As mentioned throughout this plan, technology is constantly changing. In order for this Plan to maintain currency and effectiveness, it must be reviewed annually. The Technology Committee will schedule a review of the Technology Master Plan during one meeting each fall. During that meeting, the committee will review current trends in technology and education, evaluate the progress the District has made since the last review, and make recommendations for modifications or additions to any part of this Plan.

Once the review is completed, all modifications will be submitted by the Technology Committee to the Vice President, Institutional Development, and Technology for review and approval by the Executive Cabinet.

HARDWARE

Background:

The district first began regularly issuing staff computers in 1995. At the time, support for those computers was limited to a single individual. In 1996, the college opened the doors of the Media Arts and Library buildings. The Media Arts building housed computer labs for drafting, photography, video editing, and computer science. The opening of this building marked the first in a number of “high tech” buildings that would grow the campus technology to what it is today. In addition to computers in the classroom, the district began making other technology available to instructors in traditional classrooms. The audiovisual department added computers and LCD projectors on carts to its fleet of easels and slide projectors. This technology was so well received that the original fleet of three grew to more than 12 projector/computer mobile carts. These carts were the precursor to the smart design classrooms we have today.

Even in 1995, the District had a mixed environment consisting primarily of PC-based computers, but recognized the need for the high-end graphics capabilities of the Apple computer systems in areas relating to photography, graphics, and video editing. The District departments that heavily utilize the Apple platform include the Public Information Office, Graphics, Audio Visual, Reprographics, Photography, Media Entertainment & Arts, and Music.

The District’s Student Information System during the early 90s was known as the “Aldrich System” and was run on a Digital Equipment Corporation (DEC) VAX system. Users were connected to this system primarily using “dumb” terminals with some users connecting through their PC using basic telnet sessions. The VAX system exclusively supported the District’s registration process and did not integrate or support other related applications like budget or human resources. Then, in 1998, the District upgraded to Datatel’s Colleague application. Colleague is an Enterprise Relational Database (ERD) that integrated the registration function with budget, and human resources. The new system was installed on an HP UNIX box running IBM’s Unidata as the backend database system.

Current Environment:

Computers:
The District’s current environment consists of more than 3000 computer systems spread over five geographical locations in faculty/staff offices, student-use computer labs, as well as permanently installed in smart design classrooms (see Appendix B1). Every permanent employee of the District is provided with a computer system based on the needs of his or her classification and job duties. Most employees are issued desktop computer systems that are installed in their assigned offices where available. The District provides new district employees with new equipment including computer systems, software, and required peripherals that match the specifications of their assigned duties. Any employee who fills an existing vacancy is provided with the computer system of their predecessor.

Employees who are categorically or externally (grant) funded are provided a computer system through their categorical or external budget. Adjunct faculty and other part-time employees are provided with access to computer systems in their work area, the Technology Center (BONH-106), Library, or Adjunct-Faculty office (BONH-312) at the Valencia campus, or the Technology Center (CCC-205) and library at the Canyon Country campus.

Laptops:
If funding is available, laptops are provided to employees who require a greater level of mobility. This includes, but is not limited to, faculty
members teaching at multiple locations, administrators who travel regularly for college related work, and staff members who require mobility to complete assigned tasks.

Employees who are issued laptop computers as their primary computer are required to bring their laptop with them when they come to campus. Laptops should be connected to the District network on a regular basis to allow for the deployment of automated patches as well as updates to the electronic inventory information.

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Once a year, laptop users are required to bring their issued laptop to Computer Support Services (CSS) for a physical inventory audit of the computer system and necessary hardware and software updates. Staff-issued PC laptops include Absolute tracking software that enables the district to recover lost or stolen laptops or the ability to remotely wipe all data from the laptops.

Laptop computers remain district property and users understand that they are not authorized to install personal software without the permission of CSS. In addition, laptop users agree to assume financial responsibility for any negligent loss or negligent damage to their laptops while in their possession. Users who desire a laptop in addition to their existing primary computer are required to obtain department or special funding. Additional computers assigned to district employees, are outside of the district’s replacement cycle.

Servers:
The District’s Windows-based server environment consists of more than sixty servers deployed on either individual physical hardware, or virtually using Microsoft’s Hyper-V technology. The majority of the servers resides in the District’s Data Center and supports the primary functions of the District including email, websites, file sharing, SQL databases, work order systems, and attendance tracking. The servers are on the same replacement cycle as the PC workstations with the goal of virtualizing the majority of our server population.

Student Information System:
The Datatel system has been upgraded twice since its installation back in 1998. The current HP UNIX system sits on hardware purchased in 2006. As the hardware continues to age and the college population continues to grow, the speed of the system is impacted. The District maintains a rapid response maintenance contract on the hardware to cover parts replacement and technical support should problems arise.

The Technology Committee has developed the following general equipment standards and guidelines to support the computer hardware needs of the District. These standards were developed through previous Technology Plans and are reviewed annually by the committee.

- PC client workstations and laptops have been standardized to Dell systems.
- PC Servers have been standardized to Dell.
- Mid-Range servers for the Student Information System have been standardized to HP in accordance with recommendations from the ERD vendor.
- Macintosh systems are provided by Apple as the sole source for this platform.
- Printers have been standardized to HP for all areas.
- Deviation from these standards is taken on case-by-case basis and shall be approved by Information Technology Services.
Printers:
The district has moved to centralized network printing in areas where available. Centralized network printers allow for groups of faculty/staff members to print to a single printer, instead of issuing each faculty/staff member an individual printer. District issued printers and peripherals have no set replacement cycle, and as a result, there are printers on campus that are in excess of 10 years of age. While still functional, some of these printers can no longer be accessed by new operating systems and applications.

