California State University San Marcos

Division of Academic Affairs
Strategic Planning and Budget Cycle
Three-Year Rolling Budget/Hiring Plan for FYs 18/19, 19/20 and 20/21
Part I: Narrative, Sections A and B

Subdivision Unit: Instructional & Information Technology Services

PART I: NARRATIVE

A. Planning Assumptions

1) **Common planning assumptions for all Academic Affairs subdivision units**
   a. No FTES growth at the university level for each of the next three years, relative to 2017/18. The Colleges, Library and IITS can request growth money not to exceed 5% of the 17/18 allocations. Other units should not count on growth funds.
   b. A funding model for colleges based on student demand projections.
   c. Unit plans should align with and support the Academic Affairs Strategic Plan Goals; namely:
      i. Develop an Academic Master Plan that focuses on programs relevant to our changing society and student demographics.
      ii. Employ pedagogies that are relevant to our changing society and student demographics.
      iii. Invigorate faculty and student research activities.
      iv. Cultivate global perspectives.
      v. Provide faculty and staff professional development.
      vi. Develop non-state funding sources.
      vii. Provide needed academic technology and library resources.
   d. Programs and units should remain focused on the future and take into account realistic enrollment growth projections and strategic priorities in the unit for the next three years.
   e. Program Review findings, if any, should be considered.
   f. Program proposals currently under review should be considered and reflected as appropriate if an implementation date is anticipated during the period of the three-year rolling plan.

2) **Begin here enumerating planning assumptions for the unit**

   Assumption #1: CSUSM will Adopt & Support a New Technology Strategic Plan - Since early 2017, IITS has been engaged in a comprehensive and thoughtful campus-wide commitment to identify CSUSM's needs and the ways in which technology may be one of the contributing factors to meeting those needs. IITS views the numerous conversations with approximately 500 faculty, staff, and students, as a rare opportunity to guide our alignment of information and technology services with the needs, goals, and planning of the University. This multi-year effort will complete

in spring 2018 with the development of a new 5-year campus Technology Strategic Plan empowered to realize the campus vision, mission, and strategic priorities.

1a) IITS Focused on Operational Issues Pending Technology Strategic Plan Adoption - Pending the approval and publication of the plan, IITS is focused on more pressing issues, as we continue to face increased financial pressure, continued budget uncertainty, staff retention matters, changing IT service landscape, evolving campus service expectations, and the need to sustain and advance the campus' overall IT infrastructure. *Assumption: outcomes from the strategic plan will identify many areas in which we must allocate resources and few areas where we can reduce effort or cost.*

Assumption #2: Campus Technology Replacement Costs & Support Demands Exceed Resources – With the discontinuance of the technology loan funding (in October 2015), IITS does not have sufficient funding to maintain the scheduled replacement of computer equipment for faculty and staff as well as classrooms, labs, and the Data Center. CSUSM approved the new Technology Refresh Program in February 2017 with $800,000 in designated funding. This is *s*ubstantively underfunded, given the prior resources for this program that exceeded $1 million dollars (FY 12/13 $1.1 million, 13/14 $1.43 million, and 14/15 $1.88 million). At this reduced funding level, it is not possible for IITS to maintain all existing technology services at their prior functional and support levels, especially in lieu of the staffing challenges noted in Assumption #3. IITS funding has been further impacted by the reduction in General Fund chargebacks that were an important secondary funding source for the Refresh Program equipment and services. As IITS looks forward to FY 18/19 and beyond, the unit continues to struggle with developing firm budgetary commitments to any technology programs without the re-establishment of a stable and sustained multi-year funding model.

2a) Technology Refresh Program (TRP) – The TRP has been funded at a fixed amount of $800,000, an amount that was not based upon actual projected faculty and staff refresh units and associated costs. Additional funding has not been allocated to pay for the scheduled replacement of any of the 1,250 lab computers deployed across campus. Some of these lab computers are seven years old now, and will soon be inoperable due to hardware failure or incompatibility with current products. *Assumption: older equipment (i.e. not refreshed) will fail leaving affected labs inoperable.*

2b) Stabilization of the Chargeback Model – With the changes to the TRP along with the campus-wide move to limit General Fund chargebacks, the department has had to realign its fiscal resources. To address this, IITS has cut back on software licensing, terminated professional services, deferred purchases, and has had to deny faculty/staff requests for technologies they believe are necessary to their jobs. *Assumption: employees, particularly faculty, will continue to request systems and peripherals not covered by allocated refresh funds.*

