

**Riverside Community College District
Technology Plan
2020-2025**

**District Strategic Planning Council
Approval - August 2020**

Spring 2022 Update

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Background

RCCD Technology Plan was developed in the fall of 2019 as part of the ongoing strategic planning process of the Riverside Community College District.

The intent of this plan is to:

- Support the District Strategic Plan
- Integrate with existing College Technology Plans
- Address Accreditation Standards (specifically IIIC)
- Provide a roadmap for technology development at the District level

The development of the RCCD Technology Plan involved active participation of the Information Technology Strategy Council (ITSC), Technology Resources Advisory Group (TRAG) at Moreno Valley College and the Technology Advisory Groups (TAGs) from Norco College and Riverside City College. The initial draft was developed by ITSC and aligned with the three college technology plans. The first draft was reviewed by the Technology Resources Advisory Group and Technology Advisory Group representatives in ITSC as well as the Information Technology Advisory Groups at each college. Feedback was included in the revised draft prior to approval from ITSC and submission to the three college Technology Advisory Groups for approval from their college strategic planning processes. ITSC presented the approved draft District Strategic Technology Plan to the District Strategic Planning Council for approval and recommendation to the Board of Trustees.

It was agreed by the ITSC that there would be a distinction and separation between the District Technology Plan and a District Office Technology Plan (DOTP). The RCCD Technology Plan would include areas such as:

- Standards/Procedures
- Tools/Processes
- Training/Support
- Business Continuity
- Refresh Plan/Funding Sources
- Ongoing Maintenance of the Plan

SWOT Analysis

Strengths

- Established IT shared governance framework with committees such as the Information Technology Strategy Council (ITSC)
- A dedicated and skilled staff committed to providing outstanding service and support to the District's students, faculty and staff
- Redundant network and Internet connectivity throughout the District
- Availability of collaboration and communication platforms, such as Office 365, for students, faculty and staff
- Broad awareness from executive leadership that IT plays a critical role in the success of the District

Weaknesses

- Limited IT marketing across a large, complex, institution, contributes to slow adoption of new technology
- Lack of well-structured training programs for the technology services offered by the District
- Poor alignment of staff size with District growth and evolving business processes.
- Recruitment and retention are hindered by outdated classification and compensation practices
- Inadequate tools for analytical and executive reporting
- Ability to support the exponential growth of wireless devices across the District
- Poorly defined facility responsibilities between the District and Colleges
- Data Center limitations and deficiencies jeopardize availability and reliability of core computing infrastructure
- IT budget model based on capital expense limits the ability to take advantage of subscription-based cloud services
- Poorly documented vetting and purchasing procedures for technology adoptions, facilities adds and changes; resulting in subpar infrastructure planning and budget forecasting.

Opportunities

- Availability of advanced data analytics to improve student outcomes
- New technology platforms that allow for the delivery of instruction using the "anywhere, anytime" model.
- A digitally native student body expecting an educational experience utilizing modern technology
- Growing consumerization of technology services can be used to reduce institutional costs.

Threats

- Fluctuation of California's fiscal environment
- Disruption of service cause by natural disasters
- Increasing regularity of cyber-attacks and related malware
- New regulatory mandates creating additional risks and requiring complex controls necessary for compliance

Introduction

Overview

The RCCD Technology Plan represents a strategic view of the District's technology needs. It provides a long-range view that anticipates the emerging technology needs of the Colleges and District entities and requires an understanding and accommodation for federal, state and local requirements. The RCCD Technology Plan anticipates and provides for the technology needs necessary to enable other planning documents at the District and College level to succeed and ensures a continuous two-way alliance with college technology requirements to support instruction and student-focused services. The plan also forecasts funding requirements necessary to accomplish the goals and objectives of the Plan.

Purpose

The purpose of RCCD's Technology Plan is to encourage and enable all District and College constituencies to participate in the assessment of technology needs and the development of the vision, direction and prioritization of solutions to address those needs. It ensures ongoing focus and two-way alignment with the Technology Plans of the Colleges and the District Strategic Plan.

The RCCD Technology Plan enables all District entities to utilize data in decision making processes through the meaningful integration of disparate information systems and training; provide the technology necessary to enable College and District entities to respond to federal, state and local accreditation, licensing and reporting requirements; as well as maintain technological currency through the ongoing review of effective practices, emerging technologies and the provision of training to technical staff and end-users.

The RCCD Technology Plan also encourages regular review of business practices, technologies, and strategies to find new and innovative ways to enhance operational efficiencies and maximize value in procuring new technologies and ensuring that a Total Cost of Ownership (TCO) model is followed.

Process

The RCCD Technology Plan is a living document and will be reviewed and updated by ITSC on an annual basis so planning can reflect the current situation as well as allowing for the District to be prepared for future challenges.

Through the planning and review process, the District collaborates with the colleges via the ITSC and the college Technology Advisory Groups to ensure input in assessing the use of and needs related to technology at the colleges and district wide.

Principles

ITSC strives to provide appropriate support by following these principles:

- Ensure and facilitate student learning and success
- Facilitate faculty and staff professional development and increase effectiveness
- Provide seamless integration between administrative applications that enable real-time exchange of data
- Provide a stable infrastructure and ready access to information
- Ensure technologies are responsive, inclusive and relevant to the communities with which we serve and collaborate
- Strive for excellence in the services we provide and the technologies we deploy and maintain
- Encourage the pursuit and adoption of innovative practices and technologies that enhance services to our stakeholders
- Provide value, effective communication and excellent service to the Colleges and District entities

Planning

The ITSC believes there are key features and characteristics of this planning document that will increase its likelihood for success and make it more meaningful to stakeholders. These include:

- Inviting and encouraging input from all stakeholders and encouraging representation from all areas of the District, colleges and communities we serve
- Making the plan readily available to all stakeholders
- Accommodating changes in the needs of the District, Colleges and the communities we serve as reflected by changes in other District and college plans, Board initiatives, accreditation recommendations, external requirements and technology in general
- Maintaining a five-year focus and including collectively defined purpose, process, guiding principles, goals, strategies and objectives
- Establishing objectives that are quantifiable and realistic with a direct link to financial requirements
- Identifying our strengths, weaknesses, opportunities, and threats
- Regularly reviewing progress toward identified goals and objectives as part of a cyclical review process
- Reassessing the entire planning process every 5 years

Participants

Information Technology Strategy Council

Charge: The Information Technology Strategy Council will provide a collaborative forum to advise and inform the Chancellor's Executive Cabinet and the District Strategic Planning Committee in setting priorities and making strategic decisions involving the provision of Information Technology and technology to advance the institutional goals of the Riverside Community College District and its three colleges.

