities Director, the FFE Coordinator, the ETS Director of Networks Communication, & Computer Services, three ETS supervisors and other key ETS staff) and creates a priority list for scheduling replacements / installations.

4b1. Refreshing personal workstations and laptops

The results of an analysis completed in 2010 by ETS set a standard for replacing desktop and laptop computers every five years. A five-year replacement cycle extends the available funding in Measure C Bond funds to refresh computers.

The Foothill College Tech Task Force (TTF) endeavors to increase transparency about campus technology planning, processes, purchases, and decisions. This will increase coordination and decrease duplication of effort. TTF meeting agendas and minutes are posted on the TTF webpage. An open access Group Studio was established for TTF which facilitates the sharing of documents with the entire Foothill College campus community.

4b2. Standardized computer configurations

A subcommittee of ETAC called the Hardware and Software Standards Committee (http://ets.fhda.edu/etac/H&SMembership) is responsible for setting computer hardware and software standards. These standards cover computers, printers, and portable projectors. The committee meets six times annually to review the needs of the colleges and the product offerings of vendors and makes changes to standards that are posted at http://ets.fhda.edu/Standards. College staff may purchase computers in accordance with this standards list or request an exception based on need.

4b3. Funding

The college provides funding support for technology through several funding sources including District-level bonds, categorical funding from the state chancellor's office, grants from other sponsors, and general revenue funds.

Bonds

The college and the District have secured capital funding from voter-approved bonds for technology maintenance and refresh projects. Since 1999, the district has raised $739M in funding through two bond measures (referred to as Measure E and Measure C).

The work on Measure E is nearly completed and it involved primarily facility construction projects. The Measure C bond contains approximately $75M in funding to support technology over a 15-year period beginning in 2007. Funding from the Measure C bond is set aside for each major category of technology infrastructure including:

- Computer replacement
- Printer replacement
- Server replacement
- Smart classroom refurbishment and installation
- Telephone PBX replacement
- ERP (administrative system) replacement
- Data Center refurbishment and replacement
- Network and Security refurbishment and replacement

The Citizens' Bond Oversight Committee's 2012-2013 Annual Report (http://measurec.fhda.edu/annual-reports/) on the progress of the $490.8 million general obligation Measure C bond initiative indicated that "the pace of construction activities continued at a high level, bringing the total bond expenditures to $262 million. The level of spending over the past five years represents very good progress in providing facilities and equipment improvements to support student learning at both Foothill and De Anza colleges. In addition to reviewing Measure C financial reports, the committee verified physical progress in the field at both colleges by conducting site tours of completed and ongoing projects. On these tours the committee noted significant progress on a wide range of projects including new construction of the Physical Sciences and Engineering Center at Foothill and the Media and Learning Center at De Anza; classroom renovations; site and utility/technology infrastructure upgrades; athletic facility improvements; and roof repairs. All of these improvements directly impact the ability of the colleges to facilitate effective teaching and learning."

Measure C has provided for replacement of over 1100 computers for faculty, staff, management at Foothill College and De Anza College. Student computing replacements include computer labs at Foothill – De Anza and Middlefield – SC3103, I5, Kirsh, Math Lab, E-24, Staff Development, and PSEC. The computer replacement program is increasingly providing laptop for faculty members. Computer replacements also include the computers used in new and refreshed multimedia classrooms.

The PSEC building at Foothill College is using the new CISCO network equipment and will be migrated to the new logical architecture in 2013. The networks have been upgraded at Foothill College. Modernization of the Learning Support Center, biology and general classrooms will renovate buildings 5100, 5400, 5600, 5700 and 5800, including new finishes, HVAC, electrical and floor plan modifications to accommodate programmatic requirements. Renovation of building 5400 will be completed by July 2014. Renovation of building 3500 and 3600 to accommodate new programmatic requirements, replacement of HVAC and electrical systems, seismic upgrades and roofing repairs will be completed in May 2016.

State Chancellor's Office Categorical Funding

The state of California provides additional funds to community colleges for categorical programs to support highly specialized student support programs.
According to a funding notice from the California State Chancellor's Office issued in June 2013: "In response to the state's fiscal crisis, then Governor Schwarzenegger signed into law major

revisions to the 2009-10 State Budget that resulted in substantial funding cuts to most categorical programs. In order to help districts manage the deep funding cuts made in 2009-10, AB X4 2 (the education budget trailer bill) provided categorical flexibility for districts for some categorical programs, including Matriculation. Beginning with the 2013-2014 fiscal year, Student Success and Support Program funds (formerly Matriculation) are no longer under the categorical flexibility provision."
(http://extranet.cccco.edu/Divisions/StudentServices/Matriculation.aspx)

Grants
The district has a grants office, which procures grant funding to support college programs.