2c) Limits Ability to Respond Effectively to New Faculty & Staff Requests – While the campus has continued to grow both its faculty and staff positions, the number of IT support staff has remained constant. With new faculty joining the campus with increasing research interests and needs, IITS does not have the funds to purchase equipment nor the staff available to meet these growing expectations. *Assumption: the campus will continue to use technological solutions for operations and research.*

Assumption #3: Retention and Recruitment of Qualified Professional Staff will continue to be a Challenge - In 2017, IITS faced the departure of eight (8) staff members including several with critical skill sets or responsibilities for core campus services. Given the strong local employment market for skilled technology professionals, IITS' highly trained and experienced IT staff are often recruited to significantly higher paying positions. Prospects are not much better on the recruitment side either, as multiple recruitments have highlighted a difficulty in bringing in a strong job-ready candidate pool. Due to the difficulties in both retention and recruitment, this has become a critical operational concern with staffing issues affecting all our planning assumptions. While the unit has already implemented multiple rounds of IRPs over the past four budget cycles, the historically lower salaries paid by the department relative to opportunities with neighboring institutions are having a negative impact on retention in the current economic environment. Additionally, IITS did not receive funds to provide these IRPs. To support this, the department has operated below a full staff complement in order to utilize salary savings to cover existing IRPs not funded in two prior budget requests. As permanent funds within the IITS budget are almost exclusively allocated to salaries, additional permanent resources will be necessary in order to circumvent a loss in staff/skills that are already proving to be highly impactful to the campus IT operations.

3a) Competitive Salaries are Required for Critical Skills - IITS has a small group of employees who have essential and highly valued technical skills; many now find their abilities in great demand by local employers. While these employees are generally happy at CSUSM, lower salaries, slower salary growth, and limited positional advancement are leading them to now look outside of the university. The cost of replacing these key employees is large, and the replacement employees often require significant training investment. Allowing our key employees to leave due to inadequate salary is not cost effective. *Assumption: demand, market salary & workplace benefits costs for highly skilled and trained IT staff will remain high.*

3b) Overwhelming Workload Creates Vulnerabilities – Workload for our critical skills employees are high and the demands on them are constant. Our highly skilled employees note that their workload is intense, and the department does not have enough staff needed to ensure that at least two people have the expertise for core campus technology services. *Assumption: the campus will continue to require support for evenings and weekends.*

3c) Recruitment of New Staff is Difficult - The local technology employment marketplace does not favor CSUSM and people with appropriate technology skills often do not apply to CSU San Marcos due to our low salary range. Reshuffling staff has also been a common occurrence, however moving IITS staff internally creates vacancies in other areas and leads to the burn out of existing staff. *Assumption: market demand for technology workers will remain high.*

3d) Changing Technologies Requires Continual Professional Development of Staff - Transitioning technology services and delivery methods will require retraining of staff to gain new and updated skills. The movement of some services to the cloud and SaaS introduces significant job shifts in terms of the skill required to support applications and services that either did not exist or were formerly run on campus. *Assumption: campus will continue to use third party applications and shift services to the cloud.*

Assumption #4: Technology Will Transform CSUSM Services & Applications - Technology trends are influencing society more than ever, shaping perspectives, changing life experiences, and shifting expectations for everyone. Students will expect universities to provide services uniquely suited to their academic and service needs. This is not just electronic versions of paper processes, but potentially new methods, which may be entirely different and require services that are highly efficient and secure. These changing expectations and perceived needs have units across campus pushing for new applications and services for students as well as faculty and staff. IITS is encouraged by all of the technology-supported initiatives that will provide the capabilities to make the campus more efficient and productive.

4a) Campus Use of Mobile Applications will Increase - Mobile access via an app or responsive website has become the default means of accessing information and services for many industries. CSUSM is seeing strong growth, with over 200,000 visits to the App in Fall 2017. The challenge for CSUSM will be to continue to support and maintain a common university-wide platform and deliver personalized information. *Assumption: continued reliance on mobile devices as primary method for accessing information.*

4b) CSUSM will Migrate Services to the Cloud as Appropriate – Every few years the IT industry goes through significant computing paradigm shifts. The industry is within one of those periods as some Data Center operations are moving to the Cloud. The Cloud is not a cheaper alternative; in fact, this is often a more expensive model that will move expenses from a one-time capital expenses to ongoing operating expenses. Even with its higher costs, companies are migrating to cloud to provide more redundancy and availability and to start focusing staff efforts away from maintaining hardware and shift it towards "digital transformation". *Assumption: campus will migrate services to the cloud.*