Membership:

AVC, Information Technology and Learning Services (District) – Christopher Blackmore

VP, Business Services (MVC) – Majd Askar

VP, Business Services (NC) – Michael Collins

VP, Business Services (RCC) – Chip West

Technology Advisory Group Representative (MVC) – Julio Cuz

Technology Advisory Group Representative (MVC) – Lisa Bonilla

Technology Advisory Group Representative (NC) – Michael Angeles

Technology Advisory Group Representative (NC) – Ricardo Aguilera

Technology Advisory Group Representative (RCC) – Patrick Scullin

Technology Advisory Group Representative (RCC) – Bill Manges

Student Representative (MVC)

Student Representative (NC)

Student Representative (RCC)

District Technology Goals

The following technology goals have been defined to support and fulfill the District's eight primary technology goals. These strategies are further detailed by means of specific measurable objectives, activities and tasks in Appendix 1.

1. Support instruction and learning through technology
 - 1.1 **Applications** - provide and maintain user applications that support instruction and learning
 - 1.2 **Reporting Tools** - employ and maintain reporting tools that support the effective use of applications, provide analytical reporting for planning purposes and fulfill external reporting requirements
 - 1.3 **Identity and Access Management** - enable the creation, maintenance, and use of an individualized digital identity for students, faculty, and staff
2. Support communications, collaboration and improvement
 - 2.1 **Communication** – provide access to multiple supportive mediums for communication to students, faculty and staff
 - 2.2 **Collaboration** – provide a technology solution that supports the collaboration of students, faculty, and staff throughout the District
 - 2.3 **Improvement** – encourage innovation and implementation of best practices that enhance District and college strategies
3. Develop and maintain sustainable funding strategies for technology initiatives
 - 3.1 **Total Cost of Ownership (TCO) Model for Technology** – develop and maintain a cost model for the consistent evaluation, procurement, utilization, maintenance, and replacement of technology.
 - 3.2 **Refresh Plans** – develop technology refresh plans based on TCO
 - 3.3 **Funding Options** – evaluate acquisition and deployment options in addition to internal and external funding sources
4. Provide a stable, secure, robust and information technology environment
 - 4.1 **Infrastructure** – maintain a reliable and accessible network infrastructure
 - 4.2 **Security** – maintain a secure environment for the District's technology equipment and information
 - 4.3 **Business Continuity** – provide high availability (HA) for critical technology applications and information
 - 4.4 **Information Security Policies and Procedures** – Update, maintain, and implement the District's information security policies and procedures
5. Improve service delivery and broaden support
 - 5.1 **ITIL Implementation** – adopt an Information Technology Service Management (ITSM) model for technology delivery.
 - 5.2 **Service Level Agreements (SLAs)** – establish service offerings, support guidelines and completion expectations
 - 5.3 **Staffing** – monitor and advocate for staffing levels needed to ensure expected SLAs
 - 5.4 **Service Desk** – expand services and improve customer satisfaction
6. Develop and expand user training and services
 - 6.1 **Programs** – develop and maintain ongoing technology training opportunities

7. Improve administrative and operational efficiency and effectiveness
 - 7.1 **Applications** – improve computer application efficiency and effectiveness
 - 7.2 **Systems** – improve computer systems efficiency and effectiveness

8. Maintain an integrated institutional plan
 - 8.1 **Organization** - maintain a District-wide shared governance technology committee structure
 - 8.2 **Maintenance** – review and maintain processes to ensure a living, strategic and viable technology plan.

Alignment of Technology Goals

It is important the RCCD Technology Plan align not only with the District's Strategic Plan but also with the technology goals of each of the District's three colleges.

Table 1 shows the alignment of the eight District Technology Goals with the District's six major strategic themes as well as the alignment with Accreditation Standards IIIC.

Table 2 shows the alignment of District Technology Goals with the five technology goals of MVC.

Table 3 shows the alignment of District Technology Goals with the seven technology goals of NC.

Table 4 shows the alignment of District Technology Goals with the four technology goals of RCC.

Table 1: Alignment of District Technology Goals with District Strategic Goals

District Strategic Goals		Student Access - The District will ensure all students have equitable access to the colleges' courses, programs, and services.	Student Success - The District will provide clear pathways and support for achieving certificates, degrees, and transfer.	Equity- The District will work with community, workforce, and education partners to reduce and eliminate equity gaps.	Institutional Effectiveness - District Services supports the colleges through the identification, measurement, and reporting of student and institutional outcomes to demonstrate the advancement of the District's mission and goals.	Resource Allocation - The District will acquire, manage, and deploy resources to support district goals and advancement.	Partnerships & Communication - The District will position its image and reputation as a leading academic institution in the region by actively pursuing, developing, and sustaining collaborative partnerships with educational institutions, civic organizations, and businesses.
District Technology Goals	Accreditation Standard						
Support instruction and learning through technology	III.C.1	X	X			X	
Support communication, collaboration and innovation across the District	III.C.1 III.C.5	X	X	X	X	X	
Develop and maintain sustainable funding strategies for technology initiatives	III.C.2			X	X	X	
Provide a stable, secure, robust and scalable infrastructure	III.C.3	X	X				X
Improve service delivery and broaden support	III.C.4	X	X			X	X
Develop and expand user training and services	III.C.4	X				X	X
Improve administrative and operational efficiency and effectiveness	III.C.1	X	X	X	X		X
Maintain an integrated institutional plan	III.C.2	X	X	X	X	X	X

Table 2: Alignment of District Technology Goals with Moreno Valley College Technology Goals (Moreno Valley College Technology Plan 2017)

Moreno Valley College Technology Goals	Effectively plan and deliver technology resources that enable all constituencies to achieve their academic and professional goals.	Apply formal standards and procedures to guide planning and implementation of the College's technology resources.	Improve and increase student, faculty, and staff access to various and cutting-edge technologies.	Improve IT operational efficiency and communication to students, faculty, and staff.	Maintain up-to-date technology resources throughout the college.	Provide appropriate and adequate training to students, faculty, and staff.
District Technology Goals						
Support instruction and learning through technology	x		x			x
Support communications, collaboration and innovation across the District				x		
Develop and maintain sustainable funding strategies for technology initiatives		x			x	
Provide a stable, secure, robust and scalable information technology ecosystem	x		x	x	x	
Improve service delivery and broaden support	x				x	
Develop and expand user training and services	x				x	x
Improve administrative and operational efficiency and effectiveness	x					
Maintain an integrated institutional plan	x	x	x	x	x	