Printer repair and toner replacement for all printers in group areas is maintained by CSS. Any individual in an office cluster or group area who desires a personal printer will be required to fund that printer and ink replacement out of their department budget or special funding. Any individual who does not have access to a group printer will be issued a personal printer. CSS provides toner and maintenance for these users.

Student use computer labs are provided with high-end black and white printers on a ratio of no more than ten to one. The need for high-end color printers within a computer lab is evaluated on a curriculum necessity basis. Toner for printers used in computer labs is the responsibility of the department that oversees the lab. A list of printers and locations is in Appendix B2. Replacement or repairs for all District printer equipment are made on an as needed basis.

Scanners:
The District maintains an increasing number of scanners, including high-speed document scanners used for the document imaging process. Where possible, the district will furnish departments with a single scanner to perform document-imaging processes. Departments or individuals requiring additional scanners will be required to use department or special funding to purchase additional scanners. Replacement or repairs will be made on an as needed basis.

Projectors:
The District has adopted LCD projectors as the primary means for displaying information from computers in meeting rooms and classrooms. The projectors have been incorporated into our Smart Design rooms and are available on computer carts for checkout from the Computer Support office. The District standard is a mix of Epson and Canon projectors depending on the functionality needed in the location.

Document Cameras:
Over the last five years, we have been replacing the old stand-along Overhead Projector units, with document cameras. These document cameras connect to an LCD projector and can display both two and three-dimensional items. The document cameras provide more functionality than the old overhead units and are available in all Smart Design Rooms.

Sound Systems:
Though not technology in an absolute sense, the District maintains a number of fixed location and portable sound systems used to support District events and academic courses. The fixed systems in locations like the stadium, main gymnasium, and the cafeteria are used to provide sound for large events while the smaller, portable systems, can be utilized in any classroom our outdoor location. Repair and replacement of these systems is handled by Information Technology.

The Performing Arts Center:
The Performing Arts Center (PAC) includes sophisticated technology to provide lighting, sound, and special effects for the multitude of performances held in the center. This equipment is supported by the full-time staff of the PAC and has a replacement cycle unique to those systems. Without a proper maintenance and replacement schedule, the equipment in the PAC may become inoperable or unusable resulting in additional costs to the District to provide rental equipment sufficient to support the needs of the performances booked in the center.

Recommendations:
Going forward, the District should:

- Continue with the established five-year computer replacement cycle. Computers and servers that are more than five years old typically no longer possess the processing power or memory to run current application programs and operating systems. Additionally, as a computer ages past the five-year mark,
many of the major components begin to deteriorate, increasing downtime and maintenance costs.

- **Establish a replacement cycle for the District’s Student Information System.** The Datatel hardware should be on a regular replacement cycle. The system components, as they age, become more prone to failure and replacement parts are not easily procured. In addition, with the advances in virtualization, the need to replicate our ERD in our co-location facility and the push to migrate to a Microsoft SQL solution, hardware replacement becomes even more critical.

- **Fast track the development of a tiered structure for equipment replacement.** The current replacement policy replaces computers and servers strictly based on the age of the hardware as opposed to taking into account what the systems are used for. The result of this policy has been labs and users who utilize resource intense applications wait just as long as other areas whose computing needs are not as critical. A new process should be developed that takes into account the computing needs of users and labs. This new process would require assessing the needs of the users, the applications used on the system, and the recommendations of the application manufacturers when making a replacement determination. A current list of computer labs and their last replacement date is listed in Appendix B3 of this document.

- **Pursue ongoing funding to implement the equipment replacement plan.** Over the last few years, the District has decreased the replacement budget for technology due to budget cuts at the state level (See figure 1). However, the scheduled replacements over the next three years will include more than 1,700 systems with an estimated cost of approximately $1.7 million. In addition, aging peripherals and audio-visual equipment will need to be replaced as well. It is imperative that the District fully fund the replacement budget, when possible, to ensure that the District’s technology equipment is current and can support the instructional and administrative needs of the District.

- **Establish a replacement cycle for the equipment supporting the Performing Arts Center.** Similar to computer hardware and software, the technology used in the PAC for performances has a recommended useful life. Additionally, it is important for the PAC’s equipment to meet industry standards and properly support the needs of the performers booked in the center. When the budget permits, a replacement cycle should be developed and funded to ensure the equipment in the PAC can meet the needs of the performers and continue to provide an exceptional experience for their patrons.

- **Secure funding to investigate new technologies.** In order to stay current with technology, funds should be allocated, as budget permits, to allow for the purchase of new technology to be tested by faculty and staff for possible inclusion into our technology infrastructure. The technology must be tested on-site in order to properly assess its value and allow for the greatest number of evaluators.

- **Develop a searchable inventory of District technology equipment.** Currently, the District’s technology inventory is only accessible by the Computer Support Services staff via TrackIt, a third party inventory, and helpdesk application. A system needs to be implemented so users can view their inventory online to monitor the age of their equipment and easily access information regarding their hardware specifications. This list should be updated...