Foundation. The Foothill-De Anza Colleges Foundation (http://foundation.fhda.edu/) also provides funds to the college in form of grants to support college programs.

General Revenue Funds
The college provides general revenue funds to support technology initiatives when needed.

4c. College/District procedures and processes for ensuring data integrity, security and backup for core systems, and faculty, staff and student information.
Most of the college's technology assets and services are managed by a central district organization called Educational Technology Services (ETS). (More information is available at http://ets.fhda.edu/). However, the management of some technology systems are outsourced by the college or managed internally:
College-Managed Systems
- Curriculum Management System (C3MS)
- Website
- CISCO Network Lab
- TracDat – Student Learning Outcome and program review tracking
- Degree Works – Educational planning
- ePrintIt – Student printing
- SARS – Student attendance and participation tracking
- Desktop Virtualization

College Outsourced Systems
- Etudes course management system
- Turnitin – Plagiarism detection system

The Physics, Science, Mathematics and Engineering Division center uses technology to improve learning outcomes:

- Offer computer science and statistics help online via CCCConfer.
- Computer lab is virtualized, allowing us to provide software such as Mathematica, Matlab and Solidworks to students, and instantly update the lab as new tools are introduced.
- Students in computer science classes have virtual machines, allowing them to test software in a sandbox environment.
- Uses SARS data to track students, and schedule instructors according to demand by day, time and course.
- Has a scanner station available so that students can create PDF files of assignments and send them to their instructors.

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System reliability and disaster recovery are provided by ETS through its systems operations team. ETS currently maintains a data center located at De Anza College to support both colleges and is currently building a new data center to be located next in the administration building on the Foothill College campus. The data center operations team provides full back up and recovery services for systems hosted in the data center through a tape system for servers and applications. The administrative system (also known as the ERP system or Banner) is backed up to a storage area network (SAN). In addition, the district maintains a hot site in Carlsbad, California for Banner with full redundancy and near real-time replication for disaster recovery. The systems operations team monitors the network and servers on a 5 x 24 schedule and reports are sent to ETS managers at the end of each eight-hour shift describing any operational issues and system statistics. On weekends, ETS directors monitor the network to provide an immediate response to any system failure. ETS managers and technicians are supported by automated system monitoring (What's Up Gold), which is configured to alert technicians and management if any network component or critical system becomes non-responsive or the data center temperature exceeds a threshold value.

The College-maintained systems, including the website and C3MS curriculum database, are housed on servers located within the District's data center, and co-located at an off-campus server hosting company in San Jose named Verio. Foothill maintains three servers, one at Foothill, one at the De Anza Data Center and one at Verio. The Verio server is the primary and the remaining two provide redundant backup, to ensure data integrity, security and backup is maintained. The servers are supported by the automated monitoring system (What's Up Gold).

4d. Security Policies and Audits
The district developed a new security policy and accompanying procedures in 2013. These procedures articulate the extent to which information has to be secured as well as addressed the privacy rights of employees and students. These policy and procedures can be found at:
- BP 3260 http://www.fhda.edu/about_us/stories/storyReader$229
- AP 3260 http://www.fhda.edu/about_us/stories/storyReader$234

In addition, ETS developed a protocol for managing IT security incidents and also commissioned three security related audits / studies to assess the security posture of the institution. ETS is currently working on measures identified in the audits to improve security.
- Incident Response Procedures (continually being revised)
- Emergency phone assessment (Spring 2014)
- Penetration Test (TBD 2014)
- PCI/DSS Annual Certification

4d1. Architectural Studies
To provide a stable and reliable technology infrastructure ETS periodically commissions architectural studies to assist staff in building and maintaining supportable systems. Recent studies have included:
- WAN Link Circuit Upgrade with AT&T (December 2013)
- Disaster Recovery Circuit Assessment (January 2014)In addition, ETS conducts internal studies and research to assess system readiness and has recently completed the following studies:
- Measure C Computer Refresh Program Analysis (Spring 2014)

The results of these studies are used to identify issues and needs to be addressed.