Table 3: Alignment of District Technology Goals with Norco College Technology Goals (Norco College Technology Plan 2019-2025)

Norco College Technology Goals	Provide Technology Training and Support for the College Community	Support Instruction and Student Learning with Technology	Measure and Respond to Technology Needs	Maintain an Integrated Technology Plan	Develop Technology Budget Priorities
District Technology Goals					
Support instruction and learning through technology		X			
Support communications, collaboration and innovation across the District		X			
Develop and maintain sustainable funding strategies for technology initiatives				X	X
Provide a stable, secure, robust and scalable infrastructure	X		X		
Improve service delivery and broaden support					
Develop and expand user training and services	X				
Improve administrative and operational efficiency and effectiveness		X	X		
Maintain an integrated institutional plan				X	X

Table 4: Alignment of District Technology Goals with Riverside City College Technology Goals

Riverside City College Technology Goals	Providing Global Access to Information	Meeting Educational and Training needs	Foster Innovation, Communication and Collaboration	Improve the Effectiveness of Student, Faculty and Staff Tasks	Provide Adequate Funding Including Grants, for the Maintenance of Existing Technology and the Purchase of Emerging Technologies
District Technology Goals					
Support instruction and learning through technology	X				
Support communications, collaboration and innovation across the District			X		
Develop and maintain sustainable funding strategies for technology initiatives					X
Provide a stable, secure, robust and scalable information technology infrastructure	X	X		X	
Improve service delivery and broaden support	X	X			
Develop and expand user training and services		X		X	
Improve administrative and operational efficiency and effectiveness				X	
Maintain an integrated institutional plan	X	X	X	X	X

Appendix 1: District Strategic Technology Plan Goals, Strategies, Objectives and Activities/Tasks

1. Support instruction and learning through technology

1.1 Provide and maintain user applications that support instruction and learning.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
1.1.1 Colleague/WebAdvisor - Continue to support the District's legacy Enterprise Resource Planning (ERP) system and related products.	1.1.1.1 Patch Management (External) - Implement vendor and state/federal regulatory changes as required	Information Technology, Vendors, State/Federal Agencies	Ongoing	\$48K/Year	Outside vendor performing system administration functions for Colleague ERP system.
1.1.2 Digital Improvement – Implement modern digital technologies to improve business processes and achieve better outcomes.	1.1.2.1 Implement new ERP/SIS System – New ERP system to include ease of integration and a modern technology platform.	Information Technology, User Departments, Vendors	December 2022	\$13Million	New ERP system selected and implementation project underway.
1.1.3 Mobile Technologies – Implement support for mobile applications, expanding user access and the incorporation of the most used interfaces.	1.1.3.1 Support of Mobile Devices – ERP/SIS evaluation criteria include support for mobiles devices as a requirement.	Information Technology, User Departments	December 2022	TBD	Support for mobile devices is a requirement of the new ERP system.
1.1.4 Student Success - Provide support for Student Success initiatives by implementing automated processes and expanding self-services.	1.1.4.1 Student Educational Planning – Continue development of online, comprehensive student educational plans	Information Technology, User Departments	Ongoing	\$275K/Year	EduNav in production at RCCD
	1.1.4.2 Retention - Evaluate options for tracking and responding to student retention/success	Information Technology, User Departments	Ongoing	TBD	New ERP system includes CRM functionality with case management and student success modules
1.1.5 Assessment - Evaluate supported applications and technologies on a regular basis through surveys and focus groups.	1.1.5.1 Creation - Create feedback and survey tools to assess the usability of supported applications	Information Technology, User Departments, Focus Groups	Ongoing	N/A	Microsoft Forms survey tool is available for district-wide use

1.1 Provide and maintain user applications that support instruction and learning.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
	1.1.5.2 Collection - Survey and request feedback at least bi-annually	Information Technology, User Departments, Focus Groups, Students, Faculty, Staff	Fall 2022	N/A	District-wide Technology Survey completed in fall of 19. Next survey scheduled for fall of 2022
	1.1.5.3 Assessment - Assess survey and feedback results and make changes where appropriate in order to improve effectiveness of applications	Information Technology, User Departments, Focus Groups	Ongoing	TBD	Assessment of survey results to be used as a metric in the RCCD IT Annual Program Review (APR)

1.2 Employ and maintain reporting tools that support the effective use of applications, provide analytical reporting for planning purposes and fulfill external reporting requirements.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
1.2.1 Administrative Tools - Use administrative tools to monitor the effectiveness of supported environments.	1.2.1.1 Daily Monitoring - Monitor systems daily to maximize performance and availability	Information Technology	Ongoing	TBD	SolarWinds configured and operational for network monitoring. Graylog Syslog server in production.
	1.2.1.2 Administrative Tools - Evaluate, purchase and implement monitoring tools to enhance and/or automate the performance and availability of administrative systems	Information Technology	Ongoing	TBD	Implementing Blue Medora and VROPS for monitoring of server infrastructure and applications
1.2.2 Internal Reporting - Monitor institutional efficiency and effectiveness through internal reporting to promote data-driven conversations to improve student success.	1.2.2.1 Enrollment Management Dashboard - Migrate to a Business Intelligence Solution	District Enrollment Management Committee (DEMC), Data Warehouse Workgroup, District Institutional Research	Ongoing	N/A	EMD widely available in PowerBI platform.

1.2 Employ and maintain reporting tools that support the effective use of applications, provide analytical reporting for planning purposes and fulfill external reporting requirements.

Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
		Coordination Committee, VPAA's SCFF Work Group			
	1.2.2.2 Student Success Analytics - Select and implement an interactive student success analytics reporting and dashboard tool that allows users to explore key student progress indicators	District Enrollment Management Committee (DEMC), Data Warehouse Workgroup, District Institutional Research Coordination Committee, District Program Review Committee, VPAA's.	Ongoing	See Below	Colleges are actively using PowerBI, multiple student success dashboards have been developed.
	1.2.2.3 Reporting Service - Select and implement a SQL based generic reporting service	Information Technology, DEMC, Departmental Stakeholders, Data Warehouse Workgroup, District Institutional Research Coordination Committee	Complete	\$150K	TMI tool from Ferrilli to normalize Colleague Data to be operational in fall of 2019.
	1.2.2.4 Strategic planning & assessment tool – Implement a District-wide tool for program review and tracking initiatives/progress against the RCCD strategic plan	Information Technology, Departmental Stakeholders, District Institutional Research Coordination Committee	Ongoing	\$160K Ongoing	Nuventive Premier common instance for all Colleges and the District Office operational in the spring of 2020

1.2 Employ and maintain reporting tools that support the effective use of applications, provide analytical reporting for planning purposes and fulfill external reporting requirements.

Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
<p>1.2.3 External Reporting - Provide local, state and federal data used for compliance, MIS reporting, apportionment and other requirements.</p>	<p>1.2.3.1 Ownership - Establish ownership and a review structure for all external data reports</p>	<p>Datawarehouse Workgroup, (Information Technology, AVC Educational Services, Institutional Effectiveness, Institutional Research, Departmental Stakeholders), District Institutional Research Coordination Committee</p>	<p>December 2022</p>	<p>N/A</p>	<p>Under consideration as part of the ERP replacement project</p>
	<p>1.2.3.2 Timelines - Establish, publish and maintain timelines for all external report submissions</p>	<p>Data Warehouse Workgroup (Information Technology, AVC Educational Services, Institutional Effectiveness, Institutional Research, Departmental Stakeholders), District Institutional Research Coordination Committee</p>	<p>December 2021</p>	<p>N/A</p>	<p>Under consideration as part of the ERP replacement project</p>
	<p>1.2.3.3 Data Warehouse - Create and maintain an institutional data warehouse</p>	<p>Data Warehouse Workgroup, (Information Technology, AVC Educational Services, Institutional Effectiveness, Institutional Research, Departmental Stakeholders), District Institutional Research Coordination Committee</p>	<p>Ongoing</p>	<p>N/A</p>	<p>TMI tool from Ferrilli to normalize Colleague Data became operational in fall of 2019 for use in a data warehouse</p> <p>New ERP system will provide data warehouse functionality</p>

1.3 Identity and Access Management - enable the creation, maintenance, and use of an individualized digital identity for students, faculty, and staff.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
1.3.1 Identity Management Solution – Migrate all RCCD application to the use of a digital identity.	1.3.1.1 Identity Management System. Continue deployment identity management system that facilitates single sign-on capability for RCCD applications.	Information Technology	Ongoing	N/A	RCCD completed transition to Azure Active Directory SSO in spring of 2021

2. Support communication, collaboration and improvement across the District.

2.1 Provide multiple media for communication to students, faculty and staff.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
2.1.1 Online Conferencing – Expand video conference usage and explore web-based technologies.	2.1.1.1 Web-Based Conferencing - Expand the use of CCC ConferZoom	RCCD CCC ConferZoom Leaders	Ongoing	N/A	Microsoft Teams available as a District-wide platform for web-based video conferencing. ConferZoom available to all staff and faculty members
2.1.2 Mass Notification – Maintain a comprehensive emergency notification system.	2.1.2.1 Rave Guardian Mass Notification System – Continue	Risk Management, Safety and Security Taskforce, Information Technology, Communications	Ongoing	TBD	Emergency notification plan being updated by DSSC.
2.1.3 Websites – Support and maintain a platform for the hosting of RCCD and college websites.	2.1.3.1 Azure SharePoint Server Farm – Platform deployed in the MS Azure cloud. RCCD and Norco websites currently hosted.	College Web Teams Staff, Strategic Communications, Web Content Stakeholders	Ongoing	\$45k/year	RCC website migrated to Omni Update in spring 2020, web frontend to be hosted on RCCD Azure environment. Norco deployed a new website in 2019 via the District’s SharePoint infrastructure. MVC migrating to Omni Update, scheduled for spring 2022 launch
2.1.4 Email - Maintain email accounts for students, faculty and staff.	2.1.4.1 Student Email -Continue to support use of this technology	User Departments, Strategic Communications	Ongoing	N/A	All emails account hosted in Microsoft 365.

2.1 Provide multiple media for communication to students, faculty and staff.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
2.1.5 CRM – Implement use of CRM technology platform for student communication and engagement.	2.1.5.1 Anthology Reach Implementation – Use of Anthology Reach for outreach, pre-enrollment communications, and tracking.	Functional Departments, Information Technology	Spring of 2023	N/A	Limited Anthology Reach deployment completed in spring of 2021 Further evaluating CRM technology to assist with student communications. Activity is part of the ERP replacement process.
2.1.6 Intranet – Create a modern, easily accessible platform for disseminating information and collaboration.	2.1.6.1 Office 365 Intranet - Evaluate and implement an “Intranet in a Box” solution for Office 365.	Information Technology, User department	Fall of 2022	TBD	Proof of concept Intranet sites being developed for HRER and Business & Financial Services
2.1.7 Telephone System Modernization – Upgrade to an open standards VOIP telephone system	2.1.7.1 Full Transition to VOIP Telecom Services - improved telephone experience and delivery of a modern telecom toolset that better supports the work from “anywhere” model.	Information Technology, User department	2024	TBD	RCCD IT is conducting preliminary planning.

3. Develop and maintain sustainable funding strategies for technology initiatives

3.1 Develop and maintain a plan for consistent evaluation, procurement, utilization, maintenance, currency and replacement of technology.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
3.1.1 Technology Inventory Reporting - Develop a District-wide technology inventory reporting standard.	3.1.1.1 Methodology - Develop a methodology for gathering and reporting accurate inventory	IT Strategy Council, Information Technology, College Technology Advisory Groups	Fall 2022	N/A	Microsoft InTune partially under deployed for MDM and inventory info gathering.
3.1.2 Total Cost of Ownership (TCO) - Develop and maintain a District-wide TCO Model for Technology.	3.1.2.1 TUM - Develop and maintain a District-wide TCO Model for technology to be used in conjunction with the District Technology Refresh Plan.	IT Strategy Council, Information Technology	Fall 2022	N/A	Under discussion with RCCD IT

3.1 Develop and maintain a plan for consistent evaluation, procurement, utilization, maintenance, currency and replacement of technology.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
3.1.3 Technology Refresh Plan – Use the TCO model in the development of a Technology Refresh Plan to be used in the preparation of Administrative Program Review.	3.1.3.1 Refresh Plan - Create and maintain a Technology Refresh Plan using TCO	IT Strategy Council, Information Technology	Fall 2022	N/A	Being discussed by RCCD IT.
	3.1.3.2 APR - Incorporate the TCO into Administrative Program Review (APR)	IT Strategy Council, Information Technology	Fall 2022	TBD	APR process being revised at the District Office

