



Los Rios CCD
2015-2016 UNIT PLAN
SUPPORT SERVICES

Unit: Information Technology (DOIT)

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I. Unit Plan

Definition of a Support Services Department/Unit

For purposes of this planning document, a support services unit is defined as a District department which is responsible for providing services throughout the District in a manner which creates and maintains an optimal learning environment for students and/or provides services necessary to support the overall operation of the District and colleges.

Unit Plan Purpose

Unit plans are annual documents created and used by District units to develop and maintain high quality services to support student learning and District and college operations. This operational plan allows the department/unit to appropriately implement its specific responsibilities to support accreditation standards, the LRCCD Vision/Mission/Values Statement, the LRCCD Strategic Directions document, changes to federal and state laws that impact the colleges and District, annual LRCCD executive staff goals, and other major district plans. Plan implementation is supported by allocations provided in the annual District Budget. Together these documents make up a major portion of the ongoing institutional planning, implementation, and evaluation cycle necessary to ensure continuous program and service improvement. The Accrediting Commission's Standard 1.B.3-4 states:

The institution assesses progress toward achieving its stated goals and makes decisions regarding the improvement of institutional effectiveness in an ongoing and systematic cycle of evaluation, integrated planning, resource allocation, implementation, and re-evaluation. Evaluation is based on analyses of both quantitative and qualitative data.

The institution provides evidence that the planning process is broad-based, offers opportunities for input by appropriate constituencies, allocates necessary resources, and leads to improvement of institutional effectiveness.

The Role of Unit Plans in the Overall Institutional Evaluation, Planning, and Improvement Cycle
LRCCD supports the concept of evaluating current services to determine opportunities for improvement. Unit plans are used by units to identify growth and improvement needs at the operational level, and then provide information to the appropriate administrative and governance levels about the resources and activities required to meet the identified needs.

The District recognizes that its current rate of change, increased enrollment demand, unstable state budget allocations, ongoing facility expansion, changing technology requirements and the rapid growth and demographic changes in its surrounding communities require both short-term and long-term planning efforts. Therefore, unit plans focus on a 1-year time frame directly linked to resource allocations, while also encouraging departments/units to reference or append long-term plans where appropriate.

Plan Due Date

Unit plans are required to be updated annually by June 1 of each year and use this template. A copy of the review will be maintained in the unit and the Office of Education and Technology

II. Mission Statement

Provide your unit's mission statement below. Your statement must align with the District's mission statement.

Provide your unit's mission statement below.

- Provide an information technology infrastructure and services that support faculty use of technology in classroom instruction
- Provide an information technology infrastructure and services that support faculty and students in online instruction
- Provide an information technology infrastructure and services that facilitate students as they apply, enroll, and receive services throughout their entire relationship with Los Rios.
- Provide an information technology infrastructure and services that support administrative functions including Human Resources, Payroll, Budgets, Procurement, Accounting, and Student Records.
- Facilitate the development of IT standards and procedures that have district-wide applicability and benefit.

For reference, the following are LRCCD's Vision and Mission statements.

Vision Statement

We, the Los Rios community colleges, provide outstanding programs and services so that all students meet and exceed their educational, career, personal and social goals. We meet the social and economic needs of the community.

Mission Statement

Relying on their professional and organizational excellence, the Los Rios community colleges:

- Provide outstanding undergraduate education, offering programs that lead to certificates, associate degrees, and transfer;
- Provide excellent career and technical educational programs that prepare students for job entry and job advancement through improved skills and knowledge, including the demands of new technologies;
- Provide a comprehensive range of student development programs and services that support student success and enrich student life;
- Provide educational services that address needs in basic skills, English as a second language, and lifelong learning; and
- Promote the social and economic development of the region by educating the workforce and offering responsive programs such as service learning, business partnerships, workforce literacy, training, and economic development centers.

III. Unit Responsibilities and Projects

List your unit's primary assigned responsibilities including those related to creating and/or supporting an effective learning environment. Also, identify any expected changes in responsibilities or major new projects (e.g. opening of new facilities, IT infrastructure upgrades, etc.) for the next academic year (summer, fall, spring). Please reference any LRCCD Strategic Plan strategies, accreditation standards or policies, or changes to state or federal laws that are informing your changes in primary responsibilities or new projects.

List your unit's primary responsibilities (ongoing):

The Information Technology Unit at the District Office (DOIT) is comprised of three primary management units and several sub-units within each management unit. The management units are made up of the Technical Services unit, the Production Services unit, and the Application Services unit. Together, these three units comprise DOIT.

