

**CHABOT-LAS POSITAS
COMMUNITY COLLEGE DISTRICT**



INFORMATION TECHNOLOGY UPDATE

PERIOD: JUNE 30, 2013 TO JUNE 30, 2015.

*SUPPLEMENT TO
MEASURE B BOND ACTIVITIES
ACCOMPLISHMENTS AND FUTURE PLANS
2005-2017
(POSTED JUNE 2013)*

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INTRODUCTION

In June of 2013, CLPCCD ITS published the comprehensive document “*Information Technology Measure B Bond Activities, Accomplishments and Future Plans 2005-2017*”. This document provided a summary of Measure B Bond accomplishments to date, and projects planned for completion by 2017. Several project areas were identified as critical completion items in the Measure B Bond initiative. These projects were selected from a list of priorities that were documented in the original bond scope.

In October 2013, the Chancellor’s Senior Leadership Team (SLT), which consisted of the Chancellor, College Presidents, Vice Chancellors, and Chief Technology Officer, reviewed all the remaining Measure B funding to determine what critical projects could be accomplished within a two-year period from 2013 through 2015, including a new Academic building at Las Positas and a new or renovated Biology building at Chabot. All SLT members submitted their proposals for projects along with possible reductions in their areas that would free up funding for the new college buildings. The Chancellor reviewed the SLT recommendations for the new funding allocation and finalized the Measure B plans for the remaining projects to be completed. In January 2014, the Board of Trustees approved the proposed budgets for completion of Measure B projects at both colleges. For the Information Technology groups at the colleges and the district, the critical network infrastructure and computer equipment requirements were identified and the remaining 34% of the IT fund balances were reallocated to the new building funds. With this IT Bond budget reprioritization, the IT project list became more focused on key areas of upgrade or replacement to be completed over an accelerated two-year period from June 2013 through June 2015.

This 2014 document is a supplement to the 2013 report, summarizing the project progress in the past twelve months, and describing the subset of Bond projects reprioritized for completion by June of 2015. CLPCCD Information Technology Services (ITS), in conjunction with Chabot Computer Support (CS) and LPC Technology have continued the bond project work for enhancement and growth of the Information Technology Computer Systems and Network Infrastructure. This work was executed both as discrete projects managed and funded by CLPCCD ITS and College Computer Support/Technology staff, and in conjunction with Facilities construction/modernization projects for building renovations at the campuses. The work has included specific improvements in network connectivity and infrastructure, servers, wireless and wired networking, desktops/laptops and audio-visual technologies.

The goal of the project work in the last year, and the remaining work forecasted for the coming year, is to best equip the CLPCCD sites with technology that would have the highest performance and most far-reaching impact for future years of CLPCCD technology use.



The projects selected for prioritization were those that focused on several factors:

- (1) Increase the network bandwidth and switch/router connectivity to accommodate future automation needs, through continued expansion of the cabled networks in modernized buildings, and new equipment procurement.
- (2) Provide desktop cycle replenishment within the four-year model to maximize the equipment's life cycle until a new Bond measure or other funding source becomes available.
- (3) Upgrade or replace enterprise servers to provide capacity for new or expanded application systems, and to guarantee system redundancy for critical failover conditions.
- (4) Maintain state-of-the-art Smart Classrooms with audio-visual and/or video conferencing equipment that services the faculty and student needs.
- (5) Continue to expand the wireless environment to support the increased usage of Smart phones and tablets as a key method for system access.

The intent is to upgrade network and computer equipment through 2015 so that the equipment's useful life spans a few years beyond 2015 when the bond funds are used up. Additional information on the IT Bond funding as of October 2013 is provided in Section 12.0 "Bond Technology Cost Summary".



1.0 BUILDING CONSTRUCTION AND MODERNIZATION PROJECTS

The Facilities Modernization department maintains responsibility for the overall building construction and modernization projects. CLPCCD participates in the design, construction and acceptance, to ensure that the cabling infrastructure conforms to the CLPCCD Network Infrastructure standards.

Several construction/modernization projects were in progress at the campuses. With most projects in the construction phases, CLPCCD ITS and College Computer Support/Technology participated in onsite construction inspections, walkthroughs, contractor coordination, final inspections and punchlist/acceptance tasks.

- **Chabot College PE Complex** – The modernization of the five PE buildings (2500-2900) was a lengthy project that required complex phasing of the construction to allow the continued operation of the PE programs. Some buildings were remodeled in up to three phases, requiring multiple moves of PE programs to interim spaces, with temporary voice/data connectivity during each phase. CLPCCD ITS and Chabot Computer Support worked with the campus and construction teams to provide both interim and new connectivity as required by the programs and spaces. Because of the age and structure of these buildings, CLPCCD ITS was called onsite frequently for discussions of cable pathway rerouting and redesign, when existing conditions caused a divergence from plans. Space repurposing because of PE program changes also required new cabling infrastructure design in certain locations. CLPCCD ITS made resources available as needed by Swinerton and the contractors for the efficient and accurate rework. As building completion occurred, CLPCCD ITS and Chabot CS performed walkthroughs, inspections, punchlist/acceptance, followed by the installation and start-up of building network and voice services. The last building to be modernized, B2700, has just been completed.
- **Chabot College Science and Math Building 1800** – As the first building modernization in the two-building Science remodel project, CLPCCD ITS participated in the construction inspection, field walkthroughs and contractor clarifications. This building was equipped with a significant amount of data infrastructure for six computer labs, multiple tutorial centers and two Distance Learning classrooms. Field conditions presented cabling pathway issues to floorboxes and ceiling spaces, thereby requiring CLPCCD ITS to participate in design, mockup and acceptance of alternative infrastructure solutions. In August of 2013, acceptance and occupancy of the B1800 building occurred.
- **Chabot College B3400 Automotive Facility** – In support of the BMW program at Chabot, Building 3400 was modernized. This included new cabling infrastructure for both the CLPCCD network connectivity and the private BMW



network system. CLPCCD ITS and Chabot Computer Support participated in providing design direction and content to the A&E team, construction reviews and inspection and building activation.

- **Chabot Parking Lot Security** – A construction project was initiated for the installation of cameras and call stations in Parking lots G, H and J. Because of the distances to these devices and inadequate pathway issues, a more complex cabling infrastructure was required consisting of fiber, copper and hybrid electric cables, along with ruggedized remote cabling concentrators. Additional connectivity was provided for the new Marquee board. Field conditions presented conduit lengths that exceeded network connectivity standards. CLPCCD ITS worked with the contractor for the investigation and approval of alternate technologies that would provide the security cameras connectivity. Because these devices are connected back to Building 1200 on fiber uplinks, additional switch connects were required for the new fiber backbones. CLPCCD ITS coordinated to provide ample network connections for these security devices. This project is scheduled for completion in the summer of 2014.
- **Las Positas Parking Lot Security** – A construction project was initiated for the installation of cameras and call stations in Parking lots B and C. Because of the distances to these devices and limited pathway, cabling infrastructure was required consisting of fiber, copper and control lines. Like the Chabot parking lot project, limited pathway was available in the parking lots for the infrastructure that connected back to Building 100.
- **Chabot College Math and Physics Building 1700** – As the second building in the B1700-1800 project, CLPCCD ITS has performed construction walkthroughs, and provided contractor onsite clarifications and design alternatives. The B1700 project is under construction with an expected completion in the summer of 2014.
- **Las Positas Vineyard cabling** – Critical to the Viticulture Program is the ongoing monitoring of temperature and humidity to grape vines planted near the south campus entrance. Data backbone cabling was extended to a remote IDF pedestal, which allowed the connection of wired and wireless connectivity to monitoring devices in the vineyard. This greatly aided the Viticulture Program in their instructional goals.

In addition to the ongoing construction activities, a number of new construction projects began design. CLPCCD ITS and College Computer Support/Technology participated in design meetings and user discussions to facilitate the standardized design of voice, data and audio-visual (AV) infrastructure, in the following:

- **Updated Cabling Infrastructure Standards** – CLPCCD ITS published an updated document for the Network Cabling Infrastructure Standards. This
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- document incorporated a number of revisions encompassing industry changes that updated the cabling, pathway, floorbox and outlet standards. As a reference for all future construction projects, this lengthy document is distributed to all engineering teams to ensure that the standardized infrastructure is designed in all projects. These cabling standards are posted on the District website, under the both the Facilities and Technology sections.
- **Las Positas Library Remodel** – The B2000/Library building on the Las Positas campus was identified as a high priority project for modernization. Because of the integrated infrastructure to the B2100 Faculty Office building, this project presents unusual challenges in the accomplishing the modernizing of the Library building while maintaining operations for the voice, data and dependent building services in the Faculty Office building. CLPCCD ITS and LPC Technology did significant research to identify existing cabling infrastructure routing, terminations and pathway, so that the design team could clearly document the specialized construction requirements. In addition, CLPCCD ITS reviewed and provided numerous comments on the voice, data and AV designs, so that the drawings and specifications were consistent with the updated standards. This project is expected to commence construction in June of 2014.
 - **Las Positas B700 classroom and Library Swing Space** - CLPCCD ITS and LPC Technology provided designs and review for the new computer classroom done in place of the two smaller classrooms. This included coordination with furniture providers to enable a flexible design as an open lab to service Library interim usage, which could then be converted to an enclosed lab afterwards. Additional cabling infrastructure to support unique needs of the Library were designed, such that the infrastructure could be rerouted for new B700 building layouts after the Library moves back to their completed building. This project has completed and the Library has moved it to this remodeled, temporary space.
 - **Las Positas Small Projects** – Additional Las Positas Small Projects included the remodel of the B1310/1320 areas to support the Veterans Program, and the remodel of the B1700 (former cafeteria) area to enable the relocation of the Ricoh/Print Shop services. User requirements and design review comments were provided to the A&E teams. These projects are expected to begin construction in June of 2014.
 - **Chabot Library/B100 remodel** – A new project commenced to include the partial remodel of B100 unoccupied first floor spaces, and some portions of the second floor Library. Like the Las Positas Library project, this remodel requires modernization and new infrastructure in portions of the building, while maintaining services to non-modernized areas of the building. CLPCCD ITS and Chabot Computer Support worked to document design recommendations for services maintenance, and to provide numerous comments on the voice, data and
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AV designs, so that the drawings and specifications were consistent with the updated standards. This project is expected to begin construction in the summer of 2014.

- **Chabot Distance Learning Classrooms** – The B1800 and B1700 building included the provisioning of Distance Learning classrooms. During the early design phase, exact requirements for these Distance Learning classrooms were undefined. However, in recent weeks, a technology initiative has emerged which include video capture, and live room-to-room (on campus), Campus-to-Campus, and Campus-to-Internet transmission. CLPCCD ITS and Chabot Computer Support have participated in user-initiated design discussions to more clearly identify achievable technology choices that will perform reliably and simply, while making the best use of the existing networks and wide-area network (WAN) links. With limited funding, the design goal is to implement an open technology framework for specific within-site transmission. In the future, this framework would be expanded to include more sites and extensive AV capabilities as technology and funding allow.

Additional small projects are being identified and prioritized at each campus, in addition to the new building construction that has been selected. CLPCCD ITS and College Computer Support/Technology staff will continue to participate in user requirement, design review and construction inspection as needed.

2.0 SUPPLEMENTAL CABLING PROJECTS

At each campus, the selection of building construction and renovation is determined through user input and designed under the purview of the Facilities Modernization and Program Management Team. For each building modernization project, an architect and engineering team is selected, and CLPCCD ITS is an integral part of the design process, providing input on the technology infrastructure that supports the communication of PCs, servers, wireless access points, electronic bulletin boards, AV equipment and telephones.

On a regular basis, limited scope cabling requirements are identified that are not associated with a larger building remodel project. These may be due to small scale moves, relocations or maintenance activities. In years past, CLPCCD ITS and College Computer Support/Technology had assisted with limited funding in small sized cabling projects. With the budget reprioritization in October of 2013, the funding for supplemental cabling projects from CLPCCD ITS budgets has been eliminated. Therefore, complete responsibility for the selection, prioritization and funding of smaller cabling projects remains in the scope of the Campus Committees and their remaining Bond funds, as it originally was.



The projects that CLPCCD ITS was evaluating included:

- Chabot PE Fields voice/data cabling for wired and wireless connectivity
- Chabot B1000 wired for access point locations to provide wireless connectivity
- LPC Fire Technology
- Additional cabling to support the installation of increased AP locations at each campus

These, and other projects, are now transferred for inclusion and prioritization in the “Small Projects” planning, decided by the Campus Committee at each of the campuses. As such, the Chabot PE/Fields voice/data cabling project has been reviewed by the Chabot Technology Committee and approved for action.

