



College of Marin

Technology Plan, 2021-2025

Fall 2021

December 2021

Dear Colleagues:

On behalf of the Marin Community College District, I am pleased to present the *College of Marin Technology Plan (2021-25)*. This plan will guide the implementation of technology in support of the College of Marin's mission, *Educational Master Plan (2019-25)* and *Strategic Plan (2022-25)*.

This *Technology Plan* demonstrates the District's commitment to providing a state-of-the art information technology environment that will sustain and enhance teaching and learning, support the College's mission, and increase the effectiveness of all of the College's operations and services. As we enter the post-pandemic era, our stakeholders have newer and perhaps higher expectations of technological deliveries, since our technology use now spans across multiple platforms and locations (i.e. on-campus, off-campus, on-line, and mobile).

To ensure the College's technology planning process is dynamic and responsive to technological changes, the plan will undergo periodic review.

I extend my sincere gratitude to the many dedicated individuals who contributed to the completion of this important plan and especially to the members of the Technology Planning Committee for their hard work and dedication.

Sincerely,



David Wain Coon, Ed.D.
Superintendent/President

College of Marin Technology Plan, 2021-2025
Approved by PRAC, May 18, 2021

1. Executive Summary

The goal of this plan is to outline the current technology requirements of the College of Marin and to offer possible solutions and outcomes. The rapid development of new technologies makes this an urgent issue for credit, non-credit, and Community Education students, faculty, staff and administrators. Even more significantly, the growing consciousness of issues of inclusion and equity has made the need for the College to think anew about the use and distribution of technology in throughout our college. The Technology Planning Committee, a sub-Committee of the Planning and Resource Allocation Committee (PRAC), has over the last year been collecting and processing various ideas from throughout the College Community. This has been made possible by the support and interaction of all stakeholders in this process, not least being that of our Director of Information Technology, Patrick Ekoue-Totou, the Instructional Technology Supervisor, and Technology Support Specialist Andy Haber.

The members of the Technology Planning Committee would like this plan to form the basis of open communication about all the needs of technology at the College. The Committee can be at the center of this process but as is made clear in this plan this process is one of continuing development which requires continued diverse input with shared responsibility of all stakeholders. The committee is clear that we must put equity at the heart of the process, something which is not necessarily easy to accomplish. There are several other priorities, too, obviously including constant references to student success, the needs of faculty, staff, and administrators, and the role of the College in the community. This plan is clearly situated in the vision and values of the College as these are major motivational factors for those of us who have been working on it.

We have organized this plan in a way that makes it an easy form of reference. Based upon the experience of previous technology committees we have categorized it into four areas of focus. These are:

- Instructional Technology
- User Systems, Support and Training
- Administrative Computing and Communications
- Technology Infrastructure

Within each area there are a number of initiatives, totaling 41, some which overlap with others. We hope that the matrix format makes the plan more easily understood as well as more accessible.

Technology Planning Committee members:

Paul Cheney (Co-Chair), Katherine Chuang, Luna Finlayson, Andy Haber, Carol Hildebrand, Matthew Howard, Matthew Kent, Khadija Nakhuda, David Patterson, Grace Mengqi Yuan (Co-Chair)

2. Introduction

Context. As we approach the centennial of our college in 2026, this 2020-2025 Technology Plan will be the last technology plan of our college's first century. Since the college's inception, almost hundred years ago, the mission of the college to provide outstanding education to an ever-diversifying student body has required an ever-expanding commitment to technology. A hundred years ago, who could have imagined the need for smart classrooms, a device borrowing program, wireless printing, or Canvas? Yet, what was true in the relatively low-tech days of 1926 is true in the 2020s (and surely will continue to be true in 2126): students learn best when they feel supported, valued, and heard; faculty teach best when they are able to deliver dynamic, engaging, and creative lessons; and staff operate best when they have the tools to working collaboratively, efficiently, and economically. Technology plays a vital role in all of these areas.

Diverse Input. This plan, developed with input from every constituent group of our college, will guide COM's technological decisions over the coming five years. Written collaboratively by the Technology Planning Committee, a subcommittee of PRAC, this guide tries to bring together diverse perspectives on our campuses' technological needs, including respected IT Department experts, faculty from across the disciplines, staff and administrators from a variety of departments, and, most importantly, students from every possible background. We interviewed stakeholders, analyzed survey data, and debated ideas. Finalized during a period of intense awareness about the role of technology in society, this plan focuses not only on technology but on technology as it intersects with COM users. Shelter-In-Place has emphasized the power of technology to connect; Black Lives Matter has brought to the fore the need to base policy reform – any policy reform, including policies related to technology – on the experience of the historically underserved; and the 2020 Election has made plain the need for deep listening, honest engagement, and forbearance not just in terms of politics, but in every aspect of our lives, including technology.