Primary Responsibilities – Technical Services Unit – currently organized into five teams.
(*Transmission Infrastructure, Telephony, End User Computing, Systems Infrastructure, Network Infrastructure*)

The Transmission Infrastructure team is responsible for the physical layer of the LRCCD network from the service provider to the edge device, each LRCCD datacenter, each LRCCD main distribution frame (MDF) facility, each LRCCD intermediate distribution frame (IDF) facility, and each telecommunications room used for the provisioning and delivery of LRCCD network services. They define and document the physical layer standards, communicate those standards to all affected parties, and enforce adherence to those standards. The physical layer of the LRCCD network includes all of Layer 1 of the Open Systems Interconnect (OSI) model and as such provides the means of transmission of data and the pathway for all LRCCD networked data communications. This includes all cabling, fiber or copper, used to transmit data within a building, between buildings at a location, between locations, and to the Internet service provider. Beyond OSI Layer 1, the physical layer responsibilities of the team include power and grounding, environmental control, physical security, and equipment racking, mounting and bonding. The Transmission Infrastructure team is also responsible for documenting any changes to the physical layer, and ensuring that accurate as-built drawings are maintained and available for all district owned and leased LRCCD networked facilities. Finally, this team is responsible for collaborating with all stakeholders involved in any network infrastructure project to ensure that the resultant work product meets district physical layer standards. This team inspects both planned and completed work to ensure adherence to defined LRCCD standards as well as all Federal and State codes and regulations (e.g. NEC, ADA, Cal/OSHA).

The Telephony team is responsible for maintaining and supporting district telephony including all legacy telephone systems as well as the Lync VoIP telephony and unified messaging system. This includes all telephony projects, additions, moves, and changes to the number of phones, the location of phones, the configuration of phones, and/or the configuration of services or call management utilities required throughout the district. In addition, the Telephony team is responsible for all standard carrier lines and all emergency telephones and has historically been responsible for the integration of emergency telephone services into district business telephone systems. With the replacement of obsolete NEC PBX TDM systems and their replacement with business communications VoIP telephony

systems, public safety appropriate emergency telephony solutions are planned to be moved to their own systems that meet public safety requirements. As such, the Telephony team has been working and will continue to work with the LRCCD Police Department to support their migration from the NEC PBX to more reliable, secure and robust communications systems.

The End User Computing team is responsible for all district office PC and laptop acquisitions, configuration, deployment, maintenance, support, repair, and replacement management. They are also responsible for the installation, configuration, maintenance, upgrades, patches and support of all standard and most nonstandard software installations including but not limited to operating system software, productivity software, and security software. This team is responsible for supporting district office computer users and their workstations, training environments (both physical and virtual), meeting room presentation environments, kiosk environments, and all printing, scanning, and duplication services not provided by the District Duplication Services department.

The Systems Infrastructure team is responsible for all network accounts for all network users throughout the district and for the creation, configuration, maintenance, and support of those accounts, account groups, organizational units, security and security classes, rights and privileges for those accounts for as long as the accounts are to remain in effect. This team is also responsible for district email communication and collaboration tools, data storage, data backup and archival, and data replication and recoverability. The Systems Infrastructure team, in conjunction with the Network Infrastructure team is also responsible for the design, deployment, configuration, maintenance, support, and replacement management for district virtual server environments including all necessary physical equipment and other ancillary resources required to support the virtual environments. Furthermore, this team is responsible for provisioning and building-out both server and storage environments for all internal DOIT needs as related to providing production, test, and development environments for other LRCCD technology teams.

The Network Infrastructure team is responsible for district-wide local and wide-area networking architecture, design, implementation, security, maintenance and support. This team is generally responsible for network layers two through five including the LRCCD connection to the Internet, network routing, network security, and switching infrastructures, data and network segmentation, and session control for all district office offered and controlled network services. This team specifies, orders, receives, configures, deploys and supports all networking equipment necessary for the delivery of district network services at the district office and at each district connected facility. This team supports all district networking equipment including but not limited to routers, firewalls, intrusion detection and prevention systems, switching (core, distribution, edge, and switching capable telephony devices), wireless controllers, wireless access points, telephony gateways, and video gateways. This includes all core network related support for the LRCCD colleges and for the students at those colleges. With few and limited exceptions, this team is responsible for each data packet that traverses a college local area network from either a wired or wireless device, and with no exceptions, this team is responsible for each data packet that traverses the district-wide area network to reach the DO, another college, or the Internet. The Network Infrastructure team is responsible for the prioritization of all network traffic within and between networks to ensure public safety, student access to instruction, and the network continuity of business and student services functions necessary to support the district's mission.

Technical Services Unit Major Projects

The Technical Services Unit has several large and multi-year projects continuing into and through this planning cycle. Projects include: Expanding district network capacity to the Internet, Expanding network capacity to the colleges, Creating reliable network links between the colleges and district datacenters, redesigning district-wide network and connectivity architecture, upgrading district-wide wireless networking infrastructure, implementing 10 Gbps capable firewall and intrusion prevention systems, replacing core and distribution switching infrastructure in LRCCD datacenters, replacing core and distribution switching infrastructures at at-least one LRCCD college, modernizing the district data centers with SmartRow technology, and documenting and enforcing district-wide infrastructure standards. The Technical Services Unit successfully completed production storage and recoverability architecture projects, and the Wireless standards project. The Lync project is nearly complete. The Lync project is the district-wide telephony and unified messaging solution and the replacement of the legacy NEC PBX TDM telephone system. The initial rollout of handsets and services was originally scheduled to be completed before the end of the Spring term in 2015. The NEC PBX is currently scheduled to be removed from service by the end of the Fall 2015 term which will require migration of all remaining analog TDM services (elevator, alarm, fax, and security phones) from the legacy system.