The L7 Data Center at De Anza will be renovated to the District's main data center. The renovation will upgrade the HVAC, provide a new permanent electrical feed to the building, provide new distribution of electrical within the building, replace the roof, abate hazardous material, provide back-up power source along with a new UPS system, provide security upgrades to the Data Center, replace or repair the fire suppression system within the Data Center, replace interior and exterior lighting, and refresh the classroom and Data Center interiors, and repaint the exterior. (http://measurec.fhda.edu/da-data-center/)

Planning is underway to transition the Middlefield Campus to the Foothill-De Anza Education Center which will be a regional state-of-the-art facility that equips people from diverse backgrounds with skills to close the growing achievement gap in Silicon. The Foothill-De Anza Education Center is scheduled to open its doors in March 2016. The center will be a 2-story 46,882 square feet state-of-the-art LEED Gold certified building equipped with the latest in wireless, cloud and computing technologies including an energy & efficiency management system, 19 flexible SMART classrooms and a dedicated GIS /Computer Science lab.

As enrollment goes up and budgets go down we are forced to make due with less. The first step taken by the Physical Science, Mathematics and Engineering Division (PSME) was to virtualize a small datacenter and consolidate their servers utilizing VMware virtualization tools.

Upon establishing that virtualization is a viable technology at Foothill College, PSME virtualized their desktops. Virtualizing desktops allows PSME to provide affordable long-term support and upgrades for many new computer labs. Instead of investing thousands of dollars on Dell desktop computers every four or five years, PSME reallocated funds to cover costs of the server farm supporting the virtual environment. Now instead of replacing 200 desktops; one or two servers can be added to the server cluster allowing PSME to maintain a reliable user experience. Another benefit of virtualization is mobility; allowing our faculty members to use virtual desktops has enabled them to use the same desktop in a classroom or in their office.

With the addition of virtual desktops, tablets and wireless display technologies PSME has allowed faculty members to work in a completely wireless environment which gives them the ability to move freely in their classroom while still displaying their screen on the video projectors.

Foothill College projects funded under Measure C are listed at http://measurec.fhda.edu/foothill-college-projects/. Projects specific to technology include:
- AV Low Tech
- Desktops
- New Multi Media, Then Refresh
- Printers
- Refresh Multi Media Rooms

FGA has implemented an Internet-based process for administering confidential Student Course Evaluation surveys for students enrolled in fully online courses that use Etudes.
Starting fall of 2013, the PSME Center and the Teaching and Learning Center provided math and writing assistance to students via teleconferencing using CCC Confer.

5. Technology Training

To ensure that technology assets are appropriate utilized by all members of the college community, Foothill College has multiple resources available for training its employees in the use of campus technology. Included in this plan are district level training services, coordinated by the district Call Center, and college-level training services, including the Foothill Global Access department, and the Krause Center for Innovation, which offers numerous classes and training opportunities through is FastTech program of classes and through numerous technology training workshops and activities. Due to a partnership between Foothill College and Innovative Educators, faculty and staff can obtain technology training via the Internet using Go2Knowledge for free (see https://www.go2knowledge.org/). Go2Knowledge is an online (on-demand, 24/7) professional development trainings and workshops. In order to use the Etudes course management system, faculty must complete Etudes certification training conducted by Etudes, Inc. via the Internet or by FGA staff on campus.

5a. How Foothill provides technology training to meet the needs of faculty, staff and students. How Foothill ensures the technical support and training provided is appropriate and effective.

Distance Education: Foothill Global Access Training Services and Faculty Support
The FGA online learning program provides distance education faculty support with a variety of training opportunities. This includes formal training programs, workshops, conferences, and technical support. Training sessions focus on effective online teaching practices using the Etudes course management system. Faculty are taught how to utilize various CMS tools such as the discussion board, e-mail system, chat rooms, and the assignments tool to design online courses that foster interaction between faculty and students. Additional faculty development opportunities provided by FGA include skill-building in accessibility compliance, use of Course Studio in Banner, copyright/fair use, use of open educational resources and open textbooks; multimedia for teaching; Turnitin anti-plagiarism software, use of smart classrooms, and Web 2.0 tools.

In 2007, FGA upgraded its online technical help desk support services for students to provide greater student identity security and follow-up. FGA received a President's Innovation Award grant in 2008 to implement a Pilot Student ePortfolio Project. Beginning in Winter of 2007, FGA has conducted face-to-face Etudes orientation sessions for students on campus each quarter.