Equity. COVID-19 has underscored the significant role that technology plays in COM's work to close equity gaps. The pandemic has unearthed the best of our college – heroic collaboration to keep students learning – and the worst – students who cannot learn because they cannot access technology. For example, our non-credit ESL student enrollment is about half of what it was last year, and our credit ESL enrollment is also down. Although not all of this drop is due to technologically-related problems, there is ample evidence that our ESL students -- the very students at COM most likely to be on the wrong side of equity gaps due to racism, income, language skills, educational preparation, and immigration status -- are suffering due to technological barriers. Sometimes our technology is simply too complicated for ESL students to use. The good news: thanks to the excellent work by our IT and Student Activities Department, 243 laptops and 43 hotspots have been provided to our students, including some ESL students. All agree that more must be done to support the technology needs of ESL students and their faculty both in the short-term during Shelter-In-Place and over the coming years.

Shared responsibility. This example from the ESL Department is similar to examples in many other departments at COM, from Community Education, to Student Accessibility Services, to EOPS – they all involve students whose technological needs are beyond the mainstream. What does this plan say about these particular students and their specific needs? The answer is two-fold: first we acknowledge as a college that we can do better, and, second, that doing better is something we all claim together. This plan lists 41 technology initiatives from e-signature technology to an IT Help Desk, and every one of them depends on sharing responsibility. As each item on this plan is attempted, everyone at the college can pitch in and work collaboratively, sharing responsibility. As each item is accomplished, we can all ask ourselves, “What did I contribute? What more can *my* team do to assist with the next item?” If there is one thing that our college’s amazing response to COVID-19 has shown, it’s that our IT Department, Student Activities and Distance Education Department are responsive, generous, dedicated and faithful to our students. Without email, Canvas, and Zoom, device loaning, and training, COM cannot function. It’s equally true that without most students, faculty and staff using their own equipment and their own Internet service, learning would grind to a halt. Likewise, nothing in this technology plan will be accomplished without everyone taking responsibility.

Technology Priorities. Throughout this plan, you will find **Six College Technology Priorities**, based on priorities of the Educational Master Plan 2019-2025.

- **Student Access and Success:** Our technology decisions should primarily be guided by asking, “How will this impact our credit, non-credit, and Community Education students’ access to education? How will this help our students succeed?”
- **Equity:** Immensely proud of all of our students, we position historically marginalized students at the center of this technology plan and ask ourselves how they are affected by each of our technological initiatives. We seek out their voices when planning and evaluating and disaggregate data when conducting technology surveys.
- **Instructional Programs:** Nothing is more central to the success of our college than our ability to teach and learn, so this plan ensures that each classroom and each faculty member is technologically well-equipped.
- **Indian Valley Campus:** The ongoing renaissance of our Novato campus depends, in part, on technological excellence. Now, with so much transformation occurring, is the perfect time to continue enhancing Indian Valley Campus’ technological infrastructure.
- **Community Engagement and Responsiveness:** This plan calls for enhancing our technological partnerships throughout Marin County, especially for our historically underserved students.
- **College Systems:** Our college systems (facilities, campus safety, digital infrastructure, financial stability, planning, and community partnerships) continue to be powerfully advanced by technological innovations.

3. College Mission

College of Marin's commitment to educational excellence is rooted in providing equitable opportunities and fostering success for all members of our diverse community by offering:

- preparation for transfer to four-year colleges and universities
- associate degrees and certificates
- career technical education
- basic skills improvement
- English as a second language
- lifelong learning
- community and cultural enrichment

College of Marin responds to community needs by offering student-centered programs and services in a supportive, innovative learning environment that promotes social and environmental responsibility.

4. College Vision and Values

College Vision

College of Marin will be a premier educational and cultural center that provides programs of the highest caliber to meet the needs of an increasingly interconnected global society. Our vision will be guided by our values.

Our Values

Student and Community Centered Education

We promote student success by providing programs and services that are learner centered and reflect the changing needs of our students and surrounding community.

Academic Excellence and Innovation

We are dedicated to academic excellence and encourage innovation. We foster intellectual inquiry by encouraging critical thinking, information literacy and technical competence. We continually evaluate the effectiveness of our programs.