Technical Services Unit Assessment Results, Gaps, and Initiatives Identified

Last year, the Technical Services Unit engaged in both internally and externally conducted assessments of overall Information Architecture and critical Network Services. Initial dialogue with district leadership, college leadership, DOIT technical staff, and college technical leadership and technical staff produced general consensus on the existence, or perceived existence, of significant operational risks and meaningful gaps between where we believe we are and where we believe we need to be. The perceived gaps and risks were reviewed by DOIT leadership and reviewed with College IT staff. It became clear that several gap/risks stood out from the others as requiring special attention. Six areas of gap/risk were consistently identified as critical. The first three gap/risk areas were investigated and scoped using internal assessments. As such, assessments of our Backup & Recoverability Architecture, Wireless Architecture, and Datacenter Architecture were conducted by DOIT staff in conjunction with College IT staff and Facilities Maintenance staff. Considering district goals and DOIT business objectives, we assessed the degree to which we are doing the right things, doing them well, and the degree to which we are fit to compete in the future. Below is a high-level summary of critical gaps and their resulting initiatives.

- Backup & Recoverability Architecture – significant gaps
 - District – Our confidence in our ability to recover systems from tape is very low (resolved)
 - District – Archival tape systems at end of useful life (resolved)
 - District – Backup & Recovery systems and storage capacity inadequate – some production systems excluded from Archival process (resolved)
 - College – Backup challenges exist at multiple colleges (resolved)
 - College – Disparate Archival systems across colleges (no longer a gap)
- Wireless Architecture – significant gaps
 - District – Wireless AP's at or nearing end of life (partially resolved)
 - District – Controller software issues and aging AP's negatively affect service (partially resolved)

- District – Wireless vendor (Motorola) disposed of the product line – no future higher education product focus expected – (new standard selected – resolved)
- College – Wireless implementations incomplete at every college (partially resolved)
- College – Wireless service not consistently meeting the needs of students or faculty (in process)
- Datacenter Architecture - gaps
 - District – Primary datacenter condition exposes district to excessive risks of failure (Water, Power, HVAC, cabling, etc.) (working with FM to resolve)
 - District – Secondary datacenter similar to primary however co-located with FLC equipment and regularly intermingled with FLC equipment and services (not resolved)
 - District – No datacenter with adequate environmental controls or adequate power infrastructure (not resolved)
 - District/College – Construction/Remodel Standards (e.g. Physical Layer, Environmental controls, Power, UPS, Generator, NEC, ADA, etc.) not consistently utilized

Several urgent projects or initiatives became apparent from the assessments. Samples of the projects and initiatives include but are not limited to the following:

- Replace Disk to Tape architecture with appropriately sized Disk to Disk architecture (Complete)
- Replace Tape off-site Archival service with “Third-site” Archival architecture (Complete)
- Replace (as feasible) disparate archival software and hardware solutions with a district standard – partnering with colleges where feasible (Complete)
- Select new district-wide standard wireless solution in collaboration with colleges (Complete)
- Implement new standard wireless controllers at the DO datacenter (Complete)
- Replace Motorola wireless with new Cisco wireless at each of the colleges (in process)
- Expand college wireless service and coverage areas (in process)
- Partner with FM to update existing datacenters with SmartRow or similar technologies (research)

The next three critical risk areas were assessed externally by technology professionals specializing in key areas of Network Architecture and reliable network service delivery. The Technical Services Unit contracted with Shandom Consulting for a professional technical assessment of the LRCCD Network Core Architecture, Internet Connectivity Architecture, and Firewall Architecture. Below is a high-level summary of findings, recommendations, and resulting initiatives from each of the assessments.

- Network Core Architecture Assessment
 - Summary of Findings
 - Obsolete or soon to be obsolete core network devices
 - Network devices listed as “End of Life” by manufacturer
 - Lack of visibility into network performance metrics
 - Three disparate monitoring platforms – unclear monitoring strategy
 - Many single points of failure throughout architecture
 - Where redundant power supplies exist – they are frequently connected to the same circuit
 - Manual configuration management and unmonitored configuration changes using shared device credentials
 - Quality of Service strategy not meeting end user needs
 - Existing switching platform has limited QoS options adversely affecting network bandwidth management options
 - High Availability strategy is incomplete – Layer 2 focus