4c) Building Upon SaaS Delivered Services – CSUSM is transitioning some applications to Software-as-a-Service (SaaS) for a growing number of services. These SaaS applications

generally provide a robust set of functionality from which CSUSM staff then builds in customizations. Departments are also building their own SaaS services without the help of IITS. This provides an immediate solution for department needs, but as the information system evolves, it creates challenges when integrating with campus solutions. *Assumption: campus will take advantage of SAAS for improving business operations.*

Assumption #5: Provisioning of Services for the Campus Community – One of the emerging themes to come out of the strategic planning effort is the need to extend support hours, provide more self-help options, enhance outreach/communications, and provide workshops and training for the campus community. Feedback from faculty, staff, and students indicates there is a desire and need for providing support during evening hours, while classes are in session. Additionally, the ever-changing nature of our cloud-hosted services, such as the Microsoft Office365 suite, means that our users will need to be able to get ongoing help and training in a number of different formats. The technology sector has never been a place of stability, however with the shift to cloud based services, the concept of stable delivered software has shifted to a model of constant change. The best example is Office365, which is a platform that Microsoft changes on a continual basis with the addition (and sometimes the removal) of services. These ever-evolving platforms will bring about functional improvements, but at the cost of continual change and adaptation.

5a) Extending IITS Support Hours & Defining a Service Catalog – IITS will be developing a Service Catalog to define the official services of the department. One of the items to be defined is the extent to which support hours will be aligned with the instructional class periods so that staff are available to respond to inoperable technology. A secondary objective is to formalize LMS after-hours and weekend support for Cougar Courses. *Assumption: campus will continue to require after hours and weekend support.*

5b) Campus Communications & Training Expectations – Ever changing technology poses adoption and use challenges for faculty, staff, and students. The campus community is looking to IITS to provide regular training opportunities, extensive self-help tools, and more frequent communications on future technology initiatives that may impact their work. *Assumption: campus user community will need training and assistance to take full advantage of the technology solutions.*

5c) Growing Demand for Direct Support - A model has been used in a few units to provide dedicated IITS staffing in support of unique technology support needs. This has proven to be good for the various departments, reducing the amount of time they spend addressing technology issues. IITS anticipates greater campus needs for this type of focused service and support to other departments that will require increased staffing. *Assumption: campus units will request and will benefit from dedicated IT support.*

Assumption #6: Sustaining the Campus' Technology Infrastructure – As noted in *Assumptions #1 and #2*, IITS has deferred all major Data Center investments in FY 15/16 and 16/17. In FY 17/18, IITS was funded for and initiated a partial phone system replacement, as the existing campus phone switch (Mitel Pointspan) reached "end of life/end of support". While IITS looks to the future outlined in the Technology Strategic Plan, similar to the issue of an aging phone system, IITS is also looking to realign on premise services by utilizing both the *Cloud* and a resumption of investment in core infrastructure investments in the Data Center and across the campus. Key areas of focus will include on-campus storage, virtual server environment, and the development of a hybrid cloud environment flexible enough to meet future needs. The ongoing increase in use of technologies often means supporting a complex environment, some of which may be hosted (or shadowed) in the *Cloud*.

6a) Deferred Investments in Campus IT Infrastructure - For two fiscal years IITS has been unable to make any substantive investment in the Data Center. As the baseline campus IT infrastructure is critical to smooth campus operations, IITS will look forward to reinvesting in FY 18/19 and beyond to address the replacement of aging equipment. *Assumption: older technology equipment will fail, causing outages and potentially disrupting campus operations.*

6b) Increasing IT Costs - IITS is seeing increasing technology costs on almost all maintenance contracts for supported hardware and software products. Changing IT service models will also increase costs, as any Cloud/SaaS services will likely have increased costs and ongoing expenses that will move IITS from a one-time CAPX model to an OPX model. *Assumption: shift to cloud and SAAS will increase operating costs while reducing capital costs.*

6c) System & Regulatory Compliance - CSUSM is committed to taking strong measures to protect the security and privacy of campus information assets, promoting the adoption of affordable learning materials, and deploying technologies that are equally accessible to all. New policies from the CSU, as well as regulations from the state and federal governments, will require the campus to create new operational methods and purchase new technology solutions for compliance. *Assumption: increasing number of compliance requirements must be addressed by adequate staff.*

B. **Goals by Fiscal Year**
   1) **FY 2018/19 Goals**
      a. *List here specific goals for the Unit Assumptions enumerated above (e.g., identify which "assumption" the goal supports).*

   Develop Multi-Year Operational Project Plans for Technology Strategic Plan (TSP)
   (Assumptions: 1, 1a, 2, 3, 3d, 4a, 4b, 4c, 5, 5a, 5b, 5c, 6a, 6b, 6c) - This TSP has gathered hundreds of "Big 8" idea sheets and trend data. These will be used to develop operational project plans that align with identified strategic services and available resources. *Key initiatives:*