Collaboration and Open Communication

We cultivate a culture of mutual respect, open communication, collaborative working relationships and participation in decision making among students, faculty, staff and the communities we serve.

Diversity

We cherish a learning environment that celebrates diverse backgrounds and recognizes the knowledge and experiences among its students, faculty and staff. We provide open access and strive to remove barriers to student success.

Sustainability

We will apply environmentally sustainable and green principles in our college community to ensure the future of our planet.

Accountability

We will be accountable for our decisions and actions on behalf of the students, college and community. Our decisions will be academically, fiscally and environmentally responsible.

5. Technology Vision

Working collaboratively, College of Marin will create and support technological solutions to empower our faculty to teach, our students to learn, our staff to administer, and our community to flourish.

6. Strategic Technology Planning History and Process

Composed of representatives from the faculty, students, staff, and administrators from across our college, the current Technology Planning Committee (TPC) was reconstituted in August 2018 after the previous TPC disbanded, having submitted a Technology Plan that PRAC did not accept. We were given the charge by PRAC to develop a Technology Plan (TP). We spent 2018-2019 scanning the environment, looking at what previous TPCs had accomplished, and deciding how to proceed. In 2019 we proposed to PRAC co-chairs a Technology Plan in terms of its format, length, process for completion, and timeline. We created four subcommittees to divide up the work of making recommendations for the plan and discussed among ourselves the process for reaching agreement about the plan. Throughout 2020, we reviewed the [IT Operational Guidelines](#), interviewed students, staff, faculty and administrators to garner their input. The COVID-19 crisis interrupted our work, but it also uncovered crucial equity issues related to technology that we have incorporated into this plan. We considered recommendations within sub-committees, responded to the recommendations of other sub-committees' proposed recommendations, and finalized our tentative plan in October 2020. Truly a group effort, this document expresses the needs and thinking of all its committee members. We then presented our plan to PRAC in early November, asking for feedback, which we used to revise our plan and to create this final version, delivered in Spring 2021. PRAC approved this plan in May 2021. In 2021, the TPC will pivot towards the implementation of the plan, working collaboratively with the IT Department and other stakeholders and providing user input from students, faculty, staff and administrators.

7. Technology Initiatives: Summary

These 41 items will guide the technology work of the college over the coming five years.

A. Instructional Technology

1. Explore Simple Instructional Technology Options
2. Emergency Remote Teaching Plan and Solutions
3. Pedagogical Technology Training
4. Increased IT Communication and Outreach
5. Access to Electrical Outlets and Charging Stations
6. Website Communication
7. Information Monitors in All Building Lobbies/Common Areas
8. Improve Wireless Printing
9. Continue to Upgrade Classroom Technology to Current Standards
10. Classroom Equipment Documentation

B. User Systems, Support, and Training

1. IT Help Desk
2. Increased Mobile-friendly Services
3. College-wide student accessibility survey plan
4. Explore alternatives to Current Wifi Set-up/Address user frustration with Wifi Set-Up
5. Continued Canvas and Zoom Training and Support for Faculty
6. Enhance Process for Adopting Software at COM

C. Administrative Computing and Communications

1. Enhance Device Share Program
2. Banner SSB upgrades to Banner 9 self-service
3. Data Analytics
4. Network Security/Information Security
5. Modernizing Administrative Functions by Optimizing Existing Technological Tools
6. Website and Portal Accessibility
7. Online Communication Function
8. Reduce Robocalls on College Phone Network

D. Technology Infrastructure

1. CENIC CCC-2449 between Sites Circuit Upgrade to 10GB
2. CENIC CCC-1647 & CCC-1648 Uplinks Circuit Upgrade to 10GB
3. Firewall Upgrade
4. Fiber Optics Expansion and Replacement
5. CAT6 Data Wiring Projects
6. Wireless Coverage Expansion and Ongoing Improvement
7. Security Camera System Deployment
8. SecureALL Routing Layer 3 Conversion and Communication
9. Cold Backup for Data
10. Telephone Hardware Replacement / Continuous Telephone System Upgrade
11. Windows Servers Upgrade to 2016 Version
12. Elevator Calls to be Directed to PSAP / E911 Database Update with AT&T and PTX
13. Area of Refuge Phone Replacement / Public Phone Replacement
14. Class Software Identification, Licensing, Standardization and Reporting of Class Location
15. More Computer Labs and/or Better Utilization of Current Labs
16. Collaborate with Community Institutions to Address Digital Divide Issues

17. Employ Sustainable Practices

Please Note: Words marked below with an asterisk are defined in a glossary at the end of the document.