- Switch uplinks are oversubscribed by a ratio of 48:1 (more than twice the best practice ratio)
- Summary of Recommendations
 - Replace core networking platform and equipment
 - Redesign fiber WAN connectivity – provide redundant connections to datacenters
 - Improve network core fault tolerance with redundant trunked links and server links
 - Deploy redundant core switches with interconnected multiple trunked 10 gigabit connections to provide layer 2 & 3 fault tolerance (using a link aggregation design)
 - Upgrade switch uplink connections to 10 gigabit
 - Consider a new core switch layer utilizing virtual switching technologies
 - Implement Layer 2 management features (STRG, BPDU and Port Security)
 - Implement Layer 3 management protocols (VRRP, VRF) and Layer 3 diversity
 - Upgrade QoS and increase circuit bandwidth
 - Enable Netflow and use a Netflow collector
 - Upgrade/Replace existing power distribution units and UPS's and add redundant power supplies to key network equipment – using a redundant circuit model
 - Create better, more complete documentation to be used in configuration management and troubleshooting
 - Develop a formal process of identifying, tracking and deploying software across network devices
 - Develop a network monitoring strategy with a single, vendor agnostic monitoring system
 - Deploy a Configuration Management tool to enable auditing, archival and automated alerts
- Summary of High Level Projects and Initiatives relative to this assessment
 - Work with CENIC and the CCCCCO to increase our CENIC connectivity
 - Work with CENIC and the CCCCCO to build alternate connectivity to each college
 - Review alternate fiber connectivity between colleges and the LRCCD datacenters
 - Implement 10 gigabit Firewalls at DO and FLC datacenters
 - Implement Intrusion Prevention System at DO and FLC datacenters
 - Replace datacenter core network infrastructure
 - Replace datacenter network distribution infrastructure
 - Partner with American River College to Architect, Engineer, Acquire, Build, and Deploy a Student Centered, Service Focused network
 - Explore extended DOIT involvement in college switching and UPS replacement cycles
 - Develop Centralized Budget for Switching and UPS replacements
 - Partner with American River College to replace their wireless network
 - Explore Network Access Control solutions
 - Explore Network Security Assessment
 - Leverage new networking capabilities with a redesign of our network Architecture
 - Engineer a Highly Available, Robust and Manageable network with QoS and traffic shaping on both private networks and our public network

- Define Configuration Management Strategy and operational objectives
- Explore Configuration Management Tools and define criteria for product assessment
- Define Network Monitoring Strategy and operational objectives with escalation
- Explore Network Monitoring Tools and define criteria for product assessment
- Internet Architecture Assessment
 - Summary of Findings
 - Top 10 Technology Concerns from LRCCD College IT Staff:
 1. Bandwidth Limitations to the desktop, between buildings, to datacenter limit success of technology initiatives
 2. Network Transparency and visibility into network performance, utilization, security, and data flows is nearly universally desired
 3. Many Single Points of Failure and overall lack of Redundancy / Fault Tolerance for key circuits and networking equipment
 4. Inadequate Wireless Network does not meet college wireless needs
 5. Voice over IP (VoIP) call quality and fault tolerance on installed network infrastructure
 6. IT Support Staffing Levels create single points of failure and are inconsistent with the diversity of the environment
 7. Intra-College Communications, and input from college IT staff with user community involvement need to inform technology policy decisions
 8. Clarity of District Information Technology Strategy/Vision and the consistency of its communication
 9. Standards for New Technology Implementations and onboarding
 10. Network Access Control policies, procedures, mechanisms and tools necessary to protect LRCCD networked data and assets
 - Overall - Lack of available bandwidth for core applications
 - Bandwidth to the Internet is congested during business hours causing contention between critical business applications and non-critical services
 - Overall - Lack of visibility into network performance metrics
 - Three disparate monitoring platforms – unclear monitoring strategy
 - Overall - Many single points of failure throughout architecture
 - Not all Colleges have redundant physical pathways to the Internet
 - Single Internet service provider (CENIC)
 - The Active/Passive circuit connectivity model leaves 50% of the available bandwidth inaccessible 100% of the time
 - Overall - Single person dependencies in key IT roles
 - Geographically and Technically diverse IT environment with key dependencies in a few critical roles
 - Overall - High Availability strategy is incomplete
 - Active/Passive Internet connectivity through a single provider
 - Overall Assessment of current IT Management Maturity - Reactive
 - Summary of Recommendations
 - Implement fully redundant (and active) Internet connectivity
 - Load Balance Internet traffic across redundant links
 - Replace VRRP failover strategy with Border Gateway Protocol (BGP)