3.2 Evaluate acquisition and deployment options in addition to internal and external funding sources.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
3.2.1 Acquisition – Evaluate alternative purchase/lease/hosting options for end-of-life equipment.	3.2.1.1 Hardware Acquisition - Evaluate acquisition options as EOL technology is due for replacement	Information Technology	Ongoing	TBD	Annual evaluation prior to APR development
3.2.2 External Resources – Explore external funding sources and protocols for acquisition.	3.2.2.1 Bond Initiatives – Develop infrastructure plan in support of a General Obligation bond being considered for the 2022 election.	Information Technology, IT Strategy Council, District Strategic Planning Committee, Chancellor's Cabinet, Board of Trustees	Summer 2020	TBD	RCCD IT coordinating efforts with Facilities to develop a district-wide IT Infrastructure Plan.
	3.2.2.2 Grants - Research grant options that would assist with implementing and supporting technology.	Information Technology, IT Strategy Council, Grants Office, District Strategic Planning Committee, Chancellor's Cabinet, Board of Trustees	Ongoing	N/A	College Futures Foundation Grant funded the ERP data normalization project

4. Provide a stable, secure, robust and scalable infrastructure.

4.1 Maintain a reliable and accessible network infrastructure.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
4.1.1 Local Area Network (LAN) – Maintain currency and redundancy of the District’s network cabling, routing and switching infrastructure at each primary location.	4.1.1.1 MVC Refresh - Router and switch upgrades	Information Technology	Summer 2023	\$850K	Equipment refresh will be ongoing.
	4.1.1.2 NC Refresh - Router and switch upgrades	Information Technology	Summer 2023		Equipment refresh will be ongoing.
	4.1.1.3 RCC Refresh - complete router and switch upgrades	Information Technology	Ongoing		Refresh underway for lower campus.
4.1.2 Wide Area Network (WAN) – Redesign of the WAN to better support a transition to “cloud first” computing utilizing CENIC/Internet connections at MVC, NC, RCC, and RC3	4.1.2.1 Relocation of Network Operations Center (NOC) – move the NOC and its core functions from the current location at RCC to the county facility, RC3.	Information Technology	Complete	\$30K/Year	Contract for rack space at RC3 completed in fall of 2019.
	4.1.2.2 Border Security Realignment – Install border security equipment at NC, MVC, and RC3	Information Technology	Complete	\$1.2M	Implementation underway
4.1.3 Wireless Access – Simplify access and expand coverage as needed to meet user requirements.	4.1.3.1 Coverage Areas - Assess, expand and maintain acceptable wireless access areas	Information Technology	Spring 2022	\$1.6M	Scheduled for Phase II of the wireless modernization project
	4.1.3.2 Ease of Use - Streamline and simplify use of the District's wireless access protocol	Information Technology	Complete	\$120K	Installation/configuration of Cisco ISE and new wireless controllers underway as of fall 2019.

4.2 Maintain a secure environment for the District's technology equipment and information.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
4.2.1 Network Operations Centers (NOC), Main Distribution Frames (MDF), Intermediate Distribution Frames (IDF) – Maintain physical security standards.	4.2.1.1 - Physical Security - Ensure appropriate security to all NOCs, MDFs and IDFs with the use of locks, alarms and cameras	Information Technology, Facilities, Risk Management	Ongoing	TBD	RCC NOC is in the process of being relocated to RC3 MVC NOC completed. Standardize on enclosed and lockable racks on facility adds and improvements. Various other network closets are an issue.
	4.2.2.1 Policies/Procedures - Complete the review, revision and creation of District information security policies and procedures	Data Access and Security Taskforce, Information Technology	Fall 2022	N/A	Initial draft completed. Anticipated finalization in fall of 2021.
	4.2.2.2 Training - Enforce approved policies/procedures through education and training	Data Access and Security Taskforce, Information Technology	Ongoing	N/A	Proofpoint Security Awareness training implemented by RCCD IT.
4.2.2 Information Security – Ensure best practices are followed with respect to Information security.	4.2.2.3 Systems - Evaluate, purchase and implement technologies to protect and prevent data corruption and or loss	Data Access and Security Taskforce, Information Technology	Ongoing	N/A	Palo Alto Firewall installed. Proofpoint in the cloud watches emails for DLP. Multi-Factor Authentication enabled for faculty/staff.

4.3 Provide High Availability (HA) for critical technology applications and information.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
4.3.1 Operational Continuity – Provide a stable and redundant environment.	4.3.1.1 Network (Fiber) - Complete upgrade and redundant connections throughout the District	Information Technology	Ongoing	\$100K – year 1 cost	MVC, NC completed. 2 of 10 projects at RCC underway.

4.3 Provide High Availability (HA) for critical technology applications and information.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
	4.3.1.2 Network (Routers/Switches) - Complete upgrade and redundant connections throughout the District	Information Technology	Ongoing	TBD	MVC, NC completed. Digital Library and Lovekin in progress.
	4.3.1.3 Environment - Ensure adequate A/C, power and switch/router redundancy in all technology NOCs, MDFs and IDFs	Information Technology	Ongoing	TBD	RCC NOC stabilized with installation of new AC units. RCCD server infrastructure relocated to RC3 colocation facility.
	4.3.1.4 Servers – Maintain and enhance the server virtualization environment.	Information Technology	Fall 2022	\$900K	Hyperconverged server infrastructure operational Winter 2020.
	4.3.1.5 Applications - Provide HA application redundancy	Information Technology	Ongoing	N/A	Colleague moved to virtual environment, failover and HA now operable.
4.3.2 Technology Continuity Plan – Develop and maintain a Continuity Plan that includes restoration of critical District services and data (i.e. network, phones, ERP, Active Directory, Email and LMS) that is integrated with a Facilities Continuity Plan.	4.3.2.1 Technology Continuity - Complete the plan as part of the overall District Strategic Technology Plan	Information Technology, IT Strategy Council, Technology Advisory Councils, District Strategic Planning Committee, Chancellor's Cabinet, Board of Trustees	Pending	N/A	
	4.3.2.1 Cloud Based Disaster Recovery – In the event of an emergency, the ability to restore operations in the cloud.	Information Technology	December 2022	N/A	Minimal operations from the cloud will be viable with completion of the new ERP project
	4.3.2.2 Offsite Backups –Maintain backups of critical data at a location outside of the region	Information Technology	Ongoing	\$30K/Year	Backups maintained at a cloud provider
4.3.3 Safety and Emergency Preparedness – Support plans to assess, integrate and implement emergency systems and technologies.	4.3.3.1 Safety and Emergency Preparedness – Support plans to assess, integrate and implement emergency systems and technologies	Information Technology, IT Strategy Council, Safety and Security Taskforce	Ongoing	TBD	See Safety and Security Taskforce documents

