Title: Information Technology

Planning year: 2020-21

Plan Type: Program Plan

OPR: Information Technology Division

Collaborative Group(s): Education and Information Technology Committee, Information Security Officers, Web Governance Committee, District IT, Edtech Committee, Instructional Development, Distance Education, Media Services, VPA's Office

Reference documents: 2018-19 College Goals & Strategies; 2017-2022 District Technology Plan

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Date: 12/09/2019

Review Cycle: Three year

SECTION I: Overview & Strategic Information
 A. PROGRAM DESCRIPTION
 PURPOSE:
Information Technology is a critical college resource supporting achievement of student learning outcomes, student   success, and college strategic goals, as well as supporting effective delivery of college programs and services.

Information technology planning considerations are integrated into college and district planning; Guided Pathways, Achieving the Dream and Equity initiatives.

Sacramento City College Plan provides the framework for supporting student to get them "in, through, and out", as well as the SCC's Vision, Mission, and 2019 Strategic Plan Goals, which are as follows:

Our Mission

Sacramento City College is an open-access, comprehensive community college, serving a diverse student population. We provide a wide range of educational opportunities and support services designed to foster the success of all students seeking transfer, career advancement, Associate degree and certificate attainment, basic skills development, and personal enrichment. Our commitment to continuous improvement through outcome-guided assessment, planning, and evaluation promotes student learning. Through these efforts, we contribute to the intellectual, cultural, and economic vitality of the community.

Our Vision

Sacramento City College seeks to create a learning community that celebrates diversity, nurtures personal growth, and inspires academic and economic leadership.

Our Values

Working Together
Pursuing Excellence
Inspiring Achievement

The District Technology Plan provides the framework to implement technologies to better support on-going district-wide technology needs, as well as the district's Vision, Mission, and 2019 Strategic Plan Goals, which are as follows:

Vision: To transform the lives of students and enhance the vitality of our region.

Mission Statement: The Los Rios colleges provide a vibrant learning environment that empowers all students to achieve their educational and career goals.

The 2020-21 IT program plan:

- Establishes objectives for Information Technology related to the college goals and district strategic   directions for:
    - Student Success
    - Enrollment Management
    - Organizational Effectiveness

- Supports college initiatives with systems that meet operational needs and allow for outcome   assessment.
- Defines the 2020-21 replacement cycles for computers, servers, networks, and software, and to meet instructional and service needs.
- Is based on newly implemented and future technology directions, specifically in the areas of networking and   virtual desktops
- Emphasizes customer service and support
- Network, Infrastructure, and Security
- Technology Environment
- Academic and Instructional Computing
- Student Services Support Computing
- Administrative Services Computing

B. ENVIRONMENTAL SCAN

At the conclusion of the prior year's program plan we have implemented more robust, higher throughput networks; invested in devices to better, more seamlessly access VDI desktops; and are supporting institutionally implemented Adobe products. With the implementation of these initiatives, we find we need to address new issues that have developed with their implementation. We need better visibility into how systems connect to different resources and be able to access tools that can assist in determining root cause of problems in a timely manner when reported by our end users. This includes access between systems across the entire network regardless of what resources they connect to. With respect to visibility, we need tools that will help us quickly and efficiently resolve issues discovered by root cause analysis. We also found that the implementation of institutionally supported Adobe products has adversely affected the workload and workflow of the department and will investigate solutions that can help mitigate the impact of the implementation.

We have invested in technology that assists with management of Apple based mobile devices, but we find we need to develop a more robust MDM strategy that can include mobile devices that use different technologies. The District has committed to providing access to an enterprise MDM solution and we will commit resources to investigating and researching the appropriateness of it in our environment.

A couple of new initiatives must be adopted with the increasing threat of malware/ransomware/phishing events and the continual requests from the campus for their technology needs. We must allocate additional resources to assess and respond with modern security and monitoring technologies to address security threats and to become more agile in responding to the needs of new and changing instructional technology requests.

We also need to determine if there are additional needs of the campus community by gathering feedback. We can do this directly by means of a survey to help gauge the effectiveness of the department and prompt for suggestions on where the department can improve. We also plan on providing more transparency to the inner workings of the department by removing some barriers to accessing support by testing a "coffee with a tech" type events. We can use the feedback from the different sources to determine the effectiveness level of the department.