In 2012 and 2013, Foothill College organized and hosted the Leveraging Technology in Support of Students, Faculty and Staff conference in partnership with Innovative Educators. Attendance at this conference was free for Foothill College faculty and staff.

District and Campus-Level Training Services and Programs

For technology functions such as email, phone systems, meeting software, and the Banner database system, which includes finance, human resources, student registration and records systems and related portal system, the district has a centralized training and support organization to support these systems. Since these systems support both Foothill and De Anza College, the ETS organization maintains a Call Center for channeling faculty and staff support for technology issues and also to coordinate individualized trainings.

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To address the growing demand for training around the new Banner ERP system, in July of 2010, the central IT organization (ETS) hired a training specialist in to assess needs, develop a training plan and deliver technology training to employees and student employees. Initially, the training specialist focused on providing training to district employees on the new administrative information system (Banner).

ETS has provided training to staff and student employees in the configuration and operation of the new administrative information system (Banner). In addition, information is also available online regarding how to use various administrative systems used by the district including email, calendaring, anti-virus software, and the district portal. More information can be found at: http://ets.fhda.edu/call_center/.

The Krause Center for Innovation: A regional resource for training K-14 educators in the use of technology in the classroom or online and for advanced teaching, learning, and training. Through its Krause Center for Innovation, Foothill College offers its staff and faculty an outstanding resource for professional development and training in numerous technology-related subjects. Through its FASTTech program of short technology classes, each quarter faculty and staff have access to a variety of one to two-day and online classes on subjects designed to improve the use of technology in the classroom, such as Google tools, iPads, and digital media. In addition, the Krause Center for Innovation serves the entire Bay Area region and beyond by offering professional development programs designed to improve K-14 educator proficiency in using technology such as the MERIT Program, the FAME program. For a full description of these programs consult the Krause Center Annual Report or the Krause Center for Innovation website at www.krauseinnovationcenter.org.

Staff Development Program
In the 2012-13 year, Foothill College implemented a comprehensive program of staff development workshops, training opportunities and seminars, including many technology related areas such as Banner training, portal training, training in using the Argos research tool and workshops on common software tools.

The Board approved OmniUpdate as the preferred web content management system for the District. De Anza has been using Omni for 6-7 years and Central Services will soon be migrating to OmniUpdate. Starting 2014, OmniUpdate will be available for use by Foothill if the college chooses to change systems. The Office of Public Information will develop a plan for rolling out OmniUpdate to the Foothill College campus community including training, tech support, and implementation timetable.

6. Assessment: Assessing the Effectiveness of Technology and Progress in Meeting Goals, and Student, Faculty and Staff Expectations.

6a. How Foothill College ensures that technology needs of students; faculty and staff are identified and met through surveys, program planning, SLOs, AUOs and other methods.

Foothill College has several methods of assessment to identify technology needs are identified and students, faculty staff expectations are met or exceeded. The college and district use surveys of faculty, staff and students as a primary means of identifying their satisfaction level with its array of technology services and functions. In addition, the college has a fully integrated program review process that is tied to its budget allocation model. Through assessment of program review

and SLO data, the college can identify needs related to technology and also assess the progress and success of ongoing technology services and current implementations.

In addition, the college uses means such as Academic Division meetings, campus department meetings, academic and classified senate meetings, college Planning and Resource Council meetings (PaRC) and other informal forums to gather feedback and information on the deployment and effectiveness of technology at the campus. That feedback is channeled by managers, college governance leaders, faculty and staff, to the ETS leadership and to the college Tech Task Force for follow-up and review.

6b. Computing survey and how we use the information to prioritize resources and projects, identify areas of need and make improvements.

Each year the ETS area conducts a survey of students, faculty and staff to gather data about how well we are meeting the needs campus wide. The survey provides specific data for informing the college about where its priorities should be in terms of funding technology projects and in determining immediate needs and long-term goals.

In addition to the annual survey, the college conducts other surveys, such as the 2010 Accreditation Survey, to gather data around technology and student, faculty and staff satisfaction. The accreditation survey provides data related to the areas in Standard III of the Guide to Evaluating Institutions titled "Technology Resources."

Other surveys administered to faculty and staff regarding technology include:
- Use of social media and cloud services for instruction
- Use of mobile devices
- Professional development needs
- ECAR
- OER use by faculty

The Educause Center for Applied Research's (ECAR) annual study of undergraduate students and information technology surveys students' about their experiences with technology and their relationship with digital technology in the classroom. The 2013 survey was administered during the winter quarter in February 2013. Email invitations were sent to a random sample of students who were aged 18 or older at De Anza College and Foothill College. Of the 7,423 De Anza students invited to participate in the survey, 394 completed the survey for a response rate of 5%. The response rate was similar at Foothill where 237 students out of 4,704 completed the survey.