5. Improve service delivery and broaden support services.

5.1 Implement ITIL to support a transition to Information Technology Service Management (ITSM) delivery model.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
5.1.1 ITIL Training – Provide a common understanding of the principles of ITSM.	5.1.1.1 ITIL Foundations Training – introduction to the basic concepts of ITSM for the RCCD IT staff	Information Technology, IT Strategy Council	Pending	\$30K	
	5.1.1.2 Advanced ITIL Training – RCCD IT leadership	Information Technology, IT Strategy Council	Pending	\$20K	

5.2 Service Level Agreements (SLA's) – establish service offerings, support guidelines and completion expectations.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
5.2.1 Service Level Agreements - Create and maintain SLA's for major technology service areas.	5.2.1.1 Applications - Develop a centralized SLA catalog	Information Technology, IT Strategy Council	Fall 2022	N/A	
	5.2.1.2 Network - develop a centralized SLA catalog	Information Technology, IT Strategy Council	Fall 2022	N/A	Initial draft of Network SLA complete.
	5.2.1.3 Telecom - Develop a centralized SLA catalog	Information Technology, IT Strategy Council	Fall 2022	N/A	
	5.2.1.4 Technology Support Services - Develop a centralized service catalog	College TSS groups, IT Strategy Council	Fall 2022	N/A	
	5.2.1.5 Service Desk - Develop a centralized service catalog	Information Technology, IT Strategy Council	Fall 2022	N/A	

5.3 Monitor and advocate for staffing levels needed to ensure expected SLA's.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
5.3.1 Staffing - Evaluate service level expectations, reporting, job responsibilities and funding for technology positions.	5.3.1.1 Distance Education - Evaluate future reporting and positions	IT Strategy Council, Open Campus, District Strategic Planning Committee, Chancellor's Cabinet, Human Resources, Board of Trustees	Ongoing	TBD	

5.3 Monitor and advocate for staffing levels needed to ensure expected SLA's.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
	5.3.1.2 Information Security – Assess impact of regulatory compliance changes on staffing needs.	IT Strategy Council, Information Technology, District Strategic Planning Committee, Chancellor's Cabinet, Human Resources, Board of Trustees	Ongoing	N/A	GLBA safeguard rule changes Increasing compliance requirements 2 nd Network Specialist-Data Systems Security position hired in spring of 2022

5.4 Expand Service Desk services and improve customer satisfaction.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
5.4.2 Hours of Operation – Increase to accommodate requests after hours.	5.4.2.1 Hours - Evaluate need for evening and weekend support staff or external support services	Information Technology, College technology groups	Ongoing	TBD	Spring 2021 -Outside vendor to start providing 24/7 support
5.4.3 Levels of Support – Provide more in-depth support services.	5.4.3.1 Support Services - Evaluate current service requests and determine methods to resolve more efficiently and effectively	Information Technology	Terminated	N/A	Service desk software upgraded to improve workflows and increase efficiency of ticket routing.
5.4.4 Service Desk – Improve operational efficiency, reporting, and offsite access.	5.4.4.1 - Evaluate new software as a service options for help desk ticketing software	Information Technology	2022-23	\$40K/Year	Team Dynamix service desk software being implemented in spring of 2022

6. Develop and expand user training and services.

6.1 Programs - Develop and maintain ongoing technology training opportunities.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
6.1.1 Online Tutorials – locate appropriate materials from easily accessible resources	6.1.1.1 Identification - Identify user training needs that are appropriate via tutorials	Information Technology, Key stakeholders, User Departments	Ongoing	N/A	District technology survey to be deployed in fall of 2022 to gauge training needs.

6.1 Programs - Develop and maintain ongoing technology training opportunities.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
	6.1.1.2 Creation - Create tutorial content for most critical training areas	Information Technology, Key stakeholders, User Departments	Ongoing	N/A	LinkedIn Learning content available through the CCC Chancellor's office.
	6.1.1.3 Deployment - Begin delivery of tutorial trainings	Information Technology, Key stakeholders, User Departments	Ongoing	N/A	
6.1.2 Informational Materials – Identify, develop and publish on appropriate internal websites.	6.1.2.1 Identification - Identify user training needs that are appropriate via informational materials	Information Technology, Key stakeholders, User Departments	Ongoing	N/A	Pending Intranet development
	6.1.2.2 Creation - Create informational material content for most critical training areas	Information Technology, Key stakeholders, User Departments	Ongoing	N/A	Pending Intranet development
	6.1.2.3 Deployment - Begin delivery of informational materials	Information Technology, Key stakeholders, User Departments	Ongoing	N/A	Pending Intranet development
6.1.3 Resources – Identify and fill personnel requirements for the support of ongoing training efforts.	6.1.3.1 Training Resources - Identify personnel requirements to support ongoing District training efforts	Information Technology, Key stakeholders, User Departments	Ongoing	N/A	

7. Improve administrative and operational efficiency and effectiveness.

7.1 Improve computer application efficiency and effectiveness.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
7.1.1 Functional Enhancements – Continue to provide improved functionality for District computer applications where possible.	7.1.1.1 Software Application Enhancements - Continue to provide enhanced functionality for District supported software applications where appropriate	Information Technology	Ongoing	N/A	Director of Administrative Applications to provide annually.
7.1.2 Electronic Document Management – Continue to streamline processes and storage of information through the digitization of paper documents and forms.	7.1.2.1 Electronic Forms and Workflow continue development of the electronic forms and workflow solution (eRetrieve)	Information Technology, Key Stakeholders, User Departments	Ongoing	N/A	SoftDocs eRetrieve in production, 5 forms deployed.
7.1.3 Training – Encourage participation in software application conferences and workshops.	7.1.3.1 Training - Budget and participate in annual training opportunities that support District hardware and software products	Information Technology, Key User Department Staff	Ongoing	N/A	

7.2 Improve computer systems efficiency and effectiveness.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
7.2.1 Access Anywhere Model – Investigate technologies that support the supports the learn and work from anywhere on, any device model	7.2.1.1 Application Virtualization Strategy - Develop an application virtualization strategy for lab and office environments	Information Technology, IT Strategy Council	Not started	N/A	VMware Workspace One licenses for pilot project purchased
	7.2.1.2 Mobile Device Management (MDM) Strategy - Develop an MDM strategy which supports the safe and effective use of mobile devices from any Internet connected location.	College Technology Groups, Information Technology	Fall 2022	N/A	Microsoft InTune MDM deployment underway