8. Technology Initiatives: 2020 – 2025

A. Instructional Technology

	Initiative	Description	Importance	What Has Been Done So Far	Potential Obstacles/Notes
1	Explore Simple Instructional Technology Options	Form a subcommittee, initiate ongoing dialog with faculty, staff, and administrators from various disciplines, including community education, ESL, SAS, ECE, EOPS and other equity impacted groups, to search for, purchase, and implement appropriate technology (applications and hardware) for enhancing and simplifying teaching and learning.	Technology is sometimes too complicated for some of our college community. As an equity-minded college, we need to continuously address the needs of particular demographic groups within our college.	Due to COVID-19, awareness of the need for simple technological solutions is becoming apparent.	
2	Emergency Remote Teaching Plan and Solutions	Develop list of available equipment for check-out during remote instruction. Quick and easy request form pertaining to equipment for remote instruction.	The college should be prepared to quickly pivot to remote learning in the case of an emergency. In some cases, training designed for DE is not readily available or helpful for remote teaching.		

		Guide to digital versions of classroom activities and assignments.			
3	Pedagogical Technology Training	Explore innovative delivery methods of training for faculty in use of digital tools and solutions. This training would include varied uses of these tools in and out of the classroom for a variety of disciplines.	Faculty and staff need pedagogically relevant training in use of available tools.	IT has done Brown Bag Lunches, but attendance has been reportedly low.	
4	Faculty-Led Instruction on Digital Tools	Flex time orientations demonstrating digital tools for teaching in and out of physical classroom.	Communication with faculty about available programs and services will aid with instruction.		
5	Access to Electrical Outlets and Charging Stations	Electrical outlets with USB plugs should be installed in classrooms and common spaces. Charging stations should also be installed.	College users rely on personal devices for study and work. Classrooms and common areas need access to outlets near desks and tables and places to charge their devices.	Some newer buildings have floor outlets installed below student desks.	Note: Need to make sure this is included in new LRC building.
6	Website Communication	Active “master calendar.” Better search function within college website.	Searching and navigating the website should be user-friendly; master calendar should be kept current and prominently displayed.	Ongoing effort to improve website is admirable.	
7	Information Monitors in All Building Lobbies and Common Areas	Display current campus information, emergency alerts, and upcoming events; updated daily.	Current communication is overly dependent on email. Often people do not see the email until just prior to or after an event. Displays around campus would be clearly visible to people with up-to-date events/ emergencies.	Some areas already have information monitors, such as the counseling area.	

8	Improve Wireless Printing	Print Control System for wireless, cloud-based access at printing stations at convenient locations throughout campus.	Improve printing efficiency and reliability on campus for users.	IT Department has selected Papercut* printing system that allows for wireless printing.	Include faculty and staff input on selection of Papercut.
9	Continue to Upgrade Classroom Technology to Current Standards	A replacement schedule should be enhanced to include projectors, along with computers and control systems that need to be replaced due to age, functionality, and where current technology can no longer be supported.	Need to improve brightness and image resolution to enhance teaching experience. Not all current equipment is high resolution. Brighter projectors will make viewing easier for students to see details without dimming of lights. Reliability issues can arise with older equipment leading to classroom interruptions.	Equipment had been upgraded in some lecture rooms.	
10	Classroom Equipment Documentation	Provide classrooms with easy-to-locate and easy-to-read instructions on proper use and features of equipment e.g. a) quick fix trouble shooting; b) available features, such as video mute and displaying personal device.	To make end user more self-reliant; reduce downtime, and to enhance the teaching experience.	There are instructions in most rooms.	