Publish Technology Strategic Plan, Develop Operational Project Plans in Support of Strategic Initiatives, Develop IITS Service Catalog, Operationalize Project Planning System

Backfill Position Funding Used for Past In-Range Progression Plans *(*Assumptions: 1a, 2, 2c, 3, 3a, 3b, 3c) - IITS implemented over $420,000 in IRPs over the past four years. Even so, we remain near the bottom of the CSU with respect to IT salary averages, and are not competitive in our region. As past IRP budget requests have not been funded, positions have been left vacant as a temporary funding source. This is no longer sustainable given current demands for support. IITS must move forward with planned recruitments and conduct a higher education market assessment to align IITS salaries at a competitive rate with the local market. *Key Initiatives: Return to a Full Staff Complement, Develop Critical Services Plan, Develop IRP plan*

Seek Long-Term Designated Funding for Technology Refresh Program (TRP) for Classroom & Lab Computers *(*Assumptions: 1a, 2, 2a, 2b, 2c) – At present, campus computer labs are not enrolled in a refresh funding model. We will work with campus budget groups and IMSC to identify and fund a long-term method for the TRP to provide for the scheduled replacement of classroom/lab computers for those labs where the computers were purchased 7 or more years ago. To get back on track to maintain a 4-year refresh model with labs, we must also replace 25% of the remaining systems. *Key Initiatives: "Year 4" Classroom Technology Upgrade Program, Identify Funding for Computer Labs, Replace 25% of Campus Lab Computers, Establish "Tech Bank" Funding to support faculty innovation and requests.*

Re-Investment in Core Information Technologies (Assumptions: 2, 2b, 2c, 3a, 3d, 5, 6, 6a, 6b, 6c) - IITS has deferred all major Data Center investments since FY 14/15 (with the exception of the phone system discussed elsewhere in this document). The campus uses a central file system model to support a range of uses from department shares to databases. The storage was originally purchased five years ago and must be either replaced or put a new maintenance contract in 17/18. Similarly, one of our virtual server "clusters" used to provide the campus hybrid cloud environment was purchased five years ago and should be replaced, as the risk of outage grows larger as the system ages. *Key Initiatives: On-campus Storage, Virtual Server Environment, Development of a Hybrid Cloud Environment*

Increase Training & Identify Funding Required for Staff Development (Assumptions: 1a, 2c, 3b, 3c, 3d, 4b, 5c, 6a, 6b) - CSUSM will ramp up efforts to move appropriate training and professional development opportunities for staff. This is necessary to train employees who are replacing the loss of expertise due to the exit of key employees. Many of these positions (Citrix Engineer, Sr. Network Analyst) require years of training. Additional training is needed to support evolving services in the cloud for both operational units and in support of faculty research. *Key Initiatives: Develop & Fund IITS Training Plan*

Utilize Technology to Improve Organizational Efficiency (Assumptions: 1, 2c, 4, 4a, 4b, 4c, 5) – The technology marketplace continues to offer new services and applications. These capabilities make campus departments more efficient and productive. IITS is called on to provide support for these new technology solutions and the increased demand must be met with increased staff resources. *Key Initiatives: Salesforce, OneCard, Campus App, GreyHeller (new to HCM $70k), Chat Services, Manage Engine, DocuSign/Adobe, Amazon Web Services/Microsoft Azure*

Continue Growth in Mobile Applications Use (Assumptions: 1, 3d, 4, 4a,4b, 4c, 5) - The Campus App adoption has reached a substantial portion of the student population and continues to grow with a doubling of use to over 200,000 starts in Fall 2017. The use of mobile devices as a primary interface for services is a growing priority as we anticipate that this will drive enhanced campus services and information. *Key Initiatives: Campus App, ModoLabs X Modules, GreyHeller-full implementation, Salesforce, OneCard*

Expand Support for Help Desk & Instructional/LMS Support (Assumptions: 1, 2c, 3, 3b, 3c, 3d, 5, 5a, 5b, 5c) - Feedback from faculty, staff and students indicates that there is a distinct need for additional technology support extending into evening hours while classes are in session. Other feedback address the need for more direct support for departments and individuals as they use new and evolving applications. *Key Initiatives: Extend Help Desk Support Hours, Preventative Classroom & Lab Checks, Provide More Self-Help Options, Enhance Outreach/Communications, Provide Workshops and Trainings for the Campus Community, Ally for Moodle, Faculty Professional Development, Makerspace*

2) **FY 2019/20 Goals**
   a. *List here specific goals for the Unit Assumptions enumerated above (e.g., identify which "assumption" the goal supports).*