Separate from the Supplemental Cabling, CLPCCD ITS has done a very minor amount of maintenance cabling repairs. The Dental Lab in Building 2200 was subject to flooding in its floor duct, which is also used as a chase for data cabling. Although some cables are permanently damaged and need replacement, a limited amount of maintenance work was funded to reduce the damage and make the remaining cabling more serviceable.

3.0 NETWORK EQUIPMENT

Bandwidth and connectivity requirements continued to grow at the CLPCCD sites, because of the ongoing increase in network devices needing hardwired connections, as well as the expansion of computer labs built in the building modernization projects. CLPCCD ITS has maintained a limited amount of equipment to add as needed, but more substantial equipment upgrades are required to expand the network topology.

For greatest longevity of the network equipment, CLPCCD ITS discussed a number of different hardware changes that would support the continued growth and increased performance of the data connectivity. Specifically, the following upgrades are in the design:

- Upgrading the uplink connections from buildings to the campus core switch from 1 Gbps to 10 Gbps over the existing single mode fiber cabling (10-fold increase in speed).
- Upgrading the user network ports from 10/100 to 10/100/1000 Mbps transmission (10-fold increase in speed).
- Increasing the distribution and quantity of Power-over-Ethernet (POE) ports in the buildings to better support POE devices like more access points, IP cameras, etc.
- Increasing the port counts in IDFs where switches were full.



Coupled with network equipment aging from the 2005 Network Equipment procurement, CLPCCD ITS developed a new bid for the acquisition of new switching, router and firewall equipment. This bid was compiled to be the last substantial procurement of Cisco equipment with the current Measure B funds. Cisco equipment is the CLPCCD standard for wired and wireless network equipment. CLPCC ITS provided configurations, equipment recommendations and bill of materials review in preparation of the network bid. The equipment will be installed in the following locations:

Location	Equipment
Chabot College B200/300	65xx Core switch, ASA Firewalls, ISR routers
Chabot College B100, B300, B400 (IOB), B700 (CSSC), B900, B1600, B2200, B3900	4506E upgrades, 3560X switches
Las Positas College B1900A	ASA Firewalls, ISR routers
Las Positas College B800, B1800, B1900, B2000, B2400, B4000 (CCA)	4506E upgrades, 3560X switches

In a very competitive bidding environment, CLPCCD received three bid responses and was able to award the bid to AMS.Net for a bid amount with discounts in excess of 40% off manufacturer's list price. Approved by the Board in April of 2014, the new equipment arrived in time for rapid deployment in the summer months. The new equipment will provide a state-of-the-art platform for network connectivity addressing current needs and providing growth for several years.

4.0 WIRELESS NETWORKING

There is currently substantial wireless coverage throughout the College campuses and District Office, since new building renovations in the past years have added the cabling infrastructure to support the wireless access points. Older buildings have also been equipped with wireless in areas where the cabling was adequate to support the wireless access points.

Some expansion in the campus wireless 802.11a/b/g/n networking was implemented this year. Each access point connection requires data cabling so the wireless can connect to the campus network. Most increases in the wireless network are installed with the start-up of new buildings, because new and modernized building designs include wired locations for access point (AP) connectivity. The following APs are installed at each of the college campuses:



Chabot Campus Wireless Service Areas 72 access points in 32 buildings



<p><u>CC 100 Library 01</u> <u>CC 100 Library 02</u> CC-LRC-119 <u>CC 126 TV Studio</u> <u>CC-200</u> CC-303 <u>CC 304 Classrooms</u> <u>CC IOB First Floor Conf Rm</u> <u>CC IOB Second Floor Conf Rm</u> <u>CC 401 Instr Office Bldg.</u> <u>CC 402 Instr Office Bldg.</u> <u>CC 403 Instr Office Bldg.</u> <u>CC 404 Instr Office Bldg.</u> <u>CC 451 Instr Office Bldg.</u> <u>CC 452 Instr Office Bldg.</u> <u>CC 453 Instr Office Bldg.</u> <u>CC 454 Instr Office Bldg.</u> <u>CC 500 Soc Science CR</u> CC-FinAid <u>CC 700 CSSC – 700.3</u> <u>CC 700 CSSC – 712</u> <u>CC 700 CSSC – 745B</u> <u>CC 700 CSSC – 760</u> <u>CC 700 CSSC – 767H</u></p>	<p><u>CC 801 Classroom</u> CC 802 CC-800-First Floor IDF CC-800-Second Floor IDF <u>CC 900 School of the Arts CR</u> <u>CC 904 School of the Arts CR</u> <u>CC 1100 School of the Arts Faculty</u> CC-1100-IDF <u>CC 1115 School of the Arts Faculty</u> CC-1200 Lobby CC 1220-IDF CC-1239 CC-1300 Control Room <u>CC 1300 Perf Arts STGLFT</u> <u>CC 1300 Perf Arts Box Office</u> <u>CC 1400 Technology Center</u> <u>CC 1500 Applied Tech Faculty</u> <u>CC 1611 Applied Tech Classroom 2</u> CC-1613 <u>CC 1801 Classrooms</u> <u>CC 1803 Classrooms</u> <u>CC 1808 Classrooms</u> <u>CC 1813 Classrooms</u> <u>CC 1926 Science & Planetarium</u></p>	<p><u>CC 2000 Bio Science Classrooms</u> <u>CC 2124 Bio Science Classrooms</u> CC- 2110 <u>CC 2102 Biology Lab</u> <u>CC 2104 Bio Science Classrooms</u> <u>CC 2208 Health Sci/Dental Health</u> <u>CC 2251 Health Sci/Dental Health</u> CC 2271 <u>CC 2300 Cafeteria</u> <u>CC 2300 Peer Academic Tutoring</u> <u>CC 2400 Disabled Students</u> <u>CC 2500 Gymnasium</u> <u>CC 2607 PE Faculty Offices/CR</u> CC-2800-IDF CC-2819 CC-2901 CC-M&O Main Office <u>CC 3100 Emergency Medical CR</u> CC-3407 <u>CC 3500 Children’s Center</u> CC 3800 Bookstore <u>CC 3912 Chemistry and CompSci</u> <u>CC 4000 Fitness Upstairs</u> <u>CC 4000 Fitness Downstairs</u></p>
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Bold indicates APs recently added within the last year.
 B1700 will be brought online shortly for use in the Fall of 2014.



Las Positas Campus: Wireless service areas 74 APs in 28 buildings



<u>LPC 100 WAP 01</u>	<u>LPC 1600 WAP 04</u>	<u>LPC 1900 Hallway1</u>	<u>LPC 2411 WAP 02</u>
<u>LPC 200 WAP 01</u>	<u>LPC 1600 WAP 05</u>	<u>LPC 1900 Training Room</u>	<u>LPC 2412 WAP 01</u>
<u>LPC 300 WAP 01</u>	<u>LPC 1600 WAP 06</u>	<u>LPC 1900A WAP 01</u>	<u>LPC 2416 WAP 01</u>
<u>LPC 400 WAP 01</u>	<u>LPC 1600 WAP 07</u>	<u>LPC 1919 WAP 01</u>	<u>LPC 2420 WAP 01</u>
<u>LPC 500 WAP 01</u>	<u>LPC 1600 WAP 08</u>	<u>LPC 2100 WAP 01</u>	<u>LPC 2420 WAP 02</u>
<u>LPC 600 WAP 01</u>	<u>LPC 1600 WAP 09</u>	<u>LPC 2100 WAP 02</u>	<u>LPC 2420 WAP 03</u>
<u>LPC 700 WAP 01</u>	<u>LPC 1600 WAP 10</u>	<u>LPC 2100 WAP 03</u>	<u>LPC 2500 WAP 01</u>
LPC 700 WAP 02	<u>LPC 1600 WAP 11</u>	<u>LPC 2202 WAP 01</u>	<u>LPC 2500 WAP 02</u>
LPC 700 WAP 03	<u>LPC 1600 WAP 12</u>	<u>LPC 2205 WAP 01</u>	<u>LPC 2600 WAP 01</u>
LPC 800 WAP 01	<u>LPC 1600 WAP 13</u>	<u>LPC 2300 WAP 01</u>	<u>LPC 3000 WAP 01</u>
<u>LPC 800 WAP 02</u>	<u>LPC 1700 WAP 01</u>	<u>LPC 2306 WAP 01</u>	<u>LPC 3100 WAP 01</u>
<u>LPC 800 WAP 03</u>	LPC 1700 WAP 02	<u>LPC 2345 WAP 01</u>	<u>LPC 4110B WAP 01</u>
LPC 800 WAP 04	<u>LPC 1805 WAP 01</u>	<u>LPC 2348 WAP 01</u>	<u>LPC 4119 WAP 01</u>
<u>LPC 900 WAP 01</u>	<u>LPC 1814 WAP 01</u>	<u>LPC 2362 WAP 01</u>	<u>LPC 4119 WAP 02</u>
<u>LPC 1000 WAP 01</u>	<u>LPC 1822 WAP 01</u>	<u>LPC 2366 WAP 01</u>	LPC 4119 WAP 03
<u>LPC 1300D WAP 01</u>	<u>LPC 1828 WAP 01</u>	<u>LPC 2401 WAP 01</u>	LPC 4119 WAP 04
<u>LPC 1600 WAP 02</u>	<u>LPC 1854 WAP 01</u>	<u>LPC 2401 WAP 02</u>	<u>LPC 4210A WAP 01</u>
<u>LPC 1600 WAP 03</u>	<u>LPC 1859 WAP 01</u>	<u>LPC 2401 WAP 03</u>	<u>LPC 4210A WAP 02</u>
	<u>LPC 1873 WAP 01</u>	<u>LPC 2411 WAP 01</u>	

Bold indicates APs recently added within the last year.

* Building 2000/LRC is currently offline for construction. Wireless will be re-enabled when the building construction is completed and the building is brought back into service.



The current wireless controller has the ability to support 100 access points per site. This allows for growth to increase wireless density and coverage, if needed. At this time, coverage is ample for usage inside the buildings. In addition, the current cabling infrastructure can accommodate the placement of additional wireless access points, particularly in modernized building with dense student congregation rooms.

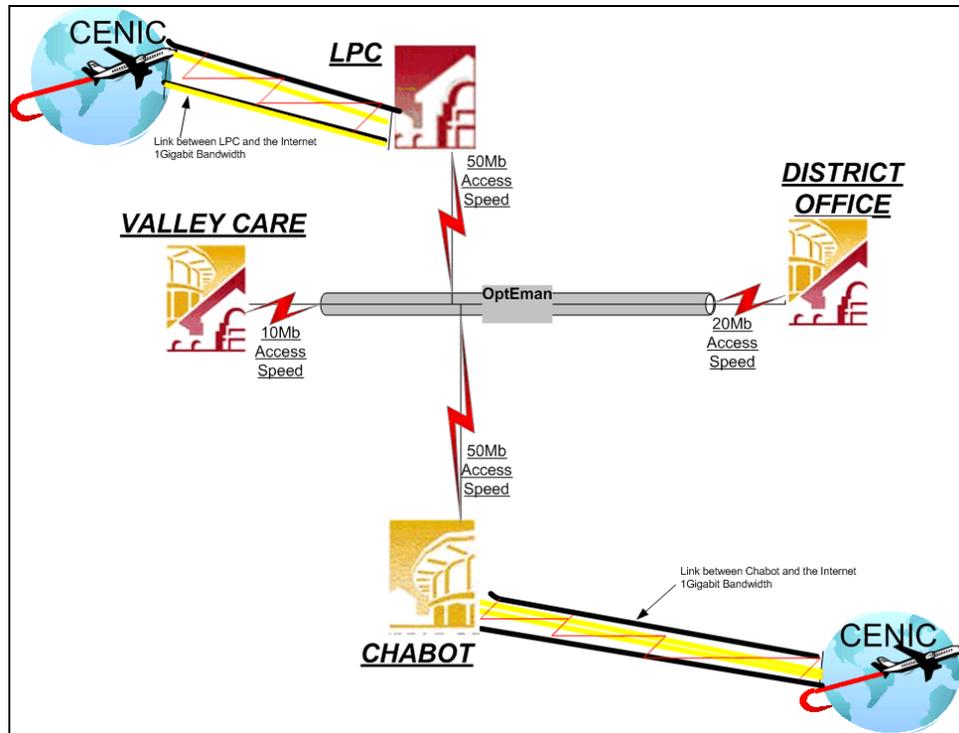
The newly ratified 802.11ac technology will provide increases in speed of connectivity to the network from the access point and from the access-point to the user. Since the 802.11ac standard only runs in the 5GHz range, it is immune to common interference items (microwaves, cordless phones, etc.) While the 802.11ac standard may provide speed increases, it does not address the density issue currently present when 25+ users are all competing for connectivity to a single AP. As with the migration to 802.11n, new AP hardware is required for 802.11ac. PCs that can only connect on the 2.4 MHz ranges will need to continue as 802.11n clients. Hybrid APs that can support 802.11n and 802.11ac radios would be most feasible for the CLPCCD environment where wireless clients are tremendously varied. First release of 802.11ac was ratified in January 2014, with the second generation scheduled for release later in 2014. The finalized new standard may be considered for future upgrades when additional funding sources can be identified.