B. User Systems, Support, and Training

	Initiative	Description	Importance	What Has Been Done So Far	Potential Obstacles/Notes
1.	In-Person IT Help Desk with Multiple Modalities of Service	A highly visible, hands-on, can-do help desk located in or near the libraries with consistent day and evening hours for credit, non-credit, and Community Education students, faculty, and staff. Troubleshoots Wi-Fi, printing, copying, computers, Canvas, MyCOM, etc. Should include face-to-face, online chat, telephone, and Zoom modalities. Possibly staffed by IT with assistance from student workers. Special hours and support	COM constituents have called for such a Help Desk, including SAS, DE, Library, EOPS, ASCOM, ESL, Community Education, and individual students. An IT Help Desk with a variety of modalities of service will help to close equity gaps because historically underserved populations often need this assistance the most. For example, face-to-face and Zoom modalities are necessary when students lack vocabulary for explaining issues.	The IT Department has a successful online help desk for staff, faculty, and students. It has expanded during Shelter-In-Place to include Community Ed, Online Writing Center, Planning, Research and Institutional Effectiveness, Enrollment Services, and Student Activities. In addition, it has tried to create an in-person IT Help Desk, but the remodeling of the STEM Center took away a possible location. IT has had a student worker on a temporary Help Desk in the Library at the beginning of the	Lack of funding and staffing. Contractual limitations on use of student workers. Contractual limitations on working after 5:00 PM. Inter-related nature of technological issues (Examples: COM's ability to help with home Internet provider issues is limited and personal devices)

		for Spanish speakers and other language groups, ESL students, and Community Education students. Referrals for more help to IT staff, Enrollment, SAS, Library, Distance Education, etc.		semester for two semesters in the past. IT has worked with Library to create a few “Genius Bar” sessions at the beginnings of semesters	
2.	Increased Mobile-Friendly Services	All or most of our services need to be mobile-device friendly	A significant percentage of our students learn through their phones. 80% of credit and non-credit students access Canvas using a smart phone. Of these, nearly 40% use their phones to complete activities such as assignments and quizzes, and 60% read their class materials on their phone (Survey, Spring 2018, Distance Education Committee).	Canvas and Office are already mobile-friendly	Our website requires an update of the code to perform more mobile-friendly appearances
3.	Collegewide Off-Campus Student	Create a plan to survey all of our students, including students in credit,	Equity issue. Over 50% of credit and non-credit students use the college’s computers, which leads us	Surveys have been conducted in the past.	

	Accessibility Survey Plan	non-credit and Community Education courses, to learn how they access information off campus, including types of devices, wi-fi, printing. Disaggregate data to identify equity gaps	to believe that their access to wi-fi, laptops, printing, desktop computers at home is in some cases limited and that mobile devices are the primary access for many students (Survey, Spring 2018, Distance Education Committee).		
4.	Explore Alternatives to Current Wifi Set-Up and/or Address User Frustration with Current Wifi Set-Up	Wifi is often easy to set up, but it is also difficult for many to set up and difficult to renew	The Library, Distance Education, SAS, and ASCOM have identified wifi set-up as a barrier to accessing wi-fi at COM. This is an equity issue because it disproportionately impacts historically underserved populations such as ESL, low-income, students with disabilities and other users affected by the digital divide. Some students indicate that they do not use COM wifi because they don't know how to set it up or renew it. Even with help from COM employees they	Librarians, DE, and SAS have served as tech support for wifi set-up, but this model is not sustainable. "Genius Bar" and student worker support from IT during beginning of semester. Ongoing explanations and troubleshooting provided by IT Department.	Legal issues: the college is required to provide robust cybersecurity. There are legal and financial considerations. The college is required to provide robust cyber security. Switching to another set-up product would cost a great deal. CCC Chancellor's office has not adopted a statewide standard for 2-factor

			have difficulties accessing it.		authentication, making things difficult for colleges
5.	Continued Canvas and Zoom Training and Support for Faculty	Continue to offer faculty training and support for using Canvas and Zoom	During Spring 2020, 39% of credit and non-credit students experienced a transition from face-to-face instruction to online instruction that went poorly or somewhat poorly. Students reported that instructor unfamiliarity with technology was the most prevalent major challenge. (COM Student Remote Instruction Survey Results Spring 2020) Over half of credit and non-credit faculty identified the need for more training (COM Faculty Remote Instruction Survey Results Spring 2020)	Distance Education has worked tirelessly to provide both intensive training to every faculty member during Summer, 2020, as well as supplemental workshops, such as “Boom Your Zoom,” “VoiceThread,” and “FlipGrid.”	Barrier: Faculty adoption
6.	Enhance Process for Adopting Software at COM	A process for adopting technology at COM needs a component for vetting software in terms of	COM’s improved focus on accessibility and student privacy requires a more formalized vetting process for acquiring software	This process has been in place in terms of accessibility since 2007. It is currently unenforced. Currently, IT Department asks faculty to check	Faculty are unfamiliar with requirements

		accessibility and student privacy		software for compliance with CCC guidelines.	
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C. Administrative Computing and Communications