B. MULTI-YEAR DIRECTIONS OR STRATEGIES

Most objectives outlined in the 2020-21 IT program plan have roots in prior strategic and program plans. While there may be changes in emphasis or specific technologies in a given year, many strategies are multiyear including the:

- Student help desk support at LRC
- Camera project (SCC-IT, DO-IT, and FM)
- Body cam project (LRPD)
- Cisco switches and Wireless Access Points (WAPS)
- VoIP phones

- Review/Replacement cycle for hardware, networking, servers
- Improving wireless access
- Investment in institutionally supported software
- Website maintenance
- BYOD and MDM strategies which impact network planning
- Organizational restructuring based on changing work requirements and institutional priorities
- Virtualization as a strategy for providing desktop and server access
- Addressing information security concerns
- Providing training to faculty, staff, and students on both educational and administrative technologies
- Ensuring ADA compliance with purchased and developed technologies
- Assess and upgrade the physical network cable plan infrastructure including upgrading Ethernet cables ie. Cat3/5e to Cat6
- Investigate technologies that help monitor, alert, and remediate system threats and performance issues
- Analyze the environment of the server room and supplement the current configuration to better provide an optimized, controlled facility for system functionality and longevity
- Investigate ways to improve our current document imaging technology to align with enterprise best practices

SECTION II: Annual Review and Plan
A: REVIEW OF ACCOMPLISHMENT OF THE PREVIOUS YEAR'S WORK:

Previous Year's Work: 2018-2019		
SCC Goal A: Deliver student-centered programs and services that demonstrate a commitment to teaching and learning effectiveness and support student success in the achievement of basic skills, certificates, degrees, transfer, jobs and other student educational goals.		
Outcome (AUO/SLO) *(formerly called objectives)*	Expected results	Progress to date
A1. Improve student and staff access to college information by maintaining a web presence.	Management, maintenance, and ongoing support of college web resources using WordPress and Alfresco.	Currently migrating WordPress and Alfresco to Ingeniux. Expected completion date Summer 2020.
A2. Facilitate use of student owned computers in labs and classrooms, including access to file servers and printers while projecting the security of college technology resources.	Increased access to student owned computers in classrooms and labs as well as wireless printing in computer labs.	Ongoing management and maintenance of the existing environment.

A3. Increase wireless coverage to college information resources by end users with mobile devices.	Ongoing evaluation of wireless coverage campus-wide or as needed (in classrooms to support mobile carts).	Wireless site survey completed.
A4. Provide technical support to computer labs.	User satisfaction surveys; analysis of help line calls.	Ongoing
A5. Improve access to information technology resources at the Outreach Centers by improving network capabilities and access to computing resources.	Improved access to IT resources at Outreach Centers.	Upgraded WAN link at West Sac Center from 150mb to one primary 1gb line and one failover 1gb line. Davis Phase 2 completed with new technology including updated WAN links as noted above.
A6. Evaluate unit plans and replacement cycle to determine the feasibility of proposed technology acquisitions and usefulness of existing technology deployment.	More efficient use of resources.	Met with deans and department chairs during unit and categorical plan development to determine feasibility of proposed projects. Will provide information to the EITC to facilitate project ranking during the budget process.
A7. Develop program to track Student Learning Outcome assessment.	Program available.	Expanding to include Program Learning Outcomes and Institutional Outcomes.
A8. Maintain teaching and learning environments for students, faculty and staff by implement computer replacement cycle for desktops and laptops that were purchased in the 3-6 year timeframe depending on need.	Computer acquisition and installations.	Teaching labs upgraded and new faculty computers installed before and during the start of the semester.
A9. Maintain high speed network including fiber metropolitan area network. Improve access and reliability of wireless network. Upgrade internet access to accommodate increased demand.	Installation or replacement of access points (APs) to provide high speed wireless network capabilities. Assess the current wireless coverage.	All current 1st gen Cisco WAPs (2702) are up to date. The expected end of life is 2022.
A10. Implement software that can assist faculty and staff in improving student success rates	Provide access to software relevant to increasing student engagement.	Supporting Canvas implementation and single sign on support for web based

by changes in teaching practices		products, pending Ad Astra will support implementation. Office 365 mailbox exchange online migration is completed.
A11. Conduct research in preparation for implementing comprehensive media server technologies.	Develop plan and implementation schedule	Utilizing CCCCO sponsored resources (3CMedia)

SCC Goal B Align enrollment management processes to assist all students in moving through programs from first enrollment to completion of educational goals.		
1. Work with Student Services to implement programs that support recruitment, assessment, and service delivery.	Support of computer programs in Student Services departments including assessment, OnBase, SARS, Medicat, SARS Anywhere	Continuing to research and support upgrades to OnBase to support student self-service scanning, supporting call center.
2. Manage wireless network to ensure student access to Internet resources.	Installation and monitoring/measuring use in different locations; site surveys	Ongoing
3. Participate in the PeopleSoft Financial Aid implementation	Systems design, development, implementation, and maintenance	Ongoing
4. Systems design development, implementation and maintenance	Services provided	As needed