5.0 WIDE AREA NETWORK AND INTERNET CONNECTIVITY

As part of the Network Equipment bid described above, CLPCCD ITS purchased and will deploy higher performance routers for the internal OptEMAN WAN links. To keep ahead of the bandwidth demand for site-to-site network communication, CLPCCD ITS upgraded the port speeds at each of the Las Positas and Chabot campuses to 50 Mbps. When fully consumed, this bandwidth would exceed the routing capacity of the existing router hardware. CLPCCD ITS has bid and will receive/install new ASR routers for the OptEMAN WAN links at Chabot and LPC campuses. The ASR routers can fully support the current speeds and are rated for future speed increases up to Gigabit levels in future years. Following the migration to the ASR routers at Chabot and LPC, one of the routers will be redeployed to the Dublin District Office site, where its OptEMAN WAN link has been increased to 20 Mbps. In addition, CLPCCD ITS expanded the OptEMAN to include a new 10 Mbps link to Valley Care Medical, for support of five teaching classrooms. This replaces two T1s that supported four classrooms, and with the OptEMAN WAN link a fifth classroom is now included. The current CLPCCD WAN topology and the network bandwidth utilization charts are shown in the following diagrams.

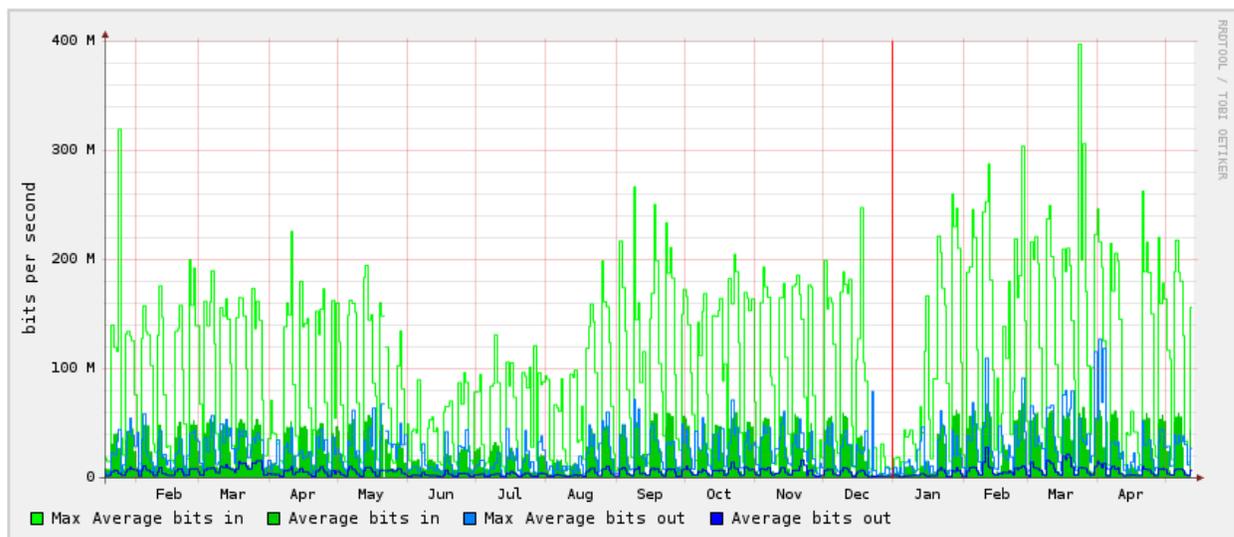


The CLPCCD WAN topology is depicted below:



Internet connectivity is currently provisioned by CENIC at 1Gbps speeds at each campus. Existing bandwidth usage show ample capacity for current application systems, with adequate room for growth.

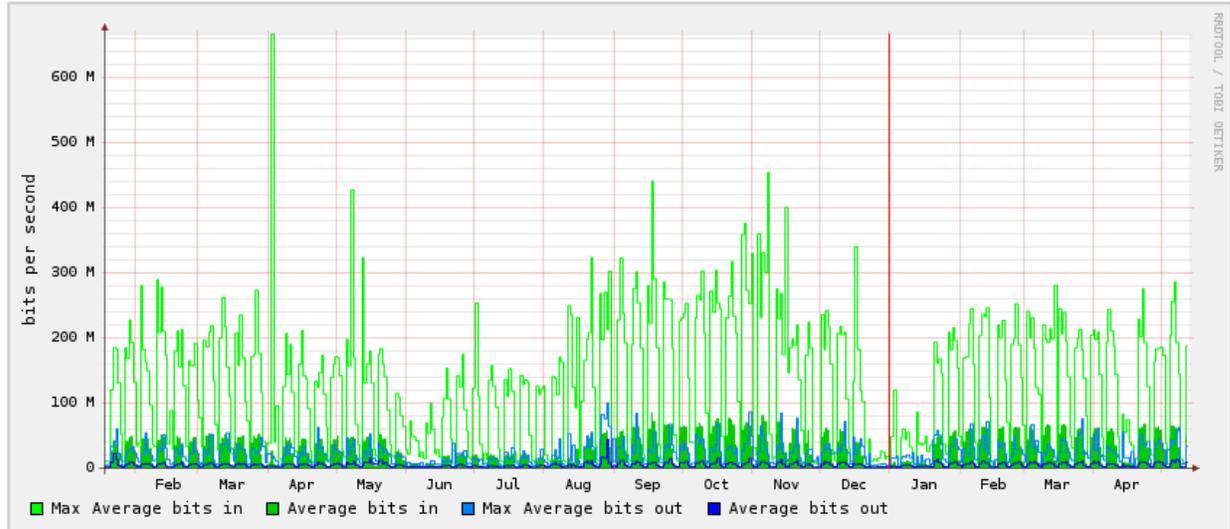
Chabot Internet Usage (Jan 2013 to May 2014)



Average Daily usage: 200Mbps



Las Positas (Jan 2013 to May 2014)



Average Daily usage: 250Mbps

The current utilization shows ample bandwidth for growth at each college site. However, the trend towards increased usage of Internet resources will further consume the available bandwidth.

The Internet Service Provider for California educational institutions is CENIC. While the current norm for Community Colleges is a 1 Gigabit per second (Gbps) connection to the Internet, CENIC has already deployed 10 Gbps Internet connections at early-adopter high-bandwidth research sites through its California Openflow Test Network (COTN). It is expected that mainstream adoption of 10Gbps connections will occur next year or so. Further enhancements are planned to allow CLPCCD to fully participate in this bandwidth increase, as described in Section 7.0 “Network Firewall, Security and Management”.

6.0 DESKTOP AND SERVER STANDARDIZATION

As application and user demands continue to increase, the computer infrastructure must increase accordingly. Upgrades are required at both the server and desktop level to take advantage of the increased bandwidth for more capacity. CLPCCD ITS and College Computer Support/Technology bases the purchase of server and desktop systems on “best in class” hardware at the time of the purchase. This provides for the greatest longevity of the equipment. CLPCCD has established district-wide standards, which are updated periodically as new technology is introduced. These standards are based on Hewlett-Packard desktops, laptops and servers, with specific distribution of tablets/iPads/MS Surface where required for instructional and/or administrative purposes.



Server Upgrades

CLPCCD ITS and College Computer Support/Technology standardized on Hewlett-Packard servers in a joint industry analysis process at the beginning of the Measure B bond. Beginning in 2005, servers were migrated to HP DL server platforms in each of the Chabot, LPC and District Administrative server/data centers. After almost 10 years of usage, many of those servers have gradually aged to beyond the needed processing power and must be replaced. The following server upgrades have occurred at all locations:

Location	Server Upgrades
Chabot	Seven (7) server upgrades: <ul style="list-style-type: none">• Two (2) upgraded domain controllers moved to 2012r2• One (1) upgraded SCCM server moved to Windows Server 2012• One (1) upgrade of the Tightrope server for campus announcements• One (1) upgrade of the Web server• One (1) upgrade of the Applications server• One (1) upgrade of the GoPrint server to enable wireless printing for students• Migrated to Symantec 3600 Centralized Backup Appliance with robotic tape
Las Positas	Ten (10) server upgrades: <ul style="list-style-type: none">• Three (3) upgraded domain controllers moved to 2012r2.• Two (2) new servers deployed• Five (5) new servers systems scheduled for deployment in summer of 2014
District	CLPCCD District ITS has migrated to a blade/SANS infrastructure in lieu of dedicated servers. This includes: <ul style="list-style-type: none">• Sixteen (16) blade servers for pooled and/or allocated CPU resources• 20 TeraByte SANS storage systems, upgradeable as capacity is required• Implementation of VMWare Virtualization to provide an agile and simplified server environment• Upgraded Tape Backup system for offsite (DR) storage• Transition of multiple servers to VMWare



The CLPCCD District ITS upgrades to blade servers, SANS and VMWare represent the implementation of new technologies that will:

- Balance server CPU, memory and disk resources across application and core servers
- Increase the effective use of the CPU, memory and disk hardware
- Re-host and build new server instances more rapidly
- Provide easy expansion of hardware resources, with minimal downtime
- Provide quick recovery from failures with minimal user impact

The equipment is connected to the CLPCCD network with 10Gb single mode fiber uplinks, so as to provide high bandwidth access to district-wide administrative computer platforms. While the VMWare environment introduces a substantial change to the CLPCCD ITS server operations, it is embraced as a forward-looking architecture that will position CLPCCD for more robust application deployments in the future.

It is planned that College Computer Support/Technology teams will likewise investigate this architecture to move their server infrastructure to similar platforms in the subsequent years.

Desktop Upgrades

As applications demand more memory and processing power, desktop replacements for offices and student computer labs are needed to provide a standardized and high-performing desktop environment. While BYOD (Bring Your Own Device) initiatives can augment connectivity for casual web site access, it does not provide a solution for the robust and supportable desktop applications access that the curriculum requires. As such, desktop deployments will continue so as to enable CLPCCD staff and students to run the applications required for the College classes, and desktops will continue to be necessary for administrative enterprise system functions.

The Measure B bond has provided for two rounds of desktop replacements with a replacement cycle of every four years and a third cycle is in process. By the end of the last round of computer replacements, CLPCCD campuses were homogenously deployed with Hewlett-Packard desktop computers. A benefit of this deployment was a substantial reduction in equipment failures and maintenance costs.

For the remainder of the bond, the third cycle of desktop deployments will continue at an accelerated pace.



The following deployments took place in the past year:

Location	Desktop Upgrades
Chabot	<ul style="list-style-type: none"> • Replacement of 300 computers with next generation desktop technology, which completed 1945 systems for second cycle desktop replacements • Deployed 50 new computers for the PE complex (B2600/2700/2800/2900) • Deployed 180 new computers for the B1800 Science and Math computer labs
Las Positas	<ul style="list-style-type: none"> • Replacement of 150 computers with next generation desktop technology (LPC SSA building and others), which completed 1483 systems for second cycle desktop replacements • Acquisition of 50 iMac systems for custom applications used by specific program. • Migration of 200 users from Windows XP to Windows 7 • Acquisition of 245 Windows computers for next cycle rollout • Acquisition of 15 Windows All-in-One computers for the Theatre program
District	<ul style="list-style-type: none"> • 11 new computers for HR • 51 new computers for District/Contract Ed/ITS

A summary of the desktop deployments at the campuses for all cycles follows:

Campus	Cycle #1	Quantity	Cycle #2	Quantity	Cycle #3	Quantity
Chabot	2005-6	400	2009-10	420	2013-2014	230
	2006-7	400	2010-11	450	2014-2015 Projected	1555
	2007-8	400	2011-12	495	New Biology Bldg.	TBD
	2008-9	400	2012-13	580		
	Total		1600	Total	1945	
LPC	2005-6	300	2009-10	450	2013-2014	310
	2006-7	325	2010-11	400	2014-2015 Projected	1045
	2007-8	300	2011-12	325	New Academic Bldg.	TBD
	2008-9	250	2012-13	275		
	Total		1175	Total	1450	



Procurement of the computers was through Atacom for the HP desktops, laptops and tablets. The most recent contract has come to the end of its term, and a new bid has been prepared for the last round of Measure B computer procurements. It is expected that this new bid award for PC Desktop Equipment will be the final contract award from the current Measure B funding.