- Re-engineer internal traffic patterns and network prefix advertisements
 - Expand Internet bandwidth capacity at the border and between colleges
 - Utilize network monitoring tools that track real time statistics as well as averages over time through re-defining and re-engineering our monitoring granularity
 - Identify, document, communicate and measure Acceptable Outage Intervals
 - Apply and monitor quality of service (QoS) policies and their effect on traffic
 - Consider/Evaluate the addition of a secondary Internet Service Provider connection
 - Obtain Service Level Agreements (SLAs) with all service and transport providers where ever possible and re-evaluate relationships/contracts where SLAs are not possible.
 - Expand and formalize on-the-job cross training and an internal “mentoring” process
- Firewall Architecture Assessment
 - Summary of Findings
 - Firewall failover strategy does not meet business needs
 - Single person dependency in firewall support role
 - Lack of comprehensive reporting and logging capability
 - Lack of visibility into firewall performance metrics
 - Many single points of failure throughout architecture
 - Summary of Recommendations (not previously identified above)
 - Replace the existing firewall platform
 - Consider District Information Security Officer (ISO) level review of broad firewall policies and change management methodology
 - Re-architect firewall solution to consolidate to a single platform and to as few devices as necessary
 - Implement and utilize a log correlation engine with High Risk event notification
 - Ensure reverse logic monitoring points exist and return desired negative responses
 - Implement a Configuration Management System that meets industry standard notification and auditing requirements
 - Ensure Remote Authentication Protocols allow for access tracking and reporting

Currently, only one of the districts four colleges has an independent connection to the Internet. Each of the other colleges is dependent upon leased fiber connections back to the district office data center for their access to district resources and the Internet. In some cases, a single strand of fiber is the only thing connecting a Los Rios College (CRC) to the Internet. Assessments conducted this last year have identified critical gaps in our ability to deliver services to students.

As identified last year, the Technical Services Unit, in collaboration with the colleges, must design, architect, engineer and implement a secure, reliable, performant and effective network that meets LRCCD business objectives and is integrated to the highest degree possible to ensure both the effectiveness and efficiency of maintenance and support activities. These necessary network upgrades will not be limited to services and equipment alone as business practices, maintenance cycles, operational tasks, support activities, and overall manageability, performance, and reliability are dependent upon the solutions chosen. Affected areas of the network include: Internet connectivity, routing, firewalls, switching infrastructure at all levels, wireless services, and all voice, video, and data

services. The Technical Services unit has approached and petitioned the State Chancellors Office and CENIC for improved connectivity and are together developing a plan and timeline.

The team will continue to work with third-party networking consultants to ensure that LRCCD business objectives are the focus and foundation for technical solutions. The results of these two efforts will form the foundation for LRCCD to build the technological infrastructure necessary to meet the needs of our students today and to be fit to compete in the future.

Data operability and recoverability are key topics both for the district office and for each of the LRCCD colleges. The Technical Services unit has recently expanded the storage area network in our primary and secondary data centers to address system performance issues. This however, was simply the first step necessary to address the district's business continuity and disaster recovery challenges. The second step was to acquire, install and configure both the backup and recovery disk solutions and the backup and recovery software solutions necessary to meet LRCCD business objectives. The third step was to secure, equip, and connect an appropriate "third-site" to meet district-wide data protection and disaster recovery needs. The district's disk-to-disk-to-tape model has been replaced with a disk-to-disk-to-disk model with multiple options for both continuity and recoverability including the use of remote third site storage.

Production Services Unit Primary Responsibilities

(Systems & Database Support, Application Configuration Management, Computer Operations, Client Support, Learning Management Systems)

The Production Services Unit is also organized into five teams. The Systems & Database Support team is primarily responsible for managing and administering virtual servers and databases for LRCCD's PeopleSoft, Desire2Learn, PowerFAIDS, NetPartner, and reporting Data Mart environments. This team is responsible for database performance, virtual server environment performance, production system business continuity and disaster recovery as well as for the business continuity of our testing and development environments. To accomplish this, the Systems and Database Support team is responsible for the installation, upgrade, patching and management of Linux and Windows Server operating system environments, Oracle and SQL database management environments, and multiple production system software applications and middleware tools. This team must manage version control in each application environment and ensure the operability of each of the district production systems in a manner that meets district business objectives. The Systems & Database Support team must interface with business analysts, IT analysts, and LRCCD management decision-makers to ensure that the business objectives are clearly defined and that the ability (or inability) of each system to achieve those objectives is clearly understood.

The Application Configuration Management (CM) team within the Production Services Unit is the gatekeeper for PeopleSoft production systems and the owner of the root directory for those systems. The CM team is responsible for version control for nearly all core production applications supported by the Production Services unit. The CM team is responsible for creating and refreshing the development and testing environments (instances) necessary for the development of program modifications and for the testing of those modifications, application-specific patches, and application-specific upgrades. This team is responsible for ensuring that all code changes to each production system completes the configuration management cycle through development and successful unit, integration, and system testing instances. As the gatekeepers and owners of the production code collection in the application root directory, the

CM team is the “last line of defense” of our production systems as we use those systems to meet the needs of the district.

The Computer Operations team is responsible for the 24 hour a day, five day per week operation of the LRCCD primary data center. Operators are responsible for the sequencing and execution of both automated batch and manual series operations. These operations produce high-speed print and electronic output reports in many forms including but not limited to financial reports, human resource reports, student records reports, and warrants. The Computer Operations team also performs internal system functions including but not limited to alarm monitoring, incident response, reporting of performance metrics, and application-specific maintenance.