SCC Goal C: Improve organizational effectiveness through increased employee engagement with the college community and continuous process improvement.		
1. Facilitate availability of up to date operating system and applications software by maintaining a "two version" standard while accounting for existence of legacy programs that meet specific instructional or service needs.	A standard would be set for operating systems and applications software and the versions implemented on college desktops would not be more than one version behind the standard. Needed programs would remain available.	Implement Windows 10 to be completed campus wide by December 2019 and working with faculty to identify programs that will not work in that environment.
2. Increase staff use of available technology for creating training programs in computer hardware and software.	Ability to use programs	Windows 10 support, Office 365/online exchange (Outlook) support.
3. Improve communication and project coordination with the college and district entities responsibilities for the range of technologies available to support students, faculty, and staff	Improved timeliness and quality of technology services to college community.	Meet with district and college technology representatives on an ongoing basis to ensure SCC is fully participating in technology initiatives. Fiber ring upgrade DO/SCC IT, Symantec endpoint protection, and office 365, Ongoing support.
4. Build on IT reorganization of 2019-2020 to increase the consistency in the level of support available to labs and departments.	Surveys of faculty and staff on customer service indicators; analysis of help desk calls.	Ongoing analysis and redistribution of responsibilities. Converted Senior IT Tech to IT Specialist I (9-month) to support campus wide mobile device management use tool and other technologies (example JAMF to manage iOS and iOSX Apple devices) for instruction and classroom/lab use. (everyone can code)

5. Develop ongoing communications mechanisms for facilitating dialogue on IT policies and issues.	Continuous vetting of issues important to the college community on information technology policies, procedures, utilization, training, funding through forums, surveys, and IT Committee.	Twice monthly EITC meetings, weekly web meetings, monthly web governance meeting.

B. UNIT OBJECTIVES: ADMINISTRATIVE UNIT OUTCOMES (AUOS) OR STUDENT LEARNING OUTCOMES (SLOS) FOR THE PLANNING YEAR/ C. PROCEDURES AND RESOURCES REQUIREMENTS FOR THE PLANNING YEAR
(*B & C are combined for brevity – objectives are the same, outcomes are in column 3)

2020-21					
The timeline for all activities is the full academic year; Funding Source (All CDF except as noted, details in IT Replacement Cycle in Appendix)					
SCC Goal A: Deliver programs and services that demonstrate a commitment to high quality teaching and learning in support of student success and achievement.					
Unit Objective	**Procedure (Helpline work orders except as noted. Overview of procedure in appendix)**	**Expected Results**	**Responsible persons (All IT dean Computer Services staff except as noted)**	**Resource Requirements IT, Staff, Facilities, etc. Show total cost for each item (IT replacement cycle costs detailed in spreadsheet appendix 2)**	**Funding Source (All CDF except as Noted, details in IT Replacement cycle in spreadsheet appendix 2)**
A1. Improve student and staff access to college information by maintaining a web presence		Manage, maintain, assess, and develop college web resources using Ingeniux and improve reliability	Web governance committee, Webmaster, Web task group	Website related cost absorbed by PIO	

A2. Facilitate use of student owned computers in labs and classrooms, including access to file servers and printers while protecting the security of college technology resources.		Increased access to college IT resources by students with own computers in classrooms and labs as well as wireless printing in Computer labs.	Lab coordinators, ISO committee, DO staff Edtech EITC	Wireless AP expansion, network upgrades, Server upgrades	
A3. Increase access to college information resources by end users with mobile devices.		Ongoing evaluation of wireless coverage campus-wide or as needed (in classrooms to support mobile carts)	IT Staff		
A4. Provide technical support to computer labs		User satisfaction surveys; analysis of help line calls.	Lab coordinators		
A5. Improve access to information technology resources at the Outreach centers by improving network capabilities and access to computing		Improved access to IT resources at Outreach centers. Plan technology for development of West Sac 3rd floor	Outreach center staff		

resources					
A6. Evaluate unit plans and replacement cycle to determine the feasibility of proposed technology acquisitions and usefulness of existing technology deployment		More efficient use of resources.	Area deans and department chairs		
A7. Develop program to track Student Learning Outcome assessment for both instruction and student		Program available to include SLO's, Equity, and Guided Pathways.	SLO coordinator, SLO coordinator, Equity office and Guided Pathways design team		
A8. Maintain teaching and learning environments for students, faculty and staff by implementing computer replacement cycle for desktops and laptops that were purchased in the 3- 6 year timeframe depending on need		Computer acquisition and installations.			