In addition to standalone desktop computers, Chabot College has also implemented a Virtualized Desktop environment based on the Tangent VDI system. This technology is used in computer labs to provide a standard and controlled desktop interface for the students. In the lab, the students use the VDI Terminal (25) and Citrix (30) environments on HP desktop hardware. The VDI system has performed very well at Chabot to prevent the downloading of viruses that has become prevalent with Internet surfing on reconfigurable desktop systems. As a key solution for reliable desktop performance in labs, Chabot CS has expanded the redundancy of the VDI server environment, to ensure continued uptime and lab performance.

Laptops and Tablets

In the desktop bid, specific configurations for CLPCCD laptops have been included. A standard of HP laptops has been established. Laptops are distributed by request to staff and faculty, and for specific instructional purposes. LPC Technology uses a pool of Windows and Macintosh laptops as loaners to staff, in laptop carts and classrooms. Chabot also maintains a pool of laptops, and loans them out for limited special events. Chabot Computer Support has deployed 15 laptops in the past year. LPC is in the process of replacing 25 laptops for Science Classroom 1810.

Laptops are not deployed for general purpose computer labs because a small form-factor desktop computer provides a more robust hardware environment, and better warranties when failures occur. Specific departments use laptop carts in their classrooms for student research activities in Science and Nursing.

Tablets are deployed for specific instructional purposes. Chabot Computer Support has provided iPads for the Stage Production and Music Controls (5), and Physics curriculum (5). LPC has similarly deployed iPads for sound equipment control. In general, tablets are deployed when identified for specific purposes, but not as a general purpose transportable computer.

CLPCCD ITS and College Computer Support/Technology have evaluated a number of tablet and laptop offerings available in the industry, including: Chromebooks, HP laptops, Macbooks and others. During the evaluations, the compatibility, supportability and functionality were analyzed with respect to CLPCCD user requirements.



The following standards, which have been reviewed with the Chabot and LPC Technology Committees, have been established:

- iPad: when needed by custom software functions and specific teaching applications, limited web browsing.
- Microsoft Surface: a general purpose tablet for office applications and web access, which has features of both the tablet and laptop.
- HP Laptop: for a transportable computer environment with full application and storage access.

CLPCCD ITS and College Computer Support/Technology will continue to move forward with limited procurement of these devices as requests are received and funding allows.

7.0 NETWORK FIREWALL, SECURITY AND MANAGEMENT

CLPCCD ITS monitors and operates Cisco ASA firewalls for daily security protection from network intrusions. Each campus has two firewalls in the failover configuration, and this functionally has been successful in maintaining constant Internet access/presence during the infrequent outages that have occurred in the past year.

Firewall logs are exported and stored to the Manage Engine Log Management server for analysis and trending.

As part of the Network Equipment bid completed as described above in Section 3.0 “Network Equipment”, CLPCCD ITS will install new ASA 5585 firewalls for the CENIC Internet links at Chabot and LPC campuses. These will be provisioned as a primary/failover pair for each campus. These firewalls have the capacity to accommodate the current Internet speeds, and the projected increases that will occur in the next few years.

In the past year, CLPCCD ITS was able to identify and contain multiple virus outbreaks. These recovery efforts were manual processes, executed after the virus contamination. For more sophisticated network protection, Intrusion Prevention systems (IPS) offer functionality for automatic analysis of malware or virus attacks. The new firewalls are upgradeable to provide IPS capability. CLPCCD ITS considers the Intrusion Prevention capability a key priority to ensure a secure network and computing environment for staff and students, and the introduction of this technology will be pursued next year.



8.0 SMART CLASSROOM AND TECHNOLOGY ENHANCED LEARNING ENVIRONMENTS

Smart Classroom Technology has been designed and built as part of the building modernization projects, and will be included in the remaining Measure B Bond construction projects. Since construction projects provide a complete solution to match the current standard, limited additional enhancements have been needed beyond the new building areas. In areas needing upgrade, those projects will be scoped and funded by CLPCCD ITS.

LPC Campus

In addition to the construction projects of the past year, LPC Technology staff has equipped one classroom and one conference room with AV Technology using the configuration standards as defined for building modernization projects. Five more classrooms in non-renovated spaces are scheduled for renewal of the existing AV equipment, targeted for the Fall of 2014. In addition to this, the lecture hall in the MD building 2400 will also be scheduled for equipment maintenance and replacement in Fall of 2014.

Through facilities rentals and campus events, LPC has identified the need to capture and/or stream video recordings. A video production system has been configured to allow professional quality management of video input, so that camera, computer or digital media sources can be seamlessly integrated into production quality video output. The LPC Technology department would run this system in conjunction with the AV provisioning services that they currently provide for campus events such as graduation, TED conferences, etc.

To provide enhanced quality and video control, LPC Technology designed and contracted the upgrade of Theatre room controllers with video scalars. With the increased demand for Theater usage, this upgrade was required so as to provide a more consistent and higher performing operating environment.

Similarly, upgrades to the LPC Amphitheatre sound/lighting systems and seating design are in planning stages for construction in Fall of 2014.

Chabot Campus

At Chabot campus, a detailed analysis of the teaching requirement has driven the design development for more sophisticated AV technology in the B1700 and B1800 Distance Learning classrooms. In the first installations, the B1800 Distance Learning classrooms



were configured as standard Smart Classrooms. However, as teaching experience with video technologies has matured, the Science faculty has expressed the desires for the following capabilities:

- Video capture of local instructor lecture and teaching materials
- Video capture of local student interactions
- Distribution of video to other classrooms on campus for remote/overflow viewing
- Storage of captured video for editing
- Uploading of captured video for remote Internet viewing, either to YouTube or to CLPCCD Web site, or transmission on the Chabot television channel
- Real-time Video transmission of lectures to the LPC campus for joint classes
- Real-time Video transmission of LPC campus student back to the Chabot classroom where the instructor is lecturing

The business motivator is to be able to get sufficient enrollment for higher level science classes by combining students from both campuses into one class. While not all of the capabilities outlined above can be provided with the available Measure B Facilities budget, a new Distance Learning project will provide an upgrade of the Distance Learning classroom equipment to begin addressing these requirements in a phased approach. The initial capabilities of this project will provide Video lecture capture, local storage and overflow classroom video sharing to the comparably equipped B1800 and B1700 Distance Learning rooms at Chabot. The head-end equipment for control of the AV will be installed in the B1800 Control room.

Spare strands of the data fiber infrastructure can be used for video transmission from B1800 to the B100 Broadcasting department, but with the current state of the Broadcasting equipment, the video stream can not be retransmitted. Funding sources are being identified for possible technology upgrades to the Broadcasting equipment. Integration of other AV transmission equipment, such as the Polycom Videoconferencing systems, needs to be considered for its appropriate use in College classrooms. Before more equipment investment occurs, the development of a comprehensive Distance Learning Strategy with inputs from additional District and College technologists and teaching departments needs to occur. The Distance Learning Strategy can then define and guide the AV technology upgrades under consideration for the remaining Measure B building projects at the Chabot and Las Positas campuses.

A separate project was initiated to fund a Distance Learning environment between LPC and the Tri-Valley Schools. Through the California Career Pathways Trust, grants for distance learning equipment were available. LPC in conjunction with the schools from Pleasanton, Dublin and Livermore, submitted a joint grant, based on Cisco video conferencing equipment. This grant would provide fixed video conferencing classrooms, mobile and personal stations, for collaborative classrooms that would share curriculum from LPC with the K-12 schools, and between the K-12 schools themselves. This is an initiative to develop and integrate standards-based academics with a career-relevant,



sequenced curriculum following industry-themed pathways that are aligned to high-need, high-growth, or emerging regional economic sectors. The full text of this trust and goals can be found on the <http://www.cde.ca.gov/ci/ct/gi/ccptinfo.asp>. With this grant, LPC is hoping to establish a strong bond, and education track that continues and enhances the K-12 learning environment with LPC teaching resources.

9.0 DISASTER PREVENTION AND RECOVERY

As of June of 2014, CLPCCD ITS has updated the Disaster Recovery plan from the initial publication in August of 2010. The new document details the technology and process updates that will enable CLPCCD ITS to maintain a robust and stable network and server environment. This document is available on the CLPCCD District website, under the Technology Services tab. Refer to the “CLPCCD ITS Disaster Recovery Plan Update as of June 2014” for more details on this topic.

10.0 SOFTWARE APPLICATION SYSTEMS

Although much of the Measure B Bond funding was utilized for a variety of hardware devices with device specific software, there were specific software Application Systems that were planned and purchased under Measure B funding to improve the instructional environment for faculty and students as well as to benefit the administrative resources. These software systems were installed as part of facilities construction activity and/or as part of the network infrastructure innovations. A brief description of these software implementations with the current status follows.

10.1 Banner Document Management System (BDMS)

A centralized Banner Document Management System (BDMS) was installed for storage and retrieval of electronic documents for all departments throughout the colleges and district in order to migrate to a paperless environment where appropriate. This type of Document Imaging system will reduce facility space for file storage and archives and will automate the manual processes in all the business areas of the college and district. Some of the areas that will benefit most from the Document Imaging software are those that handle transcripts, admissions materials and checklist items, financial aid documents and tracking, finance invoices, purchase orders, human resource applications, and employee files.

The Banner Document Management System was selected due to the extensive functionality and flexibility as well as its integration with our existing Banner Student Information System. The BDMS System replaces the outdated and limited ATIFiler System that was utilized previously for many years by Admissions & Records at both colleges for the scanning of the transcripts received from other institutions. This BDMS



system is not a standalone system like ATIFiler, but the BDMS module is an integral part of the Banner system and contains automatic links within the Banner System to view or modify the documents directly. BDMS has automatic links established within Banner for Admissions & Records, Financial Aid, Finance, Purchasing, Human Resources, and Payroll. However, the software requirement is not limited to the Banner system functions only, but has the capability to be extended to any area of the college or district where storage of digital media is required.

As of June 2014, Admissions & Records for both colleges, LPC Financial Aid, and District Purchasing and Business Services are using the BDMS System to store their departmental documents for students and staff. As of May 2013, Chabot College Admissions & Records completed their conversion from the ATIFiler System to the new BDMS, and Las Positas Admissions & Records completed their conversion in July 2013. In addition, Las Positas Financial Aid has been live on the BDMS System over the past two years and District Purchasing and Business Services implemented the BDMS System in April 2014 to archive their paper documents. Other departments such as Chabot Financial Aid and Human Resources will continue to be added to the BDMS System as users are prepared for this transition to electronic documents.

10.2 Banner Mobile Applications

A recent addition to the Banner Enterprise Suite of products, which migrates CLPCCD to the new mobile infrastructure capabilities, is the Mobile Applications module which provides inquiry features for primary CLASS-Web functions such as Courses and Grades. The Banner vendor has provided these base Mobile functions through a “cloud” technology, which facilitates the implementation of any new upgrades to the module for more inquiry features or future update functions. District ITS was able to negotiate with the vendor to waive the license fee for this Mobile product and be charged only for the standard maintenance fee similar to other Banner products.

The Mobile Applications have been reviewed by pilot groups and were modified based on the inputs from the College Technology Committees, the college student governance bodies and the Admissions & Records/Financial Aid departments. A live release is scheduled for all students, faculty, and staff in the upcoming Fall 2014 term. This mobile application is primarily targeted at students for the Banner features, but other applications beside Banner that have been added to the mobile app can be used by staff, if desired. End users simply select the Ellucian Mobile app from the app store of their choice, confirm the institution they want, and download a solution that is personalized to that institution. The initial release of the Mobile Applications will include the following menu options on the Smart phones, both for iPhones and Androids: Contact Us, Class Schedules, Grades, Holds, Zonemail, Faculty Directory, Blackboard, Campus Map, Event Calendar, Facebook, News, Twitter, Bart, and Wheels. As the Ellucian vendor expands the available functions on the Mobile Applications, District ITS will roll out these new changes.



10.3 College Net Room Scheduling System (R25)

An automated Room Scheduling System was installed at CLPCCD that also interfaces with our Banner Student Information System to provide class schedules and room assignments along with events activities. The CollegeNet R25 System is an automated academic and events scheduling software that provides online real-time management of the facility utilization throughout the campuses. In addition to the facility benefits, the Room Scheduling will enable the colleges to increase enrollments by maximizing the space on campus. The inventory capabilities for the rooms will also ensure that the right equipment is available for all the disciplines. The automated system optimizes campus facility use by comparing section/classroom scenarios, assigning classes to rooms, producing detail reports of the results, and providing “what if” simulations for planning purposes.