The Client Support team is known colloquially as the Helpdesk. The Helpdesk team assists and supports all system users (students, faculty, and staff) in their attempts to utilize system resources. They assist all users with authentication problems, navigation problems, application problems, permissions issues, telephone problems, network problems, and desktop issues. They assist adjunct faculty with the assignment and use of Unified Messaging mailboxes. The Helpdesk supports client use of PeopleSoft Campus Solutions eServices, PeopleSoft Human Resources and Financial systems, PowerFAIDS/Netpartner Financial Aid system, Online Grading System, Desire2Learn courses and course development environments, the Google apps environment, and the Microsoft productivity suite of applications. The helpdesk also creates trouble tickets and escalates serious technical issues to appropriate groups and individuals.

The Learning Management Systems team is primarily responsible for the administration of the Desire2Learn (D2L) Learning Management System (LMS) application and the coordination of Distance Education (DE) activities as they relate to the use and availability of D2L. This team is known colloquially as the D2L team. In collaboration with college LMS/DE coordinators, the D2L team plans for, schedules and performs maintenance, upgrades, and patches to the D2L environment. The D2L team performs all Configuration Management duties, application capacity planning, application performance monitoring and management, and all system issue resolution, business continuity, and disaster recovery activities for the D2L environment. More than 50% of all LRCCD course offerings have web accessible content available through D2L and more than 80% of all LRCCD students are enrolled in one or more D2L course sections.

Production Services Unit Major Projects

For this planning year, the Production Services Unit is scheduled to begin or continue working on eleven major projects and to make significant contributions to two other projects. Major projects include the PeopleSoft Financials 9.2 and PeopleTools 8.54 upgrade, PowerFAIDS/NetPartner upgrades to 20.5, D2L upgrade to 10.4, D2L-Pearson integration, D2L-Google Apps integration, D2L VideoNote and Wiggio implementation, Quarterly patch upgrades to all three PeopleSoft applications, as well as continuation of projects including CIVITAS predictive analytics, expanded D2L use for SSSP training activities, expanded use of D2L for early alert notifications, online tutoring, online counseling, and other smaller projects. The contribution to Technical Services projects (data center assessment and remodel, recoverability architecture) will also continue.

Application Services Unit Primary Responsibilities

(Financials/Human Resources, Construction, Student Administration)

The Application Development Department is responsible for the implementation, maintenance and modifications of software systems that support the core business functions of the Los Rios Community College District. Systems of responsibility include the HR, Financial & Student Administration software systems in addition to auxiliary systems and the integration of these systems to present a unified, coherent data structure.

The Application Services Unit is currently organized into three teams. The FS/HR/FA team is primarily responsible for PeopleSoft financials, PeopleSoft human resources, and PeopleSoft financial aid application support. This team supports the PeopleSoft application and the business customers who use the PeopleSoft application to achieve LRCCD business objectives and the PeopleSoft Financial Aid module. The Construction Team is the largest of the three Application Services Unit teams and supports the greatest variety of systems and systems integration efforts. For example, the Construction Team directly supports or supports integration with the following: PeopleSoft (all modules), Los Rios Gmail, the RDM data warehouse, the SDM data warehouse, Higher One, eTranscript California, The National Student Clearinghouse, CyberSource, Active Directory integration, District Office Web Services, and others. Finally, the Student Administration team focuses primarily on the support of student services and student records within the PeopleSoft system. In addition to the students themselves, the primary customer of the Student Administration team are the student services professionals at the colleges and district-wide student services leadership. The Application Services Unit performs all PeopleSoft application development, customization and maintenance services.

Application Services Unit Major Projects

The Application Services Unit is the largest of the three operational units within DOIT. Not surprisingly, Application Services has a significant number of major projects and initiatives supporting both the maintenance and upkeep of LRCCD's internal infrastructure as well as customer requested projects having specific business requirements. Currently, Application Services is the only DOIT unit that participates in a district-wide project and initiative prioritization process. Many of the projects listed below are a result of that prioritization process. Projects planned for the next year include the PeopleSoft 8.54 upgrade for CS & HR, the HR 9.2 Upgrade, the Pre-Requisite Checking Project for English Courses, the Student Early Tracking (Prospecting) project, the CS Mobility project, the Rules based Transfer Credit project, the PeopleSoft financial aid project, the Affordable Care Act Reporting project, the mobile services and mobilization project, the PeopleSoft financials 9.2 upgrade, as well as a number of projects that have the potential to rise in importance to be included in this year's list if required by new regulations or laws such as the UTP Fee change and AB1522; Sick Leave for Temporary Employees.

List any new or expected changes in primary responsibilities this year (ongoing):

Expected increase in scope of responsibilities of Technical Services Unit to include Network Distribution layer at each College.

List any new projects your unit expects to implement this year (one-time only): Included in narrative above

IV. Unit Plans

Based on your unit's listed responsibilities and projects, most recent Program Review, and any additional information provided by the appropriate administrator and/or DIR, use the following question prompts and linked forms to document how your unit will complete your assigned responsibilities and projects. State your unit's plans to:

- A. Identify appropriate **equipment, software, supplies** needed to support new projects, expanded responsibilities, and necessary upgrades.