A9. Maintain high speed network including fiber metropolitan area network. Improve access and reliability of wireless network. Upgrade internet access to accommodate increased demand.		Installation or replacement of switches, access points (APs) to provide high speed wireless network capabilities. Installation of 1 g direct connection to internet and 10g direct connection to district office.	DO IT Provides planning and installation services.	Funding for core switch and POE switches provided by DO IT. To enhance the fiber infrastructure, DO/SCC IT is implementing a new fiber ring (single mode). Ongoing.
A10. Implement software that can assist faculty and staff in improving student success		Provide access to software relevant to increasing student engagement	Instructional Development, Academic computing, AV. Ad Astra.	
A11. Implement comprehensive		Participation in 3CMedia	Media Services, Instructional Developer, CPIO	
A12. Support college construction and renovation plans		Have technology ready to support New Mohr Hall.	SAH Dean, faculty and staff	Expected completion Summer 2020
A13. Expand wireless capabilities to ensure that demand is met with increased AP placement and appropriate technology		Continue to install APs as needs are identified.	IT Network Specialist and District Office network staff	

Unit Objective	Procedure	Outcome Measures	Responsible persons	Resource Requirements	Funding Source
A14. Explore issues associated with making school owned portable technology available to students to promote success but address issues of security and management		Work with programs to determine their requirements for making laptops and/or tablets available to students	HSI, LRC Circulation Desk check out Chromebooks; IT and area staff.		
A15. Support district implementation of Canvas and OEI. Ongoing support for single sign on web-based products.		Work with instructional development and labs to ensure that technology environment supports implementation	Instructional development, LRC dean, EITC, DE subcommittee		
A16. Support implementation of Office 365 (cloud based office technology)		Determine how to support students, faculty and/or staff who utilize	EITC, District staff, campus IT staff		

SCC Goal B: Align processes and practices to assist students in moving from first enrollment to goal completion.					
Unit Objective	Procedure (Helpline work orders except as noted. Overview of procedure in appendix)	Outcome Measures	Responsible persons (All IT dean Computer Services staff except as noted)	Resource Requirements IT, Staff, Faculties, etc. Show total cost for each item (IT replacement cycle costs detailed in appendix)	Funding Source (All CDF except as noted, details in IT replacement cycle in appendix)

B1. Work with Student Services to implement programs that support recruitment, assessment, and service delivery;		Support of computer programs in Student Services departments including assessment, OnBase, SARS, Medicat…	Student Services staff		
B2. Manage wireless network to ensure student access to Internet resources.		Install, monitor/ measure use in different locations; satisfaction surveys	DO staff		
B3. Develop reporting systems to support student services to ensure that data driven decision making is available in these areas.		Systems design, development, implementation, and maintenance for call center and financial aid exception reporting	Student services staff		
B4. Implement pending new Common Assessment and multiple measures program		Implementation	CAI workgroup, DO, Guided Pathways Design		

SCC Goal C: Support employee engagement and organizational effectiveness by providing an excellent working environment.				
Unit Objective	Procedure (Helpline work orders except as noted. Overview of procedure in appendix)	Outcome Measures	Responsible persons (All IT dean Computer Services staff except as noted)	Resource Requirements IT, Staff, Faculties, etc (IT replacement cycle costs detailed in appendix 2) Show total cost for each item
C1. Facilitate availability of up to date operating system and applications software by establishing a "two version" standard while accounting for existence of legacy programs that meet specific instructional or service needs.		A standard is set for operating systems and applications software and the versions implemented on college desktops would not be more than one version behind the standard. Needed programs would remain available. Office 365 exchange online implementation application portion slates for spring 2019		

C2. Improve communication and project coordination with the college and district entities responsibilities for the range of technologies		Improved quality and timeliness of services	EIT committee, Edtech committee, IT deans, ISO committee	
C3. Recent addition of Media Services under the IT Division		Benefit of multi-media classroom support with the current and new technologies. Surveys of faculty and staff on customer service; analysis of IT Helpline and Media Services support.		
C4. Develop ongoing communications mechanisms for facilitating dialogue on IT policies and issues.		Agendas and minutes of governance meetings demonstrating dialogue	EIT committee, Student Government, web governance committee, ISO	

APPENDICES:

1. **OVERVIEW IT PLANNING PROCEDURES INCLUDING REVIEW/REPLACEMENT CYCLE PROCESS:**

The college's Information Technology functions are conducted through the following procedures:

1. The SCC-Helpline is a full service help desk system that allows for the intake of calls by email, web, and telephone, assigns calls to IT staff, tracks progress, and notifies the individual who placed the ticket of the results. Issues arising from hardware failures on individual computers are addressed through this system.
2. The IT division establishes the annual review and replacement cycle for computers and servers by applying the rules approved by the EIT committee to computers and servers based on age and function. The proposed technology scheduled for replacement is reviewed with area IT support and college units to ensure that the schedule is complete and correct.
3. The IT division works with the DO IT, EIT committee, divisions, and departments to define technology standards to be implemented in the college environment.
4. The IT division works with college units to define needs for new technology through the unit planning process as well as assess project feasibility.
5. The IT division works with the Audio Visual and Distance Education units to ensure that college technology functions are fully supported.
6. The IT division works with the District office on defining infrastructure needs and districtwide technology requirements and resources. KACE ticketing system is used to request services from District IT staff.
7. The IT division works with departments to control access to accounts, file shares, systems, and computing resources.
8. The IT division works with areas hiring new faculty and staff on obtaining necessary technology and access.
9. The IT division works with district based committees and task groups to ensure development and implementation of systems to support student success and college functions.
10. The IT division works with departments and divisions to develop systems that support college functions.
11. Information security procedures and training are the responsibility of the college Information Security Officer, working with the district and college.