	Initiative	Description	Importance	What Has Been Done So Far	Potential Obstacles/Notes
1.	Enhance Device Borrowing Program	Expand borrowing program and describe the procedures to request technological devices for students, faculty, and staff.	COM community members need access to devices and they need to understand what devices are available to borrow and how the program works.	There is already a program in place. Students can self-request through COM Care, and staff and faculty can request through managers.	
2.	Banner* SSB Ppgrades to Banner 9 Self-Service	Functionalities in Banner SSB will be upgraded to Banner 9 Self Service, which will impact employee self-service, faculty self-service, student registration, and	Information Technology (IT) Department priority, referenced in the IT Operational Guidelines, 2020 .	Ongoing Key users have been informed about the upgrades. Training yet to come.	

		fiscal services. Follow-up Training is also a priority for this initiative. Set up a reaction group to react to the nuances related to the implementation of Banner 9 for fall registration.			
3.	Data Analytics	Develop strategic plan to identify and incorporate critical business applications and data visualization tools into the current business operation for informed decision making.	Identified in survey data as important and it would streamline processes at College. Called out in the Current State – Future State Analysis in the IT Operational Guidelines, 2020 . The Internal Business Intelligence Services, including the key components, need strategic improvements.	The Institutional Data Team (IDT) put this item on the Fall 2020 agenda.	Budget constraint – funding and staffing to support the development of data analytics function.
4.	Network Security and Information Security	Support IT's cybersecurity initiative and recommend a campus-wide security audit to provide IT department with	Identified in survey data as significant. Additionally, research is showing that cyber-threats are becoming more sophisticated and frequent, necessitating a stronger response and security. Identified as a	This is ongoing and long-term. College has adopted KnowB4*, user web training module and Tenable* Network Scanning.	Some issues are happening at a state-level, e.g. fraudulent students accounts are related to CCCApply, which is outside of District's control.

		information to develop strategies to prevent threat and improve on monitoring and detection.	threat in the IT Operational Guidelines.	Large-scale fraudulent student applications have been identified by Student Services (SS) Department. IT and SS have developed a few ways to screen out the fake accounts.	
5.	Modernizing and Streamlining Administrative and Communication Functions by Optimizing Existing Technological Tools	<p>Administrative: implement software to facilitate e-signature routing to all departments, electronic timecards, etc.</p> <p>Communication: online Catalog, institutional-level survey tool, e.g. Qualtrics, for conducting surveys and course evaluations, etc.</p> <p>Establish procedures and guidelines for</p>	<p>Identified as areas of opportunities from various department, committee, or user-group meetings.</p> <p>Implementing more timesaving measures such as electronic timecards and software to facilitate e-signatures across campus would allow for more time focused on essential job functions.</p>	<p>Leadership chose Laserfische* and adoption underway</p> <p>IT Department is actively implementing electronic document procedures and trainings</p>	The eLumen* online Catalog 1st edition arrived on Campus in August 2020. Further build-out is underway. Survey management was added to IDT's Fall 2020 agenda.

		administering collegewide survey.			
6.	Website and Portal Accessibility	Improving the usability of COM website, portal, and develop a mobile app for COM Portal. Website, including all subpages, needs to be mobile-friendly and accessible.	Repeated throughout the multiple surveys conducted. Increase the viewing and navigating abilities of webpages for smart phones.	COM Portal App is on IT's agenda; delivery: 2021.	
7.	Online Communication Function	Continue expanding Microsoft (MS) Teams* to all departments.	Staff group instant messaging system; sharing projects in virtual offices. MS Teams will enhance departmental communication, but it does not replace Zoom.	MS Teams has been installed in several offices and is available to everyone who want to adopt it. IT actively aiding in deployment and trainings.	
8.	Continue to Reduce Robocalls on College Phone Network	Ongoing research and tactics to reduce robocalls.	Improves work efficiency	This project is ongoing.	

D. Technology Infrastructure

	Initiative	Description	Importance	What Has Been Done So Far	Potential Obstacles/Notes
1.	CENIC* CCC-2449 between Sites Circuit Upgrade to 10GB	The existing circuit between campuses is 1 GB; currently we frequently max out the pipe bandwidth with large data file moves	The pipe being full creates a host of problems included lost VoIP calls, slow access to online resources, and reduced internet speeds (intercampus).	Contact with CENIC regarding the circuit. Permits pending; expected installation will be in December 2020.	
2.	CENIC CCC-1647 & CCC-1648 Uplinks Circuit Upgrade to 10GB	This will upgrade our circuit from 1 GB to 10 GB to the outside world creating better on and off campus online service experience.	Faster internet speeds and access to offsite services such as Office365	CENIC is working with us to help purchase the required new routers with grant money.	As of fall, 2020, funding is frozen at the Chancellor's office to fund.
3.	Firewall* Upgrade	The 10 GB service we are upgrading to will require a	Required to accept 10 Gig internet service, current	CENIC is working with us to help purchase the	As of fall, 2020, funding is frozen at