   Implementation of Technology Strategic Plan (TSP) (Assumptions: 1, 1a, 2, 3, 3d, 4a, 4b, 4c, 5, 5a, 5b, 5c, 6a, 6b, 6c) - This TSP has gathered hundreds of "Big 8" idea sheets and trend data that will be used to develop operational project plans that align with identified strategic services and available resources. *Key initiatives*: *Implementation of Project Plans in Support of Strategic Initiatives*

   Re-Investment in Core Information Technologies (Assumptions: 2, 2b, 2c, 3a, 3b, 3d, 5, 6, 6a, 6b, 6c) – In FY 19/20, the hardware and licenses that support our CougarApps environment will need to be refreshed. This environment supports an increasing number of campus needs ranging from making academic software available for off campus use (the original purpose) to allowing employees to work from home (an increasing use).   Further, we must increase the

licensing for some of our key services (such as authentication) in order to address growth (these are often licensed for number of users). By FY 19/20, we anticipate that the proposed improved services for applicants and alumni will require an increase tier of licensing.

Workspace Improvements (Assumptions: 3, 3b, 3c, 5c) – IITS relinquished two offices to CAMP/PASO in 2017. IITS expects to regain lost space with the relocation of CAMP/PASO to the Extended Learning Building and expand the IITS office presence on the 2nd floor of Craven Hall in order to provide workspace for a full IITS staff contingent*. Key Initiatives: Regain Lost Office Space, Sufficient Office Space for Staffing Compliment, Relocate Dean's Office*

New Extended Learning Building Support (Assumptions: 1a, 2a, 2b, 2c, 3b, 5a, 5c, 6b) - The Extended Learning Building adds classrooms, offices, and centers that will increase the number of computers and network infrastructure. Additionally, the location will add another element of burden to support. The plan is for IITS to open a new Help Desk that will require staffing. *Key Initiatives: Classroom of the Future, Staff EL Help Desk, Additional Help Desk Staffing, two New Electric Carts, Replace Panel Van.*

Utilize Technology to Improve Organizational Efficiency (Assumptions: one, 2c, 4, 4a, 4b, 4c, 5) – Continuation of prior key initiatives and new projects from the TSP. Technology use for organizational efficiency is not a concept confined to IITS. The majority of large technology projects are done at the behest of and in support of departments across the campus. If there is a technology solution, there is at least some level of IT support required. Some of these involve major investments in IT resources (Salesforce, Amazon), but all expect to provide an overall benefit or reduction in cost to the campus, potentially shifting resource allocation across the campus. *Key Initiatives: Salesforce Phase 2, OneCard, Campus App, Amazon Web Services/Microsoft Azure*

Increased need for Direct Support (Assumptions: 5b,5c) As the move to cloud based systems increases, IITS takes on a number of compliance obligations such as risk analysis, contract elements, technology and security verification activities, and integration for authentication and data. Additionally, IITS staff will be expected to help manage vendor relationships and provide increased support in order to keep applications systems healthy. IITS will require increased staffing to provide focused services and support to departments that require this level of application support. *Key Initiatives: Support of a Hybrid Cloud Environment, Provide Workshops and Trainings for the Campus Community*

3) **FY 2020/21 Goals**
   a. *List here specific goals for the Unit Assumptions enumerated above (e.g., identify which "assumption" the goal supports).*

Implementation of Technology Strategic Plan (TSP) (Assumptions: 1, 1a, 2, 3, 3d, 4a, 4b, 4c, 5, 5a, 5b, 5c, 6a, 6b, 6c) - This TSP has gathered hundreds of "Big 8" idea sheets and trend data that will be used to develop operational project plans that align with identified strategic services and available resources. *Key initiatives: Implementation of Project Plans in Support of Strategic Initiatives*

Re-Investment in Core Information Technologies (Assumptions: 2, 2b, 2c, 3a, 3b, 3d, 5, 6, 6a, 6b, 6c) – The campus telephone systems (the PBX) is past its end of life. During 17/18 and 18/19, the campus invested in a partial system in order to extend the life of the current system. By 20/21, the campus must make a significant investment in the replacement system, presumably as part of a system wide purchase. This will include a hardware (or cloud-hosted) solution, handsets, training and the transition process. *Key initiatives: Replace campus telephone equipment*

Utilize Technology to Improve Organizational Efficiency (Assumptions: 1, 2c, 4, 4a, 4b, 4c, 5) – Continuation of prior key initiatives and new projects from the TSP. *Key Initiatives: Salesforce Phase 2, OneCard, Campus App, Amazon Web Services/Microsoft Azure*