The process for replacing computers, servers, and network equipment is as follows:

Computer Replacements: A yearly review and replacement cycle for computers, has been established based on the age and functionality of the equipment. Campus IT will annually establish the Standard PC, MAC, desktop and Laptop Standard. Most of the computers that are replaced will be replaced with the standard computer configuration. Instructional Labs that may require computers with additional capabilities above the standard and the replacements will meet Instructional requirement. Staff computers that require additional capabilities

above the Campus standard will require the Division to fund the difference in the replacement cost.

Switches to other technology (PC to Mac or desktop to Laptop, Real to Virtual) will be decided at time of replacement cycle review. The replacement of existing computer workstations (including laptops and smart classroom computers) follows four cycles. Replacement cycles for instructional faculty are matched with the replacement cycle for the areas that they teach.

Three Year Cycle: Workstations are reviewed for replacement based on programmatic need on a three year cycle in areas which utilize technology to deliver instruction as well as for those faculty and staff whose job responsibilities are technology based. This would include:

- Computer Information Science
- Graphic Communication
- Engineering Design Technology
- Information Technology
- Graphic Impressions
- Distance Education
- Instructional Development
- Photography
- Engineering

Six Year Cycle: Most other classroom, lab, multimedia, faculty and staff, and student service/administrative function computers are reviewed and replaced on a six year cycle. It is anticipated that the type of computer replaced will be the current campus standard of existing equipment.

Eight Year Cycle: Computers that are either low impact, web, or VDI use computer would fall in the eight year cycle this would include instructional labs, GoPrint, SARS Trak and On Track computers, and some student worker computers

Ten Year Cycle: Virtual desktops Client computer (zero client) would be in this cycle. Because of the nature of the virtual desktop environment, the client computers are going to be less powerful (relying on the power of the server), and they will be more reliable (few if any moving parts), so they will last much longer.

Computers from the Three year cycle will be cascaded to the Six year cycle, computers from the Six will be cascade to the Eight year cycle. The use of cascaded computers allows the campus to be green and it makes the most of computer resources. We recently moved to from a 3/5/8 to a 3/6/8 model to allow consistent movement of old computers and reduces the need and expense of buying new computers to meeting the needs of the replacement cycle. The current trend of

computers and computing is moving less about more and more powerful system but to more web based, app based and virtual technology, so the functional impact of using 6 and 8 year old computers is minimal. If the cascaded computers required additional capacity, due to application requirements or Operating System needs, Campus IT will add additional RAM or faster/larger hard drive to extend the useful life of the computers.

The review and evaluation of the existing base of computers and determination of which computers will be replaced takes place in the fall, prior to the development of unit plans. Lists of which computers are scheduled for replacement in the next fiscal year are shared with the divisions prior to development of Unit Plans.

- **Server Replacement:** On an annual basis, the base of existing servers is evaluated to determine which are out of warranty, which applications reside on which servers, and whether new technologies exist which would change the college's approach to servers and storage to ensure that the base of servers and storage meet college strategic and operational goals. It is anticipated that all out of warranty servers are replaced but that applications may be realigned based on number of users, processing requirements, and storage requirements. Alternatively, applications and data can be deployed on virtual servers.

- **Network Switch Replacement:** On an annual basis the college's need for local and wide area connectivity is assessed, including wireless technology. Based on that analysis the college's network typology is evaluated to determine which switches are out of warranty, are located in areas which require greater throughput, or are located in areas in which there are increasing number of users (requiring more ports). Utilization of wireless access points is also monitored to determine whether additional capabilities should be planned either through augmentation or replacement of existing access points or controllers. Fiber capacity is evaluated for whether the mode and amount is adequate to meet college needs. The lead responsibility for the analysis of network requirements, development of typology, analysis of new technologies, and deployment of network equipment is the District Office. The college assists in analysis of user requirements and monitoring implementation and operation.

- **Multimedia Rooms:** On an annual basis the Media Services department updates the inventory of multimedia rooms and notes the equipment placed in each room (or cart) and the age of the computer and projecting equipment. The replacement cycle for multimedia classrooms follows that of the computer replacement cycle – five year replacement cycle for computers except in those classrooms that support teaching with technology in which the lab computers are reviewed for replacement on a three year cycle, replacement as other components break, and supply budget for projector bulbs. Departments should apply for replacements through the AV fund. Additional information is available in the Multimedia Program Plan.

- **Peripheral devices:** Existing printers and scanners can be replaced as they break or as requirements change based on unit plans. Units are responsible for replacing peripheral devices.