The Academic Services staffs at both colleges have used the class schedules for the instructional courses with automatic interface to the Banner System for the past several years. In order to have a comprehensive view of the entire campus room utilization, Academic Services is waiting for the college groups who schedule events at both colleges to fully utilize the system for events as well as courses. Since the CollegeNet Room Scheduling system is fully operational and available for live usage, the colleges will determine the timeline to work with the various groups that handle events for the campus to transition from their paper based system to the automated events features provided by the College Net System. With both Academics and Events online, users can then fully utilize the R25 module for Resource changes and the S25 module for recommended Schedule changes.

10.4 Luminis Web Portal – The Zone

As part of the infrastructure improvements, a Luminis portal that is a part of the Banner Enterprise System was implemented several years ago to provide centralized access to the district-wide enterprise systems with single sign-on capabilities for Banner and other systems such as Blackboard. The Luminis portal product contains the automatic links to all the Banner modules as well as provides the tools to setup links to any other Web based applications, thus creating a unified digital campus. In general, portals make information, services, communication, and collaboration easily accessible to constituents anytime and anywhere, which in turn improves the institution’s efficiency and staff productivity.

For CLPCCD, the Luminis portal is called “The Zone” and provides custom views for students, faculty, and staff to view information that is pertinent to their roles within the colleges. The system provides student email to all students using Gmail as the backend, which is called Zonemail at CLPCCD. The Zonemail is utilized to send electronic correspondence to students in place of hard copy mailers. Students use Zonemail for their



online Waitlist for courses that they want to register for. The College Admissions & Records and Financial Aid departments use Zonemail to notify students of important deadlines or information requiring their action. The Zone portal has other features available such as targeted announcements and Group Studio that provides shared communication for clubs and committees.

10.5 Banner Enrollment Management Suite and Advancement Module (for Alumni)

For the instructional and student services improvements, the Banner Enrollment Management Suite was selected to give better visibility on the enrollment trends, student course needs, and alumni tracking. These integrated Banner modules provide a comprehensive web-based Enrollment management solution for prospective students, admitted/matriculated students, and alumni. These software modules will track marketing contacts, recruitment efforts, enrollment projections, and retention with the objective to support outreach, advertising, and marketing efforts district-wide.

This software suite also contains Argos reporting and analytic tools that include data views, data warehouse, and analytic capabilities for usage with the Enrollment management modules. The Argos reporting tool is also used for the other standard Banner modules already installed at CLPCCD such as Student, Finance, Financial Aid, Human Resources, and Payroll. The areas that have implemented the Argos tool to-date include Finance, Human Resources, and the College/District Enrollment Management reporting. Those areas that are in the process of implementing Argos include the Student Degree Works System to support Student Ed Plans as part of the Student Success Support Program (SSSP) and the College Institutional Researchers.

An Advancement module was also purchased with this suite and addresses the Foundation business used by the colleges in coordination with the alumni information. This Banner Advancement module will address the alumni association, parent, trustee, and friends to procure funding for programs and projects. It records contacts, fund raising goals, information on the foundation and organizational donors, campaigns, and gifts.

The Enrollment Management suite of products is not installed as of yet due to the magnitude of the college resources required across both campuses to implement the system since it impacts all departments across the district. The colleges are currently involved with other higher priority projects for new automation in their environment such as the Student Success Support Program (SSSP), Degree Works, and Document Management System. It is anticipated that activity will begin on this Enrollment Management suite in late 2015 following the full implementation of these projects.

10.6 Web for Faculty Self Service (Class-Web)



For more on-line features for students and faculty, the Web for Faculty Self Service system was installed which allowed faculty to use the Web for key functions on the Banner System. These included student grade rosters, student grades, and grade posting. The Web for Faculty module provides online services to faculty for entering grades, viewing course rosters, managing course enrollments, viewing course loads and schedules, customized “drop” sheets, and Mid-term Progress report. Query functions and Web for Employee features were also included when the Web for Faculty was implemented several years ago.

10.7 Hardware and Software Multi-Year Maintenance Agreements

The District Data Center resides in the Information Technology (IT) Building at Las Positas College which was Measure B funded and all hardware and software supporting the District Enterprise Systems is an integral part of that IT Building. All the Enterprise servers used to support the enterprise software is maintained under a centralized network infrastructure within the IT Building, all of which was Bond funded.

As the District researched new alternatives for cost savings in light of the current State budget situation, all software and hardware maintenance contracts that were funded by the District were evaluated and vendors were contacted to determine what multi-year options were available. Hardware and software products that meet the Bond criteria were purchased with Measure B funds. Included with the initial hardware and software purchases is maintenance for a specified period which varies depending on the vendor. With the current economic situation, vendors were more open to extending longer term maintenance agreements to their customers, which lock in the maintenance costs at pricing that provides significant savings to the customer by avoiding the yearly increases which can vary year to year. Therefore, all equipment within the District Data Center and software residing on that equipment was reviewed for multi-year maintenance contracts. As part of the facility project for the Information Technology (IT) Building at the Las Positas campus that houses the District Data Center, hardware and software upgrades for the district-wide enterprise systems were done and extended maintenance contracts were negotiated with vendors for 4 to 5 years. These extended contracts provided significant discounts to the district as well as transferred costs from the operational budgets to the Bond budgets, which was critical during our restricted budget situations.

The estimated savings for these extended vendor agreements was \$720K per year or \$4.2M total for the five year period from 2010 through 2015, which ends in fiscal year 2015-2016. These extended maintenance agreements are included in the Bond Technology Cost Summary charts in Section 12.0 under two funds for 551010 for the District IT Hardware/Software and 551017 for the specific college enterprise systems like Blackboard and the Library Systems.



10.8 Other Software Application Systems (Not Bond Funded)

There are numerous other software application systems that have been implemented at CLPCCD district-wide for the colleges and district which are not part of the Measure B Bond. The application systems mentioned above are just the short list of products that qualified for Bond funding. The District ITS Strategic Plan, which is posted on the district website under “Technology Services”, contains the comprehensive list with descriptions of the CLPCCD Application Systems implemented during the period since 2007 that were being done concurrent with the Bond Measure B activity. In spite of the state budget situation over the past few years, CLPCCD is strategically in a very good position since we already purchased new software needed for the current priority development projects so that implementations can proceed as planned. A brief list of all the Banner and Third Party System projects that the District ITS staff has completed or is currently implementing is provided in the following Section 11.0.

11.0 BANNER AND THIRD PARTY PROJECTS

SUMMARY OF PROJECTS FROM “DISTRICT ITS STRATEGIC PLAN” (June 2014)

The District Strategic Plan for ITS Projects was approved by the Chancellor’s Cabinet members who reviewed new college and district requirements for enhanced or improved system features. The District Strategic Plan for ITS Projects is developed in collaboration with the Chancellor’s Cabinet, College Deans, Directors of Banner User Groups, and College Technology Committees. The ITS Plan includes only major development projects, not routine operational tasks, system maintenance, and service requests for minor changes. Additions for new critical projects are made as the need arises and includes state and regulatory mandates as well as changes to accommodate contract negotiations. Besides consideration of the state and regulatory directives, the Cabinet prioritization of Banner projects considers 3 factors: the impact to students, improved productivity, and reduction of costs. All Technology Plans including the Bond are posted on the District Website under “Technology Services”. The Bond projects are described in the “Measure B Bond Activities – Accomplishments and Future Plans 2005-2017”. The Banner and other Third Party projects are described in the “District ITS Strategic Plan”. Status of the ITS Projects is provided below in three categories:

- **“Completed” Category A1,**
- **“In Progress” Category A2, and**
- **“To Be Scheduled” Category A3.**



A1. “Completed” Projects (Completion Dates provided by Year)

1. Student Success Support Program (SSSP) – Major Banner changes to student priority registration & MIS State reporting as well as tracking/loading history of student orientations, assessments, & SEPs data (Fall 2013/Spring 2014)
2. Online Chat capabilities e-Advising for Counseling using new feature in SARS products (Chabot Counseling Spring 2014, LPC Counseling Fall 2014)
3. Argos Reporting for Enrollment Management (Spring 2014)
4. Banner Document Management System – College Admissions & Records (Summer 2013/Fall 2013), LPC Financial Aid (Fall 2012), Payroll checks (Fall 2012) and Purchasing (Spring 2014)
5. Conversion of new Library System OCLC “Worldshare” from the current “Sirsi” System for improved functionality, funding and conversion (Fall 2013/Spring 2014)
6. Replacement of Chabot Video-Conferencing Equipment for Nursing Program & Valley Care Medical (4 classrooms Summer 2013 & Skills lab Spring 2014)
7. Expansion of AT&T Opteman WAN data lines for increased speed for all locations and addition new data lines for Chabot Nursing to Valley Care (Spring 2014)
8. Fourth cycle for upgrade of Cisco switches, routers, and firewalls for all locations (Spring 2014)
9. Student Tracking/Notifications of 1098T for IRS reporting of SSN & TIN (Spring 2014)
10. Chabot Mentor Teaching Program – Automatic invoicing and payments with interface to the Banner System (Fall 2013)
11. Argos Reporting for Business Services for Ledgers, Budgets, Expenses, & Fixed Assets (Fall 2012/Fall 2013) and Human Resources for Affordable Care Act (Spring 2014)
12. New system for data analysis & reporting for the Chabot “Hayward Promise Neighborhood” program with CSUEB (Fall 2012/Summer 2013/Ongoing)
13. Consolidated Next Generation Storage SANS for large volume storage for Banner Document Management System and Email (Fall 2013)
14. BOGW XAP System through CCCApply for Chabot Financial Aid (Fall 2013)
15. New data collection & reporting system for Gainful Employment (Fall 2013)
16. Chabot Online Nursing Application Phase3 Student provides points for selection process (Fall 2013/Spring 2014)
17. Banner System changes for new state mandated Course Repeatability Policy and for handling of course equivalencies and new “family” course groups (new rules for course repeats and curriculum equivalencies Spring 2013, Families Fall 2013).
18. Grade Mailers replaced with SARS-Call email (Fall 2013)
19. Rewrite Budget processing for furloughs and reduced workload for tracking (Fall 2013)
20. Annual Banner upgrades for Human Resources/Payroll and Finance (Fall 2013)



21. Multi-year Banner upgrades for Financial Aid for regulatory mandates (all terms 2013)
22. Automatic Upload of Journals for Business Services (Fall 2013)
23. Review & Evaluation of College of Canyons in-house Program Review System – COC going to Curricunet SLO Assessment (Fall 2013)
24. Implemented DataCove Archive System for Groupwise Email (Summer 2013)
25. Virtualization of Servers for District Data Center with Blade servers (Summer 2013)
26. Implemented capability for automatic recurring accounts payable payments for Business Services (Summer 2013)
27. Fully automated the Federal ISIR load of Financial Aid student information to Banner which also included the new regulations for the California Dream Act (Fall 2013)
28. Implemented additional Financial Aid features on Banner for students to view Financial Aid awards with pending actions noted and the Financial Aid “shopping sheet” capability for statistical and pricing information on Title IV aid. (Fall 2013)
29. eTranscripts (through CCCApply) for Automatic Transcripts to Send and Receive (Summer 2013)
30. Financial Aid Upgrade for 2013-2014 Aid Year (Summer 2013)
31. Faculty Contract modification to implement new “load sheet” (2013)
32. Faculty Contract modification to create consistent tracking system for “workload banking” (2013)
33. Student Credit Card Payments – convert from Official Payments to Heartland Payment System for annual savings (2013)
34. Banner Infrastructure Upgrade to all Banner modules and addition of Fusion Middleware component required as a follow on to Oracle 11G Database upgrade (2013)
35. Changes for new State Mandated Course Repeatability Policy for course repeats, equivalencies, and new “family” course concept still being defined. (2013)
36. New Financial Aid features in Banner and enhanced automation for routine processes – Transfer Monitoring and process for new year setup and roll (2013)
37. Evaluation of new Banner CALB Financial Aid module as separate install for BOGW – Evaluation completed and no need to do CALB at this time. (2013)
38. Banner Upgrade for HR/Payroll for new STRS/PERS reporting (2012, 2013)
39. Finance & Human Resources Regulatory release with Position Control and CALB HR (2012,2013)
40. Priority Registration changes based on units (2012)
41. Faculty Contract modification for “Pay by CAH” (2012)
42. Faculty Contract change to provide online forms routed to A&R for “Add” and “Drop” actions after census dates (2012)
43. Faculty Contract modification for handling of Summer 2012 Autopay (2012)
44. Oracle 11G Database Upgrade - Phase 1 prior to Fusion Phase 2 (2012)