8. Maintain an integrated District Strategic Technology Plan.

8.1 Formalize and maintain a District-wide shared governance technology committee structure.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
8.1.1 Information Technology Strategy Council (ITSC) – Define role of ITSC within the Resources Planning Council.	8.1.1.1 ITSC Reporting and Governance – ITSC was placed under the Resource Planning Council in the 2019-2024 District Strategic plan. ITSC charge and membership should be examined by the Resource Planning Council.	IT Strategy Council, Resource Planning Council, District Strategic Planning Committee	Ongoing	N/A	

8.2 Review and maintain processes to ensure a living, strategic and viable technology plan.					
Measurable Objectives	Activities/Tasks	Participants	Timelines	Estimated Costs	Evidence
8.2.1 Process – Evaluate the Technology Plan review, update, and maintenance processes	8.2.1.1 Process – Clearly define the input mechanisms to midcycle plan updates from the College Technology groups.	IT Strategy Council, Resources Planning Council, College Technology Groups	Ongoing	N/A	

Appendix 2: District Technology Refresh Plan (DTRP)

Goal of the Refresh Plan

The goal of a DTRP is to keep technology reliable and functional, ensuring that critical components of the District infrastructure are maintained in a proactive manner. This requires a recurring technology refresh budget and an effective plan for systematic replacement of end of life and obsolete equipment. In addition, a technology refresh plan helps control the overall cost of technology by planning for upgrades, replacements, support, and training in a holistic manner.

Measures of Success

- District technology refresh budget is transparent and sustainable.
- District constituents have broad-based support for the refresh plan.
- Technology investment tied to strategic initiatives supporting student outcomes

Guidelines

This document will provide a high-level guideline for the provisioning of District technology equipment and related services. The four areas covered in detail include:

- Recommended Standards / Configurations
- Warranty / Maintenance Requirements
- Criteria for Replacement / Timelines
- Redeployment / Liquidation

Recommended Standards / Configurations

The District gains benefits from maintaining, within reason, the practice of purchasing equipment according to agreed-upon standards. Those benefits include:

- Better pricing of components and supplies;
- Reduced administrative overhead;
- Streamlined processing of purchase requests;
- Greater technology support;
- A reduction in maintenance and support costs; and
- A better ability to train on the new equipment.

Notwithstanding the above, the purchase of non-standard technology components is not prohibited by the RCCD Technology Plan. However, such purchases should be minimized as much as possible. The purchase of non-standard technology components must be justified by the existence of special circumstances requiring it.

Recommended standards have been defined for network, data, and physical infrastructure. The Associate Vice Chancellor of Information Technology & Learning Services will ensure these standards are re-evaluated periodically based on common needs, vendor offerings, cost, reliability, supportability, and quality and timeliness of vendor support. Please note: The standards are not published in the RCCD Technology Plan due to the need to update the equipment specifications on a repetitive basis as technology evolves.

Replacement/Timelines

To ensure equity between all areas of the District, allocation of technology resources is a representative and participatory process linked to the District's strategic planning process. Each year through the Program Review process, the Associate Vice Chancellor of Information Technology & Learning Services will submit resource requests to annually allocate funding to refresh the District's technology equipment.

Replacement Criteria

Age of the Equipment. The first criteria that will be considered is the age of the equipment. Under this criterion, replacement equipment is determined as a result of the inventory that identifies the oldest equipment in the District. Please the table below with the approximate replacement cycles for the equipment technology managed by RCCD IT.

Programmatic Needs. With this criterion, technology resources, including technology refresh resources, are allocated based on priority needs. Needs are determined through the District planning processes and shall be transformed into projects or initiatives. Please note, all projects and initiatives are aligned with the RCCD Strategic Plan.

Equipment Type	Replacement/Upgrade Period	Program Area
Fiber/Bandwidth	10 Years	Physical Infrastructure
Firewalls	5 – 7 Years	Information Security
Routers	7 Years	Network Infrastructure
Switches	7 Years	Network Infrastructure
Servers	5 Years	Data Infrastructure
Wireless Access Points	5 Years	Network Infrastructure
Disk Storage	5 Years	Data Infrastructure
Monitoring Appliances	5 Years	Network Infrastructure
Uninterruptable Power Supplies (UPS)	5 – 7 Years	Network Infrastructure
Phone System	3 Years	Network Infrastructure
Electrical Power	10 Years	Physical Infrastructure
Backup Generators	10 Years	Physical Infrastructure
Air Conditioning (Environmental Control)	10 Years	Physical Infrastructure

Redeployment / Liquidation

As new equipment is purchased, the diverse system requirements of technological resources in a campus environment may allow for a shifting of equipment from one function to another, using more powerful equipment for higher demand environments and older equipment in more limited environments. In this manner the lifespan of equipment can be increased through intelligent use of available resources.

Funding

ITSC will continue to pursue avenues for funding technology upgrades with recommendations included in the District’s Annual Program Review for IT.