- **Systems Software Maintenance:** In addition to hardware, the college recognizes the need to maintain systems software and college wide applications software. On an annual basis a listing of all maintenance contracts for systems and college wide software developed based on Software type Usage Base, Usage Terms, Due Date, and Costs

Information on software maintenance requirements is compiled by the IT department and evaluated to determine whether the software is needed to maintain college goals and department objectives. Costs and terms of maintenance contracts that are maintained by the district are noted. Currently the Office 365 and Adobe CC are maintained as college wide software.

- **Applications Software Maintenance:** On an annual basis, applications software purchased to maintain instructional, student services, or administrative applications are reviewed at the division/department level with input from the IT division to determine whether upgrades are needed, whether maintenance contracts should be renewed, or whether there are new software options available to support college goals and department objectives. Requests for funds is built into the department base budget or submitted in unit plans by the units using the software and forwarded through the budget process.

2. **APPENDIX: WITH PROJECTED 2020-21 ITIP COSTS**

Information Technology Institutional Purchases
2020-2021

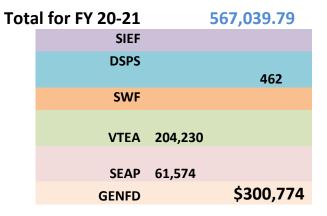| Computer Replacement Cycle – PC Computers (ITIP-01)							
Vendor	Product	Due Date	Qty.	Cost	Total	Categorical Eligible	Cat. Cost
HP	Standard Staff/Lab Monitor & PC Configuration					VTEA B103 (32), B219 (32), B221 (32), T101 (20)	
			116	1,100	127,600		127,600

			29	1,100	31,900	29 SEAP Don't know if you want in the with or without monitor category	31,900
	Standard Staff/Lab PC Configuration **without** monitor		41	800	32,800	GENFD (6 SMCL) <maybe T101 (20) currently not included>	
	Staff/Lab Laptop Configuration ProBook 650		11	1,200	13,200	GENFD: Andy surface, Eric Wyles Zbook, (9) smcl laptops, (2) Nursing sim laptops	
CDW-HP	Computer Locks, Surge Protectors, Cable Adapters, Display Ports (including Macs)	mult			1,360	VTEA	1,360
				3,000	1,640	GENFD	
	Totals				**208,500**		**160,860**

Computer Replacement Cycle – Mac Computers (ITIP-02)							
Apple	iMac Desktop **Non-standard** for Lab		39	1,930	75,270	VTEA	75,270
Apple	iMac Desktop Standard for Lab		3	1,930	5,790	GENFD (Takeda, Nakano, Sekikawa)	
Apple	Staff Laptop Configuration: MacBook Pro, 13-inch		4	1,600	6,400	Genfund (Seddon, Button, Crandley, Waxman)	
	Totals				**87,460**		**75,270**
Server Replacement Cycle (ITIP-03)							
Vendor	Product	Due Date	Qty.	Cost	Total	Categorical Eligible	Cat. Cost
CDWG	Replacement Production Virtual Hosts	Fall 2020	4	14,000	56,000		
CDWG	Replacement SCC-DENTAL server	Fall 2020	1	7,500	7,500		
CDWG	Replacement SCC-FINAID server	Fall 2020	1	7,500	7,500		
	Totals				**71,000**		
Software Maintenance Licensing (ITIP-04)							
Vendor	Product	Due Date	Qty.	Cost	Total	Categorical Eligible	Cat. Cost
JAMF - Mobile Device Management for MAC OS X & iOS devices	AT Mac OS		26	18	468		
	Business Mac OS		30	18	540		
	Spare Mac OS		7	18	126		
	DSPS iPads		3	9	27		
	Bus iPads		10	9	90		
Cleverbridge	Bitvise SSH Server Upgrade Extension-Maint. Fee	9/11/19	2	20	40		
CDWG	Ghost Licenses - Annually Exp: June 2020 RenewBy: Apr 2020	4/1/20	40	6	240		