45. Updates to Banner Financial Aid to handle the future Dream Act requirements (2012)
 46. Banner Automatic Email ROEmail for Financial Aid Award Letters (2012)
 47. New Financial Aid features in Banner and enhanced automation for routine processes – Email Correspondence, ISIR Load (2012)
 48. Student Eligibility Form for Athletics initially for Chabot and then LPC (2012)
 49. Online Technology Request Form for Chabot Technology Committee to satisfy Accreditation (2012)
 50. Chabot Online Nursing Application Phase 2 for automating the selection process (2012)
 51. Priority Registration for Veterans, Foster Care, and other changes (2012)
 52. Regulatory Finance, HR, and Accounts Receivables release upgrades for calendar year end (2012)
 53. Addition of summary statistics for student majors on the CLASS-Web faculty Roster screen to show the count of students by major for a specific course (2012)
 54. SARS-TRAK for LPC for Financial Aid tracking of students (future replacement for STARS) (2012)
 55. “Hayward Promise Neighborhood” reporting to identify Chabot population (2012)
 56. Additions to Institutional Research data repository for Veterans data back to 2004 (2012)
 57. Audit for Hybrid Courses included new reporting and calculation modifications (2012)
 58. Evisions Update to Form Fusion for BDMS, AP, Payroll, PO, and Mailers (2012)
 59. Online Submission of Help Desk Ticket in addition to phone and email for Chabot (2012)
 60. New Accounts Payable & Payroll Checks (2012)
 61. ASCC/ASLPC checks at college sites (2012)
 62. Change to online Payroll data to allow access to prior periods during Payroll processing (2012)
 63. Online Payroll Paycheck stub using BDMS to replace mailed copies of auto deposits (2012)
 64. Title V changes – various changes with the latest being Repeat Checking changes (2010,2011,2012)
 65. State MIS Reporting changes from State Chancellor’s Office (2010,2011,2012)
 66. Banner Waitlist for students and faculty (2010,2011)
 67. Expansion for Waitlist of Banner (Ellucian) Luminis Web Portal The ZONE and Student Gmail (2011)
 68. CurricUNET Course Curriculum Phase 1 (2010,2011)
 69. SMTP Blade Server for SARS-CALL to handle large volume of student emails for all systems SARS-CALL and Banner emails (2011)
 70. Faculty Contract modification for additional “load factor” for selected classes (2011)
 71. Online Nursing Application Phase 1 for online application (2011)
 72. Surplus System for purchase by students and staff (2011)
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73. Inventory Bar Code Scanning System (2011)
74. ePAF Personnel Action Form Phase 1 for Recurring hires (2011)
75. Banner (Ellucian) SAAS Cloud Technology for Financial Aid (2011)
76. “Gainful Employment” reporting for State Chancellor’s office Phase 1 (2011)
77. Evisions upgrade for Higher One automation of file transfer for Financial Aid (2011)
78. New tracking system for FTES state reporting requirements to support audit findings (2011)
79. Additional phases for new “Gainful Employment” reporting for State Chancellor’s office (2011)
80. State Reporting for BOGW students included modifications based on withdrawal date (2011)
81. New MIS Reporting data elements for special projects and EOPS (2011)
82. Tutoring addition for Chabot using SARS-GRID (2010)
83. Faculty Obligation Reporting new features for release time and tracking of regular and overload assignments (2010)
84. Oracle Dataguard Installation for Database recovery (2010)
85. Vision Solutions Installation for Operating System recovery (2010)
86. Banner (Ellucian) Upgrade from release 7 to 8 (2009)
87. Oracle 10G Database Upgrade (2009)
88. PeopleAdmin Applicant Tracking for Hiring (2009)
89. Banner (Ellucian) Luminis Web Portal The ZONE (2008,2009)
90. Fixed Assets Depreciation (2008,2009)
91. Higher One Debit Card for Financial Aid (2008)
92. Student Email with Gmail through The ZONE (2008)
93. Dedicated Help Line for student ZONE and GMAIL calls (2008)
94. Single Sign On for Blackboard and Gmail through The ZONE (2008)
95. Crystal Reports (WebI) Ad hoc Reporting (2007,2008)
96. CollegeNet Room Scheduling for Academics (2007,2008)
97. Third Party Products - SARS-Trak, SARS-Grid & SARS-CALL, eSARS, PC-Trak, STARS LPC only, PE Chabot only (2007,2008)
98. Web for Faculty for Online Grades and Drops (2007)
99. BossCars Parking Permits (2007)
100. Web for Finance for Expenses and Budgets (2006,2007)
101. Elumens Student Learning Outcome (2006,2007)
102. Credit Card Payments & Installments – Official Payments & FACTS (2006)

A2. “In Progress” Projects (Partially “Completed” or Assigned/Scheduled – Target Dates provided by Term)

103. Banner (Ellucian) Degree Works for Student Degree Audit and Student Ed Plan – Chabot SEP (Spring 2013) - (Fall 2014/Spring 2015 All Counseling, Summer 2015 Students)
 104. Banner Document Management System (BDMS) to replace ATIFiler System – Phase 1 A&R(Chabot Summer 2013 and LPC Fall 2013) and LPC Financial Aid
-



- (Fall 2012), Phase 2 Payroll Checks (Fall 2012), Purchasing (Spring 2014), and Business Services (Fall 2014), Phase 3 Chabot Financial Aid (Fall 2014) and Human Resources & Other Groups (Spring 2015)
105. ARGOS Report Tool for Finance Ledgers/Expenses/Budgets (Fall 2012/2013) followed by other areas Enrollment Management (Spring 2014), Human Resources (Spring 2014), Degree Works (Fall 2014), Institutional Research (Spring 2015), and other Groups (Spring/Summer 2015)
 106. Replacement of Grade mailers and other notifications through post office with electronic correspondence with option to request hard copy by exception – working with college A&R (Summer 2013 Grade Mailers, Summer 2014 Other Mailers for appointments, confirmations, mid-term, & prerequisites)
 107. Expansion of Online submission of Help Desk Tickets to District & LPC like did for Chabot (Fall 2013 Chabot & District, LPC Fall 2014)
 108. Banner Mobile Applications – New Cloud offering with release upgrades for students grades, course schedules, and account holds (Pilot Spring 2014, Live Fall 2014)
 109. Software Review for Electronic Signature – DocuSign or Adobe – New Adobe Agreement through State Chancellor’s office (Summer 2013), Digital Signature capability (Spring 2015)
 110. CollegeNet Room Scheduling – Phase 2 for Events in addition to existing Academics portion (Spring/Summer 2015)
 111. Online Chat capabilities e-Advising for Counseling using new feature in SARS products (Chabot Counseling Spring 2014, LPC Counseling Fall 2014)
 112. CurricUNET Addition to current catalog system - Phase 2 for Program Review & SLO Assessment modules to follow after the October accreditation review (Chabot SLO Fall 2014, Program Review Spring 2015)
 113. Web for Finance for online Requisitions using BDMS for storage PO attachments with Evisions software upgrade (Summer 2014)
 114. Review of modifications to multi-campus handling to replace customizations with Banner baseline for Financial Aid module (Review Fall 2013, Live Spring 2015)
 115. Convert to OpenCCCApply System through State Chancellor’s office to replace XAP CCCApply System for student registration (Summer 2014)
 116. Convert to BOGW Open CCCApply from XAP System for Financial Aid (Fall 2014)
 117. Automation of Faculty Office Hours as follow on to Pay by CAH (Fall 2014)
 118. Personnel Action Form ePAF Phase 2 for new jobs for existing employees (Spring /Fall 2015)
 119. System for tracking the Chabot “Hayward Promise Neighborhood” program with CSUEB (Fall 2012/Ongoing)
 120. Review of ZONE with Technology Committee and Students for improvements to webpage (Fall 2014/Spring 2015)
 121. Sharing of Documents using Luminis Group Studio feature through The ZONE (Available/Procedural)
-



122. Release of Gmail for faculty using Zonemail like students do to share Google Docs (Available/Procedural)
123. Conversion Novell Operating System to Microsoft Active Directory with college integration (Chabot Spring 2014, District Summer 2014, LPC Summer 2014)
124. Email Archive DataCove System with conversion of Groupwise archives to be followed by Email migration to Outlook (Summer 2013 Email Archive, Summer 2014/Fall 2014 Email)
125. Conversion from Windows XP to Windows 7 with Office 2010 following testing of critical systems for compatibility – Colleges have installed Win 7 in instructional areas but not administrative areas (System testing Fall 2013/Spring 2014, District Summer 2014, LPC Fall 2014, Chabot Fall 2014)
126. Regulatory Upgrades for Financial Aid 3-4 times annually (Ongoing)
127. Regulatory Title V Changes – ongoing as new features are finalized (Ongoing)
128. Evaluation and implementation of new SARS product offering for “text” capability in addition to current email features (Spring/Summer 2015)
129. Web Self Service for Student Request of Transcripts (Spring 2015)
130. Human Resources/Payroll and Finance Banner Upgrades (Fall 2014)
131. New system for Human Resource tracking & reporting employees who work less than 30 hours for Affordable Care Act (ACA) (Spring/Fall 2014)
132. Elumen SLO System – LPC to upgrade to Cloud SaaS release – (LPC Fall 2014)
133. Degree Works Software upgrade (Summer 2014)
134. Banner Document Management Software upgrade (Fall 2014)
135. New exception reporting to track adjunct faculty who may exceed 67% rule (Fall 2014)
136. Banner modifications for new negotiated handling of Athletic stipends (Fall 2014)
137. Automatic Student Billing – dependent on reconciliation of student payment history (Summer 2015)
138. Additional COTOP process for student fees owed - currently have COTOP Financial Aid loans (Summer 2015)
139. Major Oracle database upgrade to release 12 (Summer 2015)

A3. “To Be Scheduled” Projects (Dependent on other projects or available resources or On hold)

140. Banner (Ellucian) Enrollment Management & Contact System for Marketing
 141. New Banner Tool for Data Views (ODS) to support Argos Report Tool
 142. New Banner module for Data Warehouse (EDW) capabilities for trend analysis
 143. Banner (Ellucian) Advancement module for Alumni
 144. Automate Timesheets online using Banner
 145. Implementation of WebEx type Video tool to allow faculty ability to login and participate in classes remotely via Web requested by College Technology Committees
 146. Evaluation of Blackboard vs. other products on market requested by College Technology Committees
 147. Centralized Streaming Video Services for colleges and district
-



148. Lecture Capture capabilities for faculty and students
149. Expand Video Conferencing capabilities at all locations where appropriate
150. Evaluation of the vendor offerings for the new industry trend of MOOCs for possible use at the colleges for Basic Skills classes, preparation for Assessment tests, or new higher level classes that are not currently offered at the colleges.
151. CALB (California Banner version – On Hold) of Banner baseline software (On Hold due to major scope and impact on all user modules) – provides no new features for CLPCCD
152. Luminis 5.0 Upgrade – Vendor delays due to conversion and new release available in Fall 2014
153. Common Matching for all Banner Modules – (On Hold) not required by CLPCCD
154. Grant Accounting – (Deleted) Evaluated potential usage for Bond accounting & not applicable

12.0 BOND TECHNOLOGY COST SUMMARY

The Measure B Bond projects contain new construction projects or facility renovations that require technology improvements in the data network and computer equipment. The new technology improvements required to support this facility activity are addressed in two categories.

- The first category includes technology changes related to the facility structure such as fiber optic and copper wiring and conduit between buildings required for the District networking infrastructure. These types of costs have been incorporated in the facility costs for all the college buildings for both renovations as well as new structures since these improvements are an integral part of the building structure or are in the ground surrounding the building.
- The second category includes classroom equipment, network devices, communication equipment to support data, video, or voice, and all technology advancements that support the instructional environment. These types of costs are either segregated to the specific college or aggregated for shared network and communication equipment. This second category is the types of innovations that are included in the Bond Technology funds for Measure B and are centrally managed by the District's Chief Technology Officer.

A review and reprioritization of the Measure B funds was completed in October 2013. The Chancellor's Senior Leadership Team (SLT), which includes the Chancellor, College Presidents, Vice Chancellors, and Chief Technology Officer, went through an extensive review of all the remaining Bond funding. This review resulted in a recommendation with the objective to make allowance for a new building at each of the two college campuses and to accelerate the remaining projects within a two- year period from 2013 to 2015. The proposed budgets which identified the remaining projects to be completed at the colleges was approved by the Board of Trustees in January 2014. This new plan resulted in a new Academic Building at Las Positas and a new or renovated Biology



building at Chabot and still preserved the other critical needs for the college's "small projects" list, technology, M&O, energy, and construction project management.

CLPCCD ITS has developed a very detailed budget for the remaining bond Technology projects. As of September 2013, the previous Bond Technology fund balances of \$13.2M were reduced by 34%, resulting in a remaining balance of \$8.7M, to be completed in a two-year period from 2013 through 2015. This impacted all locations for college and enterprise systems.