Network Infrastructure and Architecture Equipment Upgrades will require the acquisition of:

- Routers – Core, Distribution and Edge Switches
- Power/Circuit Upgrades, Uninterruptable Power Supplies, Power Distribution Units
- “SmartRow” technologies for Datacenter and Main Distribution Fabric (MDF) locations
- Necessary Physical Infrastructure investments are significant and extensive - excluding active electronics as indicated above, LRCCD fiber between colleges and connecting buildings within colleges is currently inadequate to support student and faculty needs.

Management and Productivity Software will require the acquisition and installation of:

- Helpdesk – Asset Management – Patch Management Tools
- Office 365 – Cloud services
- Administration and Configuration Management Tools (Database, System, Application levels)
- System Monitoring Tools, Reporting Tools and Notification/Escalation Tools

- B. Identify appropriate **staffing** needed to support new projects or expanded responsibilities.

DOIT will develop a team roles matrix which will identify and specify current resource allocations across the entire IT organization to help us better understand our project capacity as well as our operational capacity. Several significant, new, and highly prioritized SSSP activities and project requests made it clear to the District that additional resources were necessary to support both mandatory (regulatory in nature) as well as high priority SSSP projects. The three new technical positions hired last planning cycle are a direct result of that analysis and allow us to identify and specify funding sources and amounts to tie directly to SSSP activities.

Ongoing staffing needs include but are not limited to the following:

1. IT Project Manager / Coordinator to execute or to coordinate successful execution of DOIT projects and to ensure consistency among and across projects
2. PeopleSoft Database and Server Administration
3. PCI Compliance and Data Security Project Coordinator
4. PeopleSoft Configuration Management

- C. Identify **new buildings or major renovations** needed to support the completion of unit responsibilities.

Infrastructure assessments conducted last planning cycle identified significant deficiencies in existing network and telecommunications infrastructure design, implementation, and maintenance

which expose the district to undue levels of risk. Major renovations are necessary in both the DO and FLC datacenters and in a significant number of Network Core and Distribution facilities across the district.

D. Identify **minor remodels or alterations** needed to support the completion of unit responsibilities.

DOIT has extremely limited storage space and regularly uses office space and cubicle space for the storage of equipment ranging from new equipment (receiving) to old equipment being prepared for surplus, to fully processed items awaiting disposal. DOIT has requested a “surplus” staging area in multiple “available” areas but has been unsuccessful securing “semi-permanent” space. Minor remodels may be required this coming year to create appropriate working locations for staff members.

DOIT has added several staff members in the last year and office space for the new staff is limited. We will continue to seek alternate locations through minor remodels and consolidations. This planning period, several members of the Technical Services will move into suite 400 creating opportunities for better space utilization in suite 1200.

E. Identify **professional development** activities that help unit members stay current with their job requirements. Please list expected individual and department requests for professional development activities.

DOIT is regularly represented at the PeopleSoft HEUG conferences and other PeopleSoft professional gatherings. Similarly, CISOA conferences, Tech Junction conferences, VMWorld, and other conferences are available for DOIT staff. Role and function specific technical training is also made available to technical staff. Gartner resources, including weekly Gartner updates and other professional development opportunities have been made available as appropriate for maintaining currency in an ever changing technical environment. We plan to continue professional development and professional growth activities at a level similar to the investment made last planning cycle. Additionally, DOIT will provide access to specialty training in many areas (e.g. Oracle Middleware, Canvas, D2L Fusion, Cisco IOS, etc). Also, DOIT has secured access to professional technical learning resources for all technical staff. Historically, access to these resources has been limited to senior IT leadership. However, a key take away from the first ever all DOIT retreat (last planning period) was the need for professional development opportunities and the need for leadership support of training for technical staff. From training on how to use basic Microsoft Productivity Suite applications (Outlook, Word, Excel, PowerPoint, Visio, Project) to training on LRCCD specific technical practices and processes, the creation of technical professional development opportunities will benefit the District significantly.

F. Ensure required **safety and information security procedures** are followed to create and maintain a safe work environment. If individuals in your unit require training, please refer to the LRCCD Human Resources online safety and information security training opportunities.

As stated previously, increased professional development, including safety training and security procedures training is very important to the DOIT team.

- G. Ensure unit members participate, and provide **leadership** to the district, in their areas of expertise.

DOIT is a large and highly engaged group of individuals providing both leadership and teamwork contributions to virtually every aspect of LRCCD operations and activities. DOIT team members lead or are directly involved with all projects related to district-wide student matriculation processes and MIS reporting activities, Distance Education learning management system efforts, and district-wide technology infrastructure projects.

- H. Ensure that the results from **assessments on quality and satisfaction** are used to improve services.

Briefly describe the techniques/assessments currently used to ensure quality or required external standards (e.g., audits, inspections). Also, describe techniques/assessments being developed for use next fiscal year.