CDWG	Datrium Support (on hold until 2022-2023 when previous 3 year support ends) placeholder	End of fiscal yr	1	-	-		
CDWG	VMWare Licensing Maintenance for Server Virtualization Exp: 10/20/19 Renewby: Sept 2019	9/1/19	1	6,500	6,500		
Computer Land	Adobe Creative Cloud 8/1/2019 - 7/31/20	7/1/19	775	65	49,988		
Computer Land Desktop bundle for Faculty and Staff Microsoft License Renewal	Visio Pro Device #D8701057CFU		25	55	1,375		
	Visual Studio enterprise with MSDN per user #MX300115CFU		1	375	375		
	Windows VA per device #4ZF-00019CFU		195	34	6,552		
	SQL Server Standard Core #7NQ-00303CF		14	348	4,872		
	SQL Server Standard Per Server #228-04437CF		2	88	176		
	Windows Server Datacenter Core #9EA-00271CF		10	360	3,600		
	Windows Server Standard #9EM-00265CF		13	52	676		
Faronics	DeepFreeze Exp: 08/17 Renew: July	7/1/19	670	3.75	2,513		
Help Desk Technology	ServicePRO (HelpSTAR) Annual Software Assurance Exp: 01/31/2020 RenewBy: Dec 2019	12/1/19	1	4,563	4,563		
iT1 Source	VEEAM Exp: Nov 2019 RenewBy: Oct 2019	10/1/19	6	400	2,400		
NEKO	Forms Automation DSPS		1	462	462	DSPS	462
NEKO	Forms Automation FA		1	462	462	SEAP	462
NEKO	Kofax Ascent Capture	-	6	832	4,992	SEAP	4,992
NEKO	WebX Support 250 per month $250.00 $3,000.00 Annual charge/support for OnBase and Kofax	-	12	250	3,000	SEAP	3,000

Vendor	Product	Due Date	Qty.	Cost	Total	Categorical Eligible	Cat. Cost
CDWG	Scanner for replacement as needed	-	1	8,000	8,000	**SEAP**	8,000
SSPI	SARSGrid "Anywhere", SARS Grid Add-on Text, SARS Messages, SARS Alert, SARSCall, SARSTrak, SIM-T-Mobile (2) Exp: 06/30/20 RenewBy: May 2020	5/1/19	multi	12,620	12,620	**SEAP**	12,620
Twilio	SARS Text Messaging		1	600	600	**SEAP**	600
RuneCast	Runecast support for VDI classrooms		1	3,240	3,240		
TechSmith	Camtasia Support Exp: 12/2019 RenewBy: Nov 2019	11/1/19	41	36	1,476		
Various	VDI Monitoring		300	15	4,500		
Various	SIEM/Log Correlation/Analytics		1	4,500	4,500		
	Totals				**128,972**		**30,136**

Upgrades to Redeploy Computers (ITIP-05)

Vendor	Product	Due Date	Qty.	Cost	Total	Categorical Eligible	Cat. Cost
CDWG	Redeployment supplies		120	25	3,000		
	Totals				**3,000**		

Virtual Desktop Infrastructure Maintenance and Expansion (ITIP-06)

Vendor	Product	Due Date	Qty.	Cost	Total	Categorical Eligible	Cat. Cost
VMWare	Maintenance of Current VDI Licenses Exp: 10/24/2019 RenewBy: Sept 2019	9/1/19	300	45	13,500		
	Totals				**13,500**		

Server room upgrade (ITIP-07)

Vendor	Product	Due Date	Qty.	Cost	Total	Categorical Eligible	Cat. Cost
Various	Equipment to support network changes		1	3,000	3,000		
CDWG	Hard Drive & Flash Memory for Server Room		8	170	1,360		
SCSI4ME	Drive Tray Caddy		8	31	248		
	Totals				**4,608**		

Networking (ITIP-08)							
Vendor	Product	Expected Purchase Date	Qty.	Cost	Total	Categorical Eligible	Cat. Cost
	Cable installation /replacement (WiFi.)	Ongoing for 3/4 years			50,000		
	Totals				**50,000.00**		

Total for FY 20-21   **567,039.79**

SIEF	
DSPS	**462**
SWF	
VTEA	**204,230**
SEAP	**61,574**
GENFD	**$300,774**

3. **APPENDIX-STANDARD CONFIGURATIONS FOR STAFF/FACULTY AND LAB COMPUTERS AND LAPTOPS** (tax & shipping included)

◊   iMac 21.5-inch 16GB RAM $ 1,930

◊   MacBook Pro 13-inch 8GB RAM $ 1,600

◊   HP ProDesk 600 G5 w/Monitor 8GB RAM $ 1,033

◊   HP ProDesk No Monitor 8GB RAM $ 849

◊   HP ProBook 650 G5 15.6" 8GB RAM $ 1,072

4. APPENDIX: NETWORK PLANNING ASSUMPTIONS

Network Planning

We continue to focus on the availability and coverage of our wireless infrastructure, and updating our wired network. We anticipate adding two wireless access points (AP's) to the outdoor quad area in the center of campus. One AP located outside the LRC and the other by Rhodda North. Expanding this service to the quad will allow for a more robust wireless infrastructure and will also enhance adjacent areas where coverage exists and provide a more seamless network experience when travelling across campus. Another upgrade to the wireless network will be replacing the cabling leading to the wireless access points. Currently there are approximately 130 Wireless AP's to upgrade the cabling to. It is anticipated that this project can take 3-4 years by completing 30 per year. This project also has a dependency, FM will need to complete the conduit pathways for the cabling. The projected cost is $45,000. The wireless AP's will be transitioning to new mounting brackets. These will move the AP's from vertical wall mounts to horizontal ceiling mounts. The change in orientation will improve signal quality and range.