7. Priorities and Positioning for the Future: A brief overview of current project priorities and how we position our college to meet the needs of the future.

The District ETS and ETAC reviewed a Technology Project List, which detailed all the major projects that are either in process or requested of ETS. This document provided the basis for district-wide decision making and priority setting for technology projects. The Foothill Tech Task Force reviews the list and provides feedback to ETS as to which projects are most critical.

Foothill College tech issues under consideration by TTF for 2013-14 include:
- Role of Tech Task Force as a partner with campus community (e.g., transparency of computer refresh and campus tech decisions)

- Clarification on the funding request process and how TTF coordinates with PaRC and OPC
- Technology training for faculty and staff (e.g., Turnitin, OmniUpdate, Course/Group Studio, Excel)
- Site licenses and volume discount purchasing for software
- Ed Tech Innovation
- Designation of centralized physical space, staffing, and other resources for experimental and/or pilot use of educational technology innovations;
- Planning for support of innovation and pilot projects that involve educational technology;
- Development of a streamlined planning process for innovative educational technology project purchases and implementation;
- Request for support via Program Reviews for designating and equipping an experimental classroom that has innovative educational technology hardware and software installed for trial use by faculty
- Tech hardware and software purchasing considerations such as total-cost-of-ownership and availability of staffing for tech support and training
- Data security training for faculty and staff

Issues under consideration by TTF for 2014-15 and beyond include:
- Foothill College website redesign; creation of a website advisory committee
- Digital submission of forms, data collection, and reporting
- Data security (e.g., technology & training to encrypt desktops and laptop user data)
- Support efforts by District ETS to provide guidance and tech support to faculty and staff regarding computer back-up.
- File sharing and content storage
- Student course evaluation surveys (e.g., digitizing the process for on campus courses)
- Multimedia production equipment, facilities, and staffing
- Networked printing solution for faculty and staff
- Use and maintenance of smart classrooms

7a. Positioning for the future.

The annual "Horizon Report" published by The New Media Consortium, identifies key trends in technology, issues to watch going forward and critical challenges for colleges to address (http://www.nmc.org/pdf/2013-horizon-higher-ed-shortlist.pdf). For instance, technologies that the 2013 report identifies as priorities for addressing in the next 1 to 5 years are flipped classrooms, mobile apps, and tablet computing, 3D printing. These technologies are already being employed at Foothill College.

Within the next 5 years, Foothill College technology needs may require the following -
- Increase the number of phone/laptop charging stations across campus and especially in classrooms;
- Outfit at least one classroom outfitted for use by faculty to experiment with technology-enhanced instruction techniques including lecture-capture capabilities (e.g., Wimba) with appropriate camera mount, lighting, acoustics, and room layout;
- Update multimedia classroom design standards to include improved lighting control and audio distribution;

- Establish a dedicated two-way videoconference room with sound-activated microphones for all participants and suitable speakers, appropriate camera mount, lighting, acoustics, and layout; and
- Make scanner stations available in several campus locations including classrooms so that students can create PDF files of assignments and send them to their instructors.

Key to positioning for the future is for Foothill College to provide a strong leadership role in the OEI. This will be achieved by active participation on OEI work groups by faculty and staff.

As an ever increasing proportion of Foothill College students enroll in fully online courses, the need for student services to be available via the Internet becomes more critical. Plans are underway to develop Student Services Orientation videos that will be made available online.

As a leader in online education, in training educators to use technology in the classroom, and in providing students with high-quality learning environments through the use of technology, Foothill College has many talented faculty and staff who engage with emerging technologies and bring that information back to the campus for informing our decision-making around technology and in helping the college focus on which technologies will serve our students and faculty best. Areas such as the PSME Division, Fine Arts and Communication Division, and the Krause Center for Innovation, serve as regional resources for technology training, and serve to inform our campus community about emerging trends in instructional technology, for instance.

Through the contributions of the many departments and individuals on campus, Foothill will continue to innovate and stay current with emerging technologies. While it is important to stay informed of emerging technologies, Foothill College bases its strategy for meeting the needs of the future on assessing and identifying what the needs of faculty and students are and in finding technologies that match those needs.