This last planning cycle, three external professional assessments were conducted and the results of those assessments are being used to improve the LRCCD Network. Additional assessments are planned for this next planning cycle. DOIT is still in process with the development of its metrics to improve its assessment and accountability processes and to create a cadence of accountability. As DOIT develops its metrics and dashboard, assessments or external validation (surveys and focus groups) will need to be defined. DOIT intends to work with District Office Institutional Research (DOIR) on the development, delivery and distribution, evaluation, and summarization and reporting as relates to both surveys and focus group activities.

DOIT partners with the LRCCD Internal Audit team to ensure continuous assessment of compliance and risk. Gaps in compliance are addressed and reassessed and risks are mediated and reevaluated on a regular basis. The DOIT LMS support team and the DOIR team partner with college LMS/DE Coordinators and together they conduct regular student surveys focused on the student experience using the LRCCD LMS (D2L). The results of these surveys are used to improve service and support for our students using D2L.

- I. Ensure unit members know where and how to **refer employees or members of the public** needing support assistance not provided by your unit. Briefly describe what is being done in this regard.

DOIT is the district-wide source for technical assistance to students, faculty, and staff through the DOIT Helpdesk. The DOIT Helpdesk has been directing inquiries or directly answering student, employee and public questions for many years.

- J. State how your department/unit encourages participation in **individual service activities** and volunteerism supporting students (e.g., access/success, e-recycling, presentations, leading workshops, district committees, etc.).

DOIT encourages individual service activities in support of student access and student success but does not currently endorse or actively promote any particular activity, group, or organization.

- K. State your unit's plans to develop and implement **any special or long term projects**, including those identified in your most recent Program Review (if applicable) and the LRCCD Strategic Plan (if

applicable). If project plan(s) are contained in another document, list each plan below and attach a copy to your unit plan. For all other project plans, briefly describe projects and indicate implementation timelines below.

Special projects include:

- Information Technology Strategic Assessment
- DOIT Dashboard and Maturity Modeling
- Project/Initiative level time tracking and reporting
- CIVITAS – Predictive Analytics

DOIT has historically measured workload in the form of numbers of students served, numbers of transactions, numbers of project requests, numbers of application enhancement requests, the increase in storage requirements, and number of helpdesk calls. Over the coming year, DOIT will develop metrics against which to measure its efficiency, effectiveness, and success. Furthermore, DOIT will develop a visual representation of those metrics in the form of a DOIT dashboard.

Major long term projects include:

- PeopleSoft Financial Aid migration from PowerFAIDs
- PeopleSoft eServices Mobile
- Crystal Reports upgrade
- Electronic Forms
- CENIC Upgrade to 10 gbps to the colleges
- Datacenter modernization
- Cabling and Infrastructure Standards Definition, Inspection, and Enforcement
- Network Private Addressing – District Network Architecture
- Active Directory and District Domain Architecture
- Office 365
- DO Core Network, DO-Datacenter Core Network, FLC-Datacenter Core Network
- ARC Core Network, Wireless Network, Physical Infrastructure
- SCC-CRC-FLC Core Network, Wireless Network and Physical Infrastructure
- Design/Build PCI Compliance into financial transaction systems
- Help Desk system

- L. Please provide any **suggestions for improving** the District's unit plan process, including how to more effectively align with other District and college processes (strategic plan, other planning, resource allocation, etc.).

None at this time.

V. Appendix

List your unit's accomplishments based on completion of last year's unit plan.

- Lync VoIP telephony
- Assess LRCCD network architecture
- District wireless infrastructure standard set
- Back-up and Recoverability architecture
- BC/DR Third-site for Back-up data
- District Production Data – SAN Replacement/Upgrade
- Pre-Requisite Checking - Math
- PeopleSoft Cashiering
- PeopleSoft 8.53 upgrade
- D2L 10.3 upgrades
- PowerFAIDS 20.2 upgrade
- Library System upgrade (Sierra)
- DO Video Conferencing installation coordination
- D2L iPad Assignment Grader integration
- SSSP online orientation
- eServices Mobile access – RFP
- Bookstore Hosting
- Financial Aid Course Certificate Verification
- IRS Response to 1098t's
- Gmail Distribution – PIO to Students
- SSSP Priority Registration rules
- VoteNet Interface
- CS Hosted Order Page
- CS/HR PT 8.53.10 Upgrade
- iSEP 2.3
- PERS SCOE rewrite
- CSPRD data purge
- Assessment Standard Practices – Phase 1
- Academic Standings – Exclude non-credit
- HR/CS Patches
- Online eRequisition
- CCC BOG Application upgrade
- Not Anymore – anti-sexual violence awareness – Phase 1

List sources you used to support your unit plan statements.

Internet Architecture Assessment

Network Core Architecture Assessment

Firewall Architecture Assessment

Weekly project summary reports from the Production Services and Application Services Units (Paper)

Technical Services Project tracking and status report (SharePoint Excel document)

Attach supporting documents (Supporting Data from the DIR, etc.) following this page, identifying those you have attached in the text box, below.