The wired network will also be undergoing cabling upgrades and existing cat5e cabling will be gradually replaced with high flex cat 6 cables.

Server Replacement Plan

We constantly evaluate technologies and vendors for products that can help deploy, manage, and maintain new servers as they are replaced in an effective and efficient manner. As such, we have chosen Lenovo as our server vendor. We have currently replaced almost half of our physical servers with Lenovo servers and will continue to replace old servers when they go end of support. For fiscal year 2010-2021, the production server virtual hosts (4 servers) will need to be replaced as they are no longer under warranty. The production server hosts are a critical part of the infrastructure as they support the operation of over 100 servers that are required for daily operations. Other systems due for replacement are in the student services area and include servers supporting Financial Aid and the Dental program. After the replacement of these servers, we will have replaced over 90% of the old servers from the previous vendor. The remaining servers will be evaluated as candidates for virtualization which would eliminate the need to purchase a hardware replacement.

Virtual Desktop Maintenance

The Virtual Desktop Infrastructure continues to have broad adoption and high utilization. As we continually maintain the infrastructure, we found shortcomings in how we are able to monitor, troubleshoot, and resolve various login issues. Unfortunately, the tools to help are not mature and there is currently no single product that can address the issue in our environment. We continue to evaluate the tools that are available and engage the vendors with our specific issues in hopes that they can develop and integrate a solution into their product. With continued department training and open dialog between technicians, we are able to resolve issues more quickly, but we continue to improve the process and have identified a few products that may help in an enterprise environment. The costs for these

products will be placed into the ITIP as a budgetary placeholder with hopes that the products will have matured by the time a purchase must be made.

Server Room Upgrade – Environmental
With the addition of the Power Generator, and the planned incoming whole room UPS we feel there are more modifications that need to be made to the Server Room. The Server room needs to have a cool dry environment to increase the longevity of the equipment that is used. The HVAC system in the room needs to have the air output rerouted to come down in the center of the room. This would improve the server's airflow and cooling. We would also like to add room monitors for moisture and temperature. The equipment in the room represent hundreds and thousands of dollars. The intellectual property that is contained in this equipment values on the millions and it should be protected. The cost of the modifications to the HVAC would need to be determined by FM. Environmental sensors normally run about $200 – $300

Security Focus on System Monitoring / Analytics / Visibility
With the continual threat of malware/ransomware and our need to follow best practices of different government agencies and mandates, we have a need to gain better visibility into our networking environment in terms of who accesses it, how it is accessed, what are they doing, and how we can respond to heterogeneous, potentially simultaneous, events.

We are evaluating technology products that can help with Security Information Event Management (SIEM), log correlation, system auditing, file auditing, security compliance, and endpoint protection. Ultimately, these products will integrate with an analytics engine to help determine the threat level and provide a potential resolution. These products may work in conjunction with District Office's security and data loss prevention scans.

The District office is currently evaluating, and implementing Network Access Control (NAC). This would create more insight as to who is accessing the network with what devices, and to help ensure that these devices meet district security standards. It will also help protect our data from zero-day exploits, malware, and viruses. We support DO in this matter, but feel that each campus needs access to the System so that we may aid our students, faculty, staff, and administration quickly and effectively. Currently the cost of this is unknown, but it could reduce the expenditures that the campus/district faces from problems arising from hackers, or infections from malicious software.

Continuous Maintenance of Document Scanning System
Each campus maintains an instance of Onbase, which is our document scanning system. Each instance provides resources to scan and process documents, store an electronic copy of the document, provide a web interface, and provide search an indexing capabilities. Cross-campus access is allowed via group memberships that are managed per campus. Due to individual campus restraints, each instance varies by version number and it is extremely difficult to match version numbers between campuses. Matching versions will allow additional features to become available cross-campus and would give a consistent look and feel when accessing the interfaces. District Office has already absorbed the function of the

Onbase Database service. For the reasons above and to simplify central management, we should explore what it takes for District Office to absorb the various components spread out across the colleges. There is a possibility that this could result in decreased costs since each instance is individually paid for by the campus.

Mobile Device Management (MDM)
Over the years, we have seen a steady increase in the number of mobile devices being purchased and deployed across the different departments on campus. With no standard way of managing those devices we often are at a loss when trying to consistently deploy, update, locate, and generally manage those devices. We have no visibility into what we have and how those mobile devices are configured. Having an MDM solution will give us some of the answers to these questions. We have looked at a few solutions, but none of them have so far filled the entire need. We will continue to look at the different solutions available and have partnered with District to look at one solution and are open to other campus partnerships as well. There is currently no costs associated with this strategy, however it is estimated that the costs could be around $30 per device, per year.