The available funding addresses the projects accomplished this past year 2013-2014, and those identified for the upcoming 2014-2015 year. All technology projects are listed by categories to support college and district-wide infrastructure requirements under Measure B. The twelve equipment categories include:

1. Network Equipment – Routers/Switches/Connectivity
2. Other Network Devices - Firewalls, Wireless, Network Monitoring Tools
3. Cabling - Critical needs not covered by Facilities projects
4. Installation/Implementation/Integration Services
5. Desktops (PCs,MACs) and Laptops/Tablets
6. Software (Facility or Infrastructure Related) - no funding due to budget
7. Audio-visual (Supplemental and upgrades to Facilities projects)
8. Servers (Enterprise and College Specific)
9. Printers - no funding due to budget
10. Telecommunications (Telephone)
11. Multi-Year Maintenance Agreements (5 years) and Enterprise Systems
12. Other Peripheral Equipment (UPS, GoPrint, Equipment Components/Racks)

The Bond Technology budget and expenses are provided in the cost charts in Sections 12.1 through Section 12.2. The first set of cost charts provides the Bond Measure B budgets and expenses for all the Technology improvements made throughout the Colleges and District from the start of the Bond in 2005 through September 2013. The second set of cost charts provides a summary of the IT Bond budget by technology category for the next 2-year period from 2013 through 2015 followed by a detail list of the IT items that are included in each of these technology categories. A summary of the Bond Technology expenditures for the past fiscal year 2013-2014 is also provided and broken out by equipment category. These costs relate to all the Information Technology projects as described in Sections 1.0 through 11.0 which identify the scope of the technology improvements to be accomplished within this two-year period.

It should be noted that most of the technology upgrades and additions to the college campuses over the past several years have been funded by the Bond Measure B. Due to state budget issues, the operational funds for technology at both the Colleges and District have



been reduced substantially. Only those few products that were not eligible for bond funding remained in the operational budgets. Therefore, it is imperative to continue to utilize the balance of the Bond Technology funding prudently and strategically, in order to achieve the most technology advancements possible with these limited remaining funds. CLPCCD ITS has efficiently utilized the Bond Technology dollars in order to perform the necessary replacements and upgrades of equipment to modernize our instructional environment campus-wide. The most recent equipment procurements have been forward-looking so as to maximize the life span of the equipment and performance of the infrastructure. The anticipated lifetime of the technology equipment is as follows:

- Network equipment: 7-10 years
- Desktop/laptop computers: 4 years
- Servers: 5-7 years
- Printers: 5 years
- Audio-Visual equipment: 7 years

As such, equipment procured in the last one to two years from 2013 to 2015, will continue to provide a robust platform for CLPCCD users for several years in the future. Once the Bond Technology funding is spent, and the performance of the technology infrastructure begins to degrade, the College and District operational funds for technology will need to be increased to cover these technology replacement costs in the future.



12.1 Bond Technology Cost Charts #1 & #2 Budgets and Expenditures through September 2013

The first set of cost charts provides the Bond Measure B budgets and expenses for all the Technology improvements made throughout the Colleges and District from the start of the Bond in 2005 through September 2013. The Technology Bond budgets include several Bond funds which separate the costs for district infrastructure and enterprise expenses, Chabot campus specific technology expenses, Las Positas campus specific technology expenses, and other funds for extended hardware/software maintenance agreements or other unique hardware/software expenses. Desktop costs for the four-year life cycle replacements are included in the Bond Technology costs, both for initial new computers and for replacement computers. The Total Expenditures for Bond Technology through September 2013 are \$21,215,206 with a fund balance remaining of \$13,174,839 for both colleges and shared district wide IT projects.

This first set of Bond Cost charts with expenditures through September 2013 includes:

- (1) Chart #1 - **“Bond Technology Budgets and Expenses by Funds for All Sites”**
- (2) Chart #2 - **“Bond Technology Costs by Category for All Funds and Sites”**

Some of the cost categories have had low expenditures in the earlier years of the Bond activity, such as Audio-Visual and Video equipment. These will now increase in the next two-year period from 2013 to 2015 in order to provide technology enhancements to areas of the two college campuses that have not yet been renovated with more modern facilities. The audio-visual equipment costs for new buildings or renovated buildings were initially part of the FFE Facility funding as planned. As the Smart Classroom configurations require upgrades and replacements as part of the standard life cycle improvements, these subsequent audio-visual costs will need to be funded by the CLPCCD ITS funds. In addition to Classroom audio-visual, there will be a focus on implementing Video-Streaming capabilities for both colleges, to be utilized for the instructional programs where appropriate. The Video Streaming will require continued upgrades to the data network infrastructure as bandwidth becomes saturated and access speeds are impacted. Also, expansion of the wireless, both inside classrooms and extensions to the outside areas, will also continue to be a major emphasis to provide more comprehensive service for the mobile and BYOD devices.

**CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
BOND TECHNOLOGY (IT) BUDGETS AND EXPENSES BY FUNDS FOR ALL SITES**

CHART #1 - As of September 30, 2013

Fund	Fund Title	Current Budget	Total Expenses to Date	Available Balance	Percent Expended
551010	Information Technology & Tech Upgrades, District & Both Colleges	11,860,677.37	8,043,488.70	3,817,188.67	68%
551011	Classroom, Lab Equipment, Chabot College	11,738,117.63	6,153,948.21	5,584,169.42	52%
551012	Classroom, Lab Equipment, Las Positas College	8,315,719.96	4,979,261.65	3,336,458.31	60%
551013	District ITS Data Center Upgrade	17,269.28	17,269.28	0.00	100%
551015	Sungard Enrollment Management Suite	675,728.00	675,728.00	0.00	100%
551016	IBM Enterprise Server-Sungard Banner System	472,724.22	472,724.22	0.00	100%
551017	Enterprise ERP Hardware/Software	1,309,808.00	872,785.48	437,022.52	67%
TOTAL FOR ALL "TECHNOLOGY" BOND FUNDS		34,390,044.46	21,215,205.54	13,174,838.92	62%
<u>OTHER BOND FUNDS FOR IT BUILDING AND COPIERS</u>					
<u>CONSTRUCTION FOR NEW DISTRICT DATA CENTER – APRIL 2010</u> (Funding part of Facilities not Technology Equipment Fund)					
553850	District- wide Information Technology Building at LPC	7,138,685.37	6,869,220.08	269,465.29	96%
<u>RICOH COPIER EQUIPMENT WITH COPY, PRINT, SCAN FEATURES</u>					
551055	District-wide Multi-Function Copier Equipment	803,468.00	803,468.00	0.00	100%

**CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
BOND TECHNOLOGY (IT) COSTS
BY CATEGORY FOR ALL FUNDS AND SITES**

CHART #2 - As of September 30, 2013

Item No.	Category Title	Chabot	Las Positas	District	Total All Sites	Percent
1	Network Equipment - Routers/Switches/Connectivity	620,000.00	475,158.00	1,453,376.61	2,548,534.61	12%
2	Other Network Devices - Firewalls, Wireless, Network Monitoring Tools	453,870.80	82,405.00	689,209.71	1,225,485.51	6%
3	Cabling (Supplemental to Facilities)	110,078.00	67,031.00	53,580.00	230,689.00	1%
4	Installation/Implementation/Integration Services	81,951.40	7,600.00	1,245,543.40	1,335,094.80	6%
5	Desktops/Laptops	3,836,110.86	3,679,818.00	77,975.00	7,593,903.86	36%
6	Software (Facility or Infrastructure Related)	19,692.00	10,561.00	1,484,601.74	1,514,854.74	7%
7	Audio-visual (Supplemental to Facilities FFE)	172,411.90	201,072.65	69,721.00	443,205.55	2%
8	Servers (Enterprise and College Specific)	257,573.25	227,285.00	943,261.68	1,428,119.93	7%
9	Printers	152,284.00	92,363.00	12,374.00	257,021.00	1%
10	Telecommunications (Telephone)	304,622.00	83,165.00	3,371.54	391,158.54	2%
11	Multi-Year Maintenance Agreements (5 years)	-	-	3,815,663.00	3,815,663.00	18%
12	Other Peripheral Equipment (UPS, GoPrint, Equipment Racks)	145,354.00	52,803.00	233,318.00	431,475.00	2%
TOTAL COSTS FOR ALL "TECHNOLOGY" CATEGORIES		6,153,948.21	4,979,261.65	10,081,995.68	21,215,205.54	

12.2 Bond Technology Cost Charts #3, #4 & #5 for Period 2013-2015 - Budgets and Expenditures by Year

The second set of charts provides the IT Bond budget by technology category for the next two-year period from 2013 through 2015. These costs relate to all the Information Technology projects as described in Sections 1.0 through 11.0, which identify the scope of the technology improvements within the IT plan. These technology improvements, as defined by the “MUST” projects, are prioritized to upgrade and improve technology before performance or equipment obsolescence negatively impacts college activities. This is in compliance with the CLPCCD ITS standards for equipment replacements in accordance with industry standard practices.

This second set of Bond Cost charts with budgets and expenditures for period from 2013 through 2015 includes:

- (1) Chart #3 - **“Bond Technology Budgets for 2013 to 2015 by Equipment Category”**
- (2) Chart #4 - **“Bond Technology Budgets with Detail List by Category and Location”**
- (3) Chart #5 - **“Bond Technology Expenditures from 2013 to 2014 by Category”**

Chart #3 shows the combined two-year budget from 2013 through 2015 which totals \$8,713,473 for all locations and for the twelve different equipment categories. All of the items identified for each of the categories were evaluated and deemed critical “MUST” IT items that either support current Facility construction/renovations, or that are required to maintain the IT infrastructure connectivity and performance within the boundaries of the useful life of the equipment. Based on this latest two-year plan, the equipment upgrades will extend the technology several years beyond the end of the Bond IT funds in 2015, thereby allowing CLPCCD time to secure other funding sources for technology in the future.

Chart #4 provides a detailed list of the IT items that are included in each of the technology categories and for each of the locations, for a total of \$8,713,473 for Bond Technology funds for the two-year period from 2013 through 2015. From the previous September 2013 Bond IT fund balance of \$13,174,839, the IT budgets were reduced by 34% or by \$4,461,366 in order to contribute funding to the two new or renovated buildings for the colleges. On the chart, the primary twelve categories are enumerated with each of the various equipment purchases shown by location and by year. The columns for each of the 2013-14 and 2014-15 fiscal years with the “MUST” IT projects identify the upgrades and/or expansions that are required to maintain the current functionality along with critical mandatory improvements.

Besides the \$8.7M Bond Technology budget, the cost chart shows the equipment required for the two new construction projects for the Academic Building at Las Positas and the renovated Biology Building at Chabot. The new building equipment funds are not included in the \$8.7M for all technology projects. The technology requirements for the new buildings will be funded separately in conjunction with the new facilities

construction budget. For budgetary purposes, the projected equipment costs for the new building is displayed in the far right columns and is highlighted in “blue” for Las Positas and in “yellow” for Chabot. This new building equipment includes network equipment for switches and routers, desktops/laptops/tablets, wireless, and other devices such as printers/scanner/copiers.

Chart #5 provides a summary of the Bond Technology expenditures for the past fiscal year 2013-2014, broken out by equipment category for a total of \$4,230,298. All the Cisco switches, routers, and firewalls were consolidated into the Network Equipment bid in March 2014 in order to maximize the equipment discounts received. Some purchases were deferred into the 2014-2015 year, such as the desktop/laptop purchases that had to be delayed because of the expiration of the purchasing contract with Atacom for Hewlett-Packard equipment. As a result, the desktop/laptop purchases were prioritized based on new construction needs first, followed by the third cycle of unit replacements or upgrades. Using this criteria, Chabot desktop/laptop purchases were lower than Las Positas in the first year 2013-2014, and therefore, Chabot will have a larger volume of purchases in the second year 2014-2015. A new bid has been prepared for desktop/laptop/tablet equipment for future purchases in 2014-2015.

**CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
 BOND TECHNOLOGY (IT) "MUST" PROJECTS FOR TWO YEARS 2013 TO 2015
 BY CATEGORY FOR ALL FUNDS AND SITES**

CHART #3 - As of October 29, 2013

Item No.	Category Title – Two Years: 2013 TO 2015	"MUST" PROJECTS 2013-2014	"MUST" PROJECTS 2014-2015	TOTAL FOR TWO YEARS 2013-2015	Percent
1	Network Equipment - Routers/Switches/Connectivity	1,132,709.20	363,889.00	1,496,598.20	17%
2	Other Network Devices - Firewalls, Wireless, Network Monitoring Tools	114,920.00	634,182.40	749,102.40	9%
3	Cabling (Supplemental to Facilities)	-	-	0.00	0%
4	Installation/Implementation/Integration Services	182,300.00	128,300.00	310,600.00	4%
5	Desktops/Laptops	1,916,150.00	1,678,000.00	3,594,150.00	41%
6	Software (Facility or Infrastructure Related)	-	-	0.00	0%
7	Audio-visual (Supplemental to Facilities FFE)	503,000.00	673,000.00	1,176,000.00	13%
8	Servers (Enterprise and College Specific)	312,000.00	506,000.00	818,000.00	9%
9	Printers	-	-	0.00	0%
10	Telecommunications (Telephone)	32,500.00	32,500.00	65,000.00	1%
11	Multi-Year Maintenance Agreements (5 years)	110,000.00	327,022.52	437,022.52	5%
12	Other Peripheral Equipment (UPS, GoPrint, Equipment Racks)	67,000.00	-	67,000.00	1%
TOTAL COSTS FOR ALL "TECHNOLOGY" CATEGORIES 2013 TO 2015		4,370,579.20	4,342,893.92	8,713,473.12	

CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT

Current Budget Balance Remaining as of Sept 2013 13,174,838.92

BOND TECHNOLOGY (IT) FUND BALANCES REMAINING

IT funding reduction (34%) as of Oct 2013 4,461,365.80

ESTIMATED FUNDING ALLOCATION

Remaining IT Funding Balance as of Oct 2013 8,713,473.12

BY CATEGORY FOR ALL FUNDS AND SITES

FOR FISCAL YEARS 2013-2014 AND 2014-2015

CHART #4 - As of October 29, 2013		PROJECTS FROM THE IT BOND PLAN			PROPOSED PRIORITY CONSTRUCTION PROJECTS FOR CAMPUSES	
		A	B	A+B	LPC Academic Building	Chabot Biology Building
Item No.	Category Title	Must 2013-2014	Must 2014-2015	Must Totals (Updates/Expansion to Maintain Current Functionality)		
1	<u>Network Equipment - Routers/Switches/Connectivity</u>					
	<u>Chabot</u>					
A	Chabot B100/Library switch (new IDF) 4506		60,493.00	60,493.00		
B	Replace 4506 Supervisor engines (4) - 2009 switches partial end of life	84,462.40		84,462.40		
C	Replace 4506 switches (4) - 2005 switches full end of life	241,972.00		241,972.00		
D	Chabot New Biology (two 4506)					120,986.00
	<u>Las Positas</u>					
E	LPC Library B2000/Faculty Bldg B2100 - new 4506	60,493.00	60,493.00	120,986.00		
F	Replace 4506 Supervisor engines (4) - 2009 switches partial end of life	84,462.40		84,462.40		
G	Replace 4506 switches (4) - 2005 switches full end of life	241,972.00		241,972.00		
H	LPC New Academic Building (two 4506)				120,986.00	
	<u>Both Campuses</u>					

		A	B	A+B		
Item No.	Category Title	Must 2013-2014	Must 2014-2015	Must Totals (Updates/Expansion to Maintain Current Functionality)	LPC Academic Building	Chabot Biology Building
I	new 6509 switch with 10G - Chabot	292,639.60		292,639.60		
J	new 3560-X switches - Chabot (3), LPC (2)	27,280.00		27,280.00		
K	POE+ blades for 4506, Chabot (4), LPC (4)	52,764.80		52,764.80		
L	new 10Gb card for 6509 - Chabot (1), LPC (1) (for CENIC upgrade to 10Gb Internet in 2014-2015)		196,240.00	196,240.00		
M	OPTEMAN - all sites, including performance upgrade	46,663.00	46,663.00	93,326.00		
<u>2</u>	<u>Other Network Devices - Firewalls, Wireless, Network Monitoring Tools</u>					
	<u>Both Campuses</u>					
A	New Firewalls - 10Gb capable, 2 per College site, mandatory for CENIC 10Gb)		492,782.40	492,782.40		
B	Routers for OptEMAN connectivity - all sites (expansion of OptEMAN will require changes in routers at Chabot and LPC right away, and the other sites, Dublin/Franklin/Valley Care, can be done later.)	29,920.00		29,920.00		
C	Network Security and Performance Monitoring					
D	Network monitoring and remote tools	30,000.00		30,000.00		
E	Cisco Intrusion Prevention tools	55,000.00		55,000.00		
	Cisco NAC (network access control) - required for BYOD security/virus checking		115,000.00	115,000.00		
	<u>Chabot Wireless</u>					
F	Wireless Licensing and Functionality Expansion (next generation)					
G	Access Points (150) 802.11ac					
H	Chabot B100/Library access points (10)		13,200.00	13,200.00		
I	Chabot New Biology building access points (20)					26,400.00

		A	B	A+B		
Item No.	Category Title	Must 2013-2014	Must 2014-2015	Must Totals (Updates/Expansion to Maintain Current Functionality)	LPC Academic Building	Chabot Biology Building
	<u>LPC Wireless</u>					
J	Wireless Licensing and Functionality Expansion (next generation)					
K	Access Points (150) 802.11ac					
L	LPC Library B2000/ Faculty Bldg 2100 access points (10)		13,200.00	13,200.00		
M	New Academic Building access points (20)				26,400.00	
<u>3</u>	<u>Cabling - Critical needs not covered by Facilities projects</u>					
	Note: Cabling Installations Typically Funded by Facilities Modernization					
	<u>Chabot</u>					
A	PE Athletic Fields - softball and track					
B	Library Mezzanine - 135 computers/lab and wireless					
C	Chabot Art Classrooms B1000 (5 outlets)					
D	Additional AP locations (B1600, 2000)					
E	Chabot Health/Dental B2200 computer lab (25 computers)					
	<u>Las Positas</u>					
F	LPC Computer Center/Auto B800 (218 connections)					
G	LPC Science B1800 (210 connections)					
<u>4</u>	<u>Installation/Implementation/Integration Services</u>					
A	JasNET - Bond IT Infrastructure Design/Implementation	128,300.00	128,300.00	256,600.00		
B	Microsoft Exchange Design/Implementation	54,000.00		54,000.00		

		A	B	A+B		
Item No.	Category Title	Must 2013-2014	Must 2014-2015	Must Totals (Updates/Expansion to Maintain Current Functionality)	LPC Academic Building	Chabot Biology Building
5	<u>Desktops (PCs,MACs) and Laptops/Tablets (4-year cycle)</u>					
	<u>Chabot</u>					
A	Last cycle of desktops, laptops, tablets (1400 PCs)	735,000.00	735,000.00	1,470,000.00		
B	Chabot Math/Physics B1700 (275 computers)	288,750.00		288,750.00		
C	Chabot Library/B100 (110 computers)		115,500.00	115,500.00		
D	Chabot New Biology (classrooms, offices and labs 450 computers)					472,500.00
	<u>Las Positas</u>					
E	Last cycle of desktops/laptops/tablets (1155 PCs)	757,500.00	577,500.00	1,335,000.00		
F	LPC Library/B2000 computers (200 computers)		250,000.00	250,000.00		
G	LPC New Academic Building (ten 45-person computer labs, ten classrooms, 30 faculty offices)				637,000.00	
	<u>All Locations</u>					
H	HR (11 PCs)	12,300.00		12,300.00		
I	District/Contract Ed (51 PCs)	60,600.00		60,600.00		
J	Tablets (20) - all locations	42,000.00		42,000.00		
K	Laptops (15) - Training rooms, all locations	20,000.00		20,000.00		
6	<u>Software (Facility or Infrastructure Related) - no funding due to budget</u>					
7	<u>Audio-visual (Supplemental and upgrades to Facilities projects)</u>					
	Note: Initial AV Installations Funded by Facilities Modernization - not refurbishments					

		A	B	A+B		
Item No.	Category Title	Must 2013-2014	Must 2014-2015	Must Totals (Updates/Expansion to Maintain Current Functionality)	LPC Academic Building	Chabot Biology Building
	<u>Chabot</u>					
A	65 rooms refurbished	280,000.00	240,000.00	520,000.00		
B	Polycom - Chabot Nursing and Valley Care		210,000.00	210,000.00		
	<u>Las Positas</u>					
C	92 rooms refurbished, new equipment for MD 2420, Campus AV equipment, new AV in PE and building 500	223,000.00	223,000.00	446,000.00		
8	<u>Servers (Enterprise and College Specific)</u>					
A	Chabot - 9 servers	108,000.00		108,000.00		
B	Chabot - VDI upgrade		26,000.00	26,000.00		
C	LPC - 20 servers	84,000.00	156,000.00	240,000.00		
D	Districtwide - 10 servers	120,000.00		120,000.00		
E	Districtwide Blade Server system		120,000.00	120,000.00		
F	Districtwide SANS and VMWare		80,000.00	80,000.00		
G	Districtwide IBM and AIX servers		124,000.00	124,000.00		
9	<u>Printers - no funding due to budget</u>					
-						
10	<u>Telecommunications (Telephone)</u>					
A	Chabot - Phone system	32,500.00	32,500.00	65,000.00		
B	Las Positas - New system (for growth and to replace obsolete technology. The current phone system is at max, and LPC needs new one to support the new Academic building.)				650,000.00	

		A	B	A+B		
Item No.	Category Title	Must 2013-2014	Must 2014-2015	Must Totals (Updates/Expansion to Maintain Current Functionality)	LPC Academic Building	Chabot Biology Building
11	<u>Multi-Year Maintenance Agreements (5 years) and Enterprise Systems</u>					
A	Blackboard, Sirsi & Worldshare College Library Systems, Ricoh copiers/scanners, Mobile Apps	110,000.00	327,022.52	437,022.52		
12	<u>Other Peripheral Equipment (UPS, GoPrint, Equipment Components/Racks)</u>					
A	UPS batteries - all locations	9,000.00		9,000.00		
B	HP Tape backup - all locations	30,000.00		30,000.00		
C	Document Imaging (BDMS) scanners - all locations	28,000.00		28,000.00		
D	LPC Academic: Scanners, copiers, Goprint				150,000.00	
E	Chabot Biology: Scanners, copiers, Goprint					60,000.00
TOTAL COSTS FOR ALL BOND "TECHNOLOGY" CATEGORIES		4,370,579.20	4,342,893.92	8,713,473.12	1,584,386.00	679,886.00
<p>NOTE: LPC AND CHABOT NEW BUILDING TECHNOLOGY FOR LPC ACADEMIC BUILDING AND CHABOT BIOLOGY BUILDING IS NOT PART OF THE \$8.7M "MUST" IT BOND EQUIPMENT. NEW BUILDING EQUIPMENT WILL BE FUNDED IN CONJUNCTION WITH THE NEW FACILITIES CONSTRUCTION. THIS EQUIPMENT INCLUDES SWITCHES/ROUTERS, DESKTOPS/LAPTOPS/TABLETS, WIRELESS, PRINTERS/ SCANNER/ COPIERS.</p>					Total New Buildings at both Colleges	2,264,272.00

**CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
BOND TECHNOLOGY (IT) "MUST" PROJECT EXPENDITURES FOR 2013 -2014**

CHART #5 - As of June 30, 2014

Item No.	Category Title - Year 1: Expenditures 2013 TO 2014	Chabot Expenditures	Las Positas Expenditures	District Expenditures	Total Expenditures All Sites	Percent
1&2	Network Equipment - Routers/Switches/Connectivity and Other Network Devices - Firewalls, Wireless, Network Monitoring Tools, Video Conferencing	737,269.87	538,304.09	92,151.10	1,367,725.06	32%
3	Cabling (Supplemental to Facilities)	1,050.00	-	0.00	1,050.00	0%
4	Installation/Implementation/Integration Services	-	-	128,000.00	128,000.00	3%
5	Desktops/Laptops	407,672.46	881,002.60	132,982.44	1,421,657.50	34%
6	Software (Facility or Infrastructure Related)	-	-	0.00	0.00	0%
7	Audio-visual (Supplemental to Facilities FFE)	143,124.13	296,392.22	-	439,516.35	10%
8	Servers (Enterprise and College Specific)	89,512.94	109,639.14	328,083.98	527,236.06	12%
9	Printers	-	-	0.00	0.00	0%
10	Telecommunications (Telephone)	-	-	0.00	0.00	0%
11	Multi-Year Maintenance Agreements (5 years)	-	-	282,845.47	282,845.47	7%
12	Other Peripheral Equipment (UPS, GoPrint, Equipment Racks)	-	-	62,267.46	62,267.46	1%
TOTAL COSTS FOR ALL "TECHNOLOGY" CATEGORIES 2013-2014		1,378,629.40	1,825,338.05	1,026,330.45	4,230,297.90	