		firewall upgrade. There is a special grant to help with the upgrade cost	router only accepts 1 Gig	required new routers with grant money.	the Chancellor's office to fund.
4.	Fiber Optics* Expansion and Replacement	Many of our existing building-to-building and intra-building connections are made with fiber optics that have aged and cannot carry the extra bandwidth newer applications require	The speeds of the computers' connections in buildings with old fiber is limited. Also, as fiber ages, its ability to carry excess bandwidth is reduced	Plan submitted and approved; 50% complete by November 2020	
5.	CAT6* Data Wiring Projects	There are several changes and moves that have not coincided with desired network wiring	Though wireless is convenient, it is not dependable like a wired connection. We maintain wired connections to ensure classroom and staff connections do not falter.	Plan submitted and approved, 50% complete by November 2020	
6.	Wireless Coverage Expansion and Ongoing Improvement	Expand and improve the wireless coverage to include missing	This is an equity issue because it disproportionately impacts historically	Plan submitted and approved, 50% complete by November 2020	Explore potential of offering wifi service in parking lots during PG&E Public

		zones and the parking lots	underserved populations such as ESL, low-income, students with disabilities and other users affected by the digital divide. Students, Staff, and Faculty need to be able to access wireless from any location on both campuses	Currently, WIFI is available in KTD Parking Lots 1 and 6. IVC parking lots P1, P2, P3, P4 complete in December 2020 This initiative is highly integrated with the wiring project above.	Safety Power Shutoffs.
7.	Security Camera System Deployment	The security cameras around the college are being standardized to a common model and to a centralized system for collection. Most cameras will be deployed in parking lots in accordance with Collective Bargaining Agreement	Request from the Campus police to help identify perpetrators on both campuses.	Installation 20% complete as of November 2020.	Note: In 2017, the Academic Senate and the United Professors of Marin (UPM) voiced privacy concerns about this project. A Memo of Understanding was negotiated was produced to provide limitations on camera placement, and on access and use of surveillance data Collective Bargaining

					Agreement 2017 - 2019 (See 17.1-8, pp. 120-124)
8.	SecureALL* Routing Layer 3 Conversion and Communication	Due to a network change between KTD and IVC the secure-all system will need to be redeployed on a campus per campus configuration.	The upgrade of the circuit between the colleges necessitates splitting the network from flat to layer 3	Project complete from a network standpoint, individual routers may need additional programming on an ad hoc basis. SecureALL IT and M&O teams have been made aware and are in communication.	
9.	Cold Backup* for Data	Due to recent security advisories, we are moving to complete an offline cold backup	Data security is critical and legal to our institution. Cold backups and or offsite backups allow an extra level of security in case of a meltdown in the server room or ransomware attack.	Tapes ordered and received, setting up the rotation.	
10.	Telephone Hardware Replacement / Continuous Telephone System Upgrade	There is a project in place to upgrade some of the phone	The new VoIP* phones add capability requested	Project is ongoing with over 100 phones replaced.	

		hardware selectively, the existing telephone system is moving from physical to virtual	by the userbase, and old phones are starting to reach the end of their lifespans.		
11.	Windows Servers Upgrade to 2016 Version	The Window server environment is migrating to the most current version	Server security is critical to website hosting, internal information security, etc.	Servers that need upgrading are identified through a product called Tenable	
12.	Elevator Calls to be Directed to PSAP* / E911* Database Update with AT&T and PBX*	Working with M&O to get all the POTS* lines for elevators captured and tested working with M&O. E911 system work ongoing	When stuck in an elevator, you need to be able to communicate to get help.	Complete; ongoing maintenance	
13.	Area of Refuge Phone Replacement / Public Phone Replacement	Area of Refuge phones are being updated to VoIP, and the Public phones are being replaced with VoIP, both to save money and convenience.	Area of Refuge phones provide a method of contacting police in an urgent situation. The district can provide more Area of Refuge phones over VoIP than regular phones due	Plan submitted and approved.	

			to POTD line cost and maintenance.		
14.	Software Identification, Licensing, Standardization, and Classroom Location	While IT allocates software and does software licensing renewals, there is a need in OIM to develop a mechanism to centralize the information on which lab or classroom software is installed. IT needs information about software being taught two weeks prior to the start of the semester.	Students need to know what lab they can work on specific software in, and IT needs to be able to load and unload software on computers in a timely fashion with advanced warning	Need to start communication with OIM and ask faculty to submit software requests when submitting classes. OIM needs to communicate where the classes will be taught so software can be advertised to students. In addition to IT inventories of software, the Library has created this spreadsheet, which is updated as needed: <u>Software on College of Marin Library Computers</u>	

15.	More Computer Labs and/or Better Utilization of Current Labs	<p>Monitor utilization of computer labs; add more labs as needed; improve communication of current labs' hours, locations, and capabilities.</p> <p>Campus has seen increased needs from students to access computers on campus, where they can access certain software and do TBA lab hours.</p> <p>Communication on computer lab availability: install Room Calendar outside the computer labs to reflect real-time open lab hours for students to drop in. Also, post this real-</p>	<p>Student access to computers is essential for student success. A request from the surveys asked for more computer labs; temporary Library has significantly fewer student computers</p>	<p>There are numerous computer labs available students; In three years, new LRC will increase access to computer space</p>	
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		time information online. Expectations and lab using rules are to be developed.			
1 6 .	Collaborate with Community Institutions to Address Digital Divide Issues	Work with Marin County organizations to address Digital Divide issues on such projects as “Wifi in the Canal.” and wifi in Marin City. Consider using COM Foundation money for funding Canal Digital Equity Access Fund .	Equity Issue. Many historically underserved COM students live in areas with poor wifi service. The Canal Alliance has advocated for improved wifi service for 15 years.	We have engaged with the Canal project and expressed interest in communicating the project to the student populations	Staffing and budget limitations restrict the college’s ability to engage in community collaboration.
1 7 .	Employ Sustainable Practices	Continue to improve our commitment to employing sustainability principles in technology-related decisions, especially in terms of waste, recycling, and reuse.	State laws require careful disposal of e-waste. COM’s Value Seven encourages sustainability across the college	The College is fulfilling requirements of state law for the disposal of e-waste.	

Glossary.

Banner: [Banner](#) is the “enterprise software for higher education” that we use at COM.

CAT6 Data Wiring: [Category 6 cable \(Cat 6\)](#), is a “standardized twisted pair cable for Ethernet and other network physical layers.”

CENIC: [Corporation for Education Network Initiatives in California](#) is a “nonprofit corporation formed in 1997 to provide high-performance, high-bandwidth networking services to California universities and research institutions.”

Cold Backup: “[A cold backup](#), also called an offline backup, is a database backup during which the database is offline and not accessible to update. This is the safest way to back up because it avoids the risk of copying data that may be in the process of being updated.”

E911: [Enhanced 911](#) is “a service that automatically displays the telephone number and physical location of the 911 caller on the emergency operator's screen.”

eLumen: [eLumen](#) offers “higher education curriculum and assessment management system that provides insight into each student's engagement and progress.”

Fiber Optics: “[Fiber-optic communication](#) is a method of transmitting information from one place to another by sending pulses of infrared light through an optical fiber.”

Firewall: “A [firewall](#) is a network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules.”

KnowB4: [KnowB4](#) offers “Security Awareness Training to help you manage the IT security problems of social engineering, spear phishing and ransomware attacks.”

Laserfische: [Laserfische](#) is a document management system

Microsoft Teams: [Microsoft Teams](#) integrates workspace chat, videoconferencing, file storage, and applications

Papercut: [PaperCut](#) is a form of print management software, the software used to send print jobs from a public computer to a printer.

POTS: [Plain Old Telephone Service \(POTS\)](#) refers to “voice-grade telephone service employing analog signal transmission over copper loops.”

PSAP: [Public Safety Answering Point](#) or “PSAP” means “an answering location for 911 calls originating in a given area.”

PBX: A [Private Branch Exchange](#) “is a VoIP telephone system for private enterprises.”

SecureALL: [SecureAll](#) provides physical security with key-free door handles. Its “real-time communication enables campus wide lock-down in seconds. The system also empowers individuals to lock down a single room, which triggers an alert to the safety team and first responders.”

Tenable: [Tenable](#) offers vulnerability scanning software.

VoIP: [Voice over Internet Protocol \(VoIP\)](#) "is a method for the delivery of voice communications over the Internet.