Appendix 3: District Network Redesign

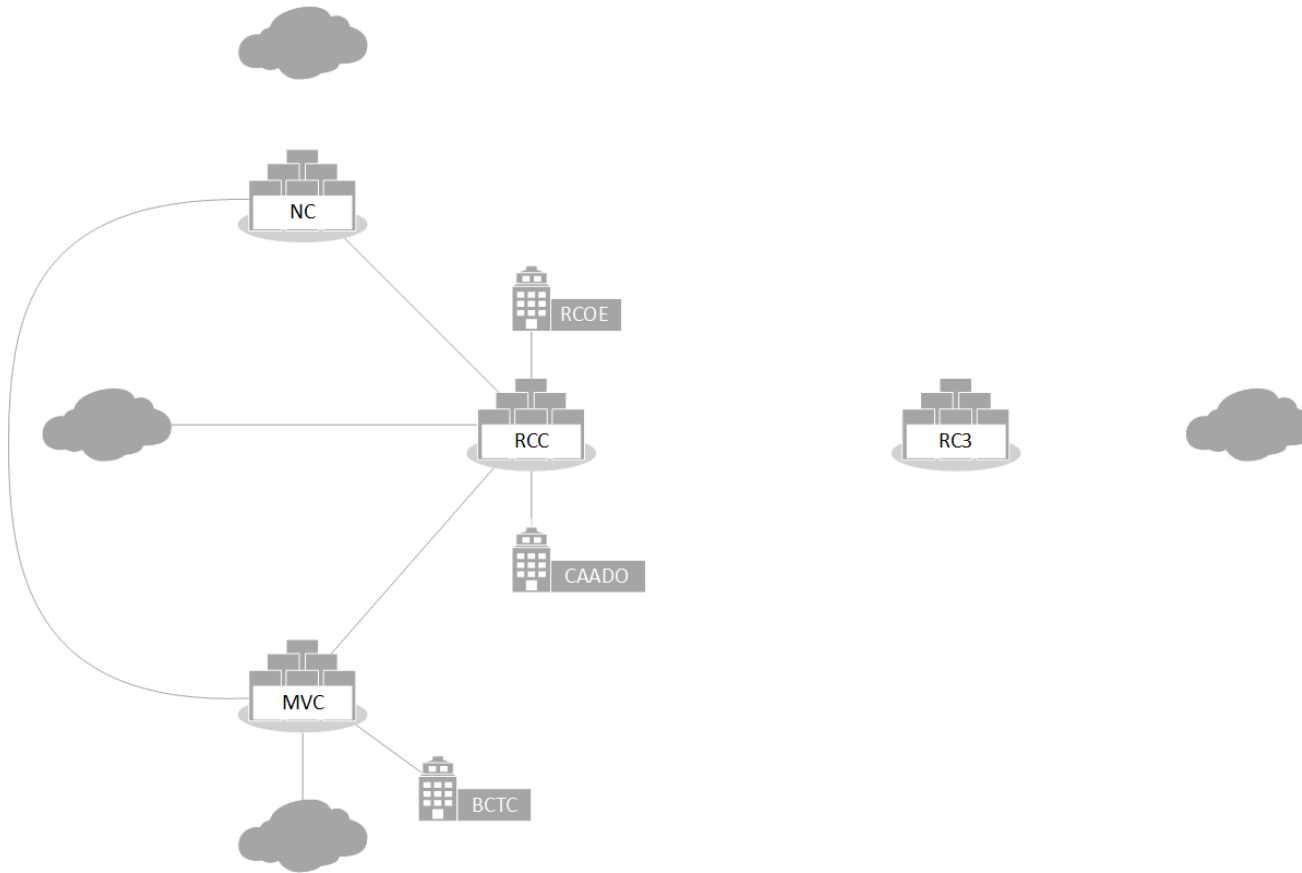
Network uptime is critical to instructional and business continuity. It is accomplished by architecting path/access redundancy and resiliency through a holistic network design. RCCD has had several major network design changes, echoing evolutions of technology trends. Currently, major shifts to hyperconverged infrastructure, virtualization, along with ever-growing cloud resources, requires a network redesign to align with immediate and near-future advancements.

This phased High Level Design (HLD) ensures core RCCD technology investments are housed in an enterprise-level data center (co-location facility at Riverside County Collaboration Center (RC3) and access to centralized and Internet resources have multiple access paths.

2018-2019 Status

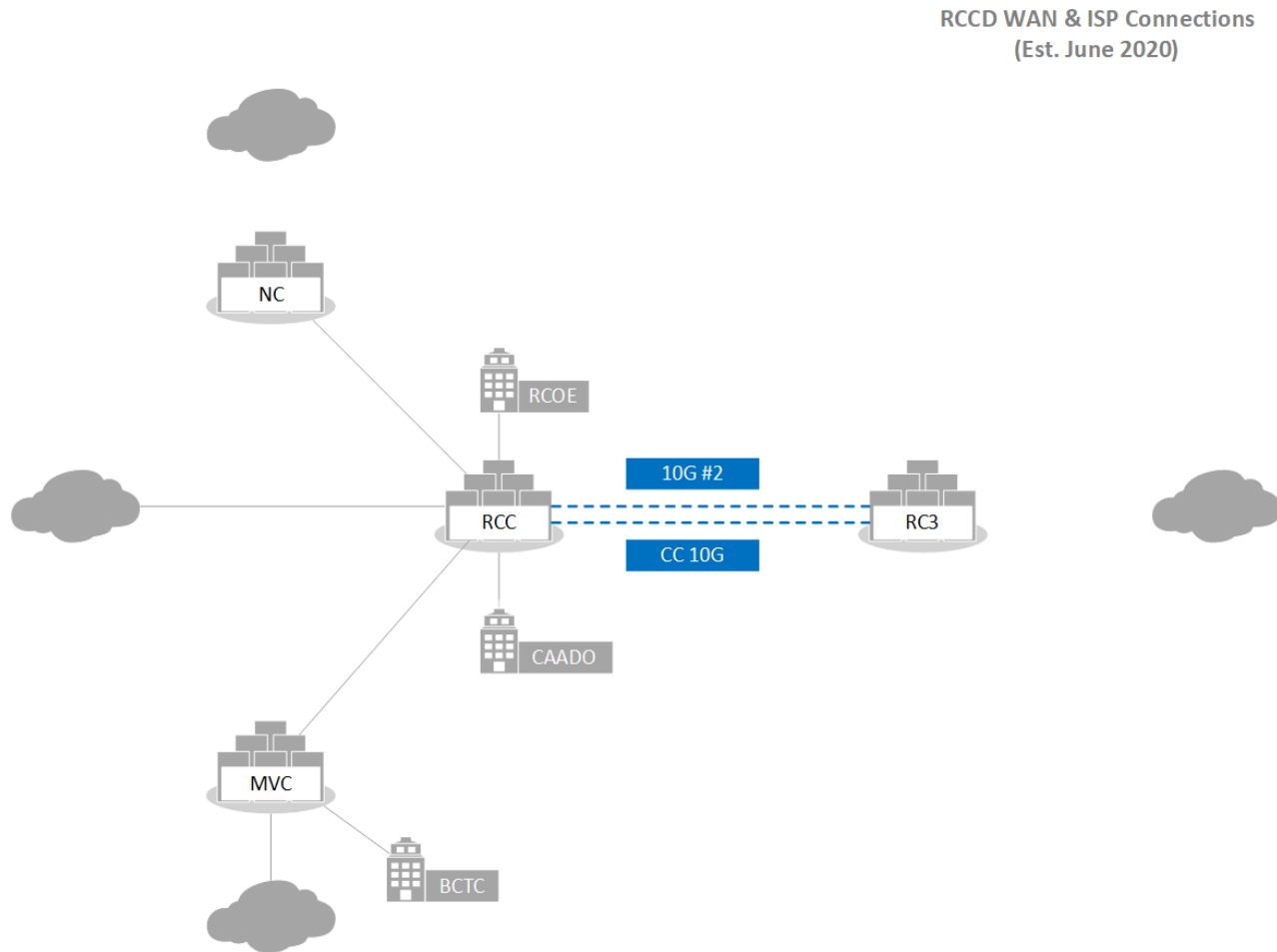
Internal network connections between the 3 colleges, satellite locations connected to geographically closest college. RCC serving as the hub of RCCD's wide area network (WAN). Internet gateway at RCC and MVC.

RCCD WAN & ISP Connections
(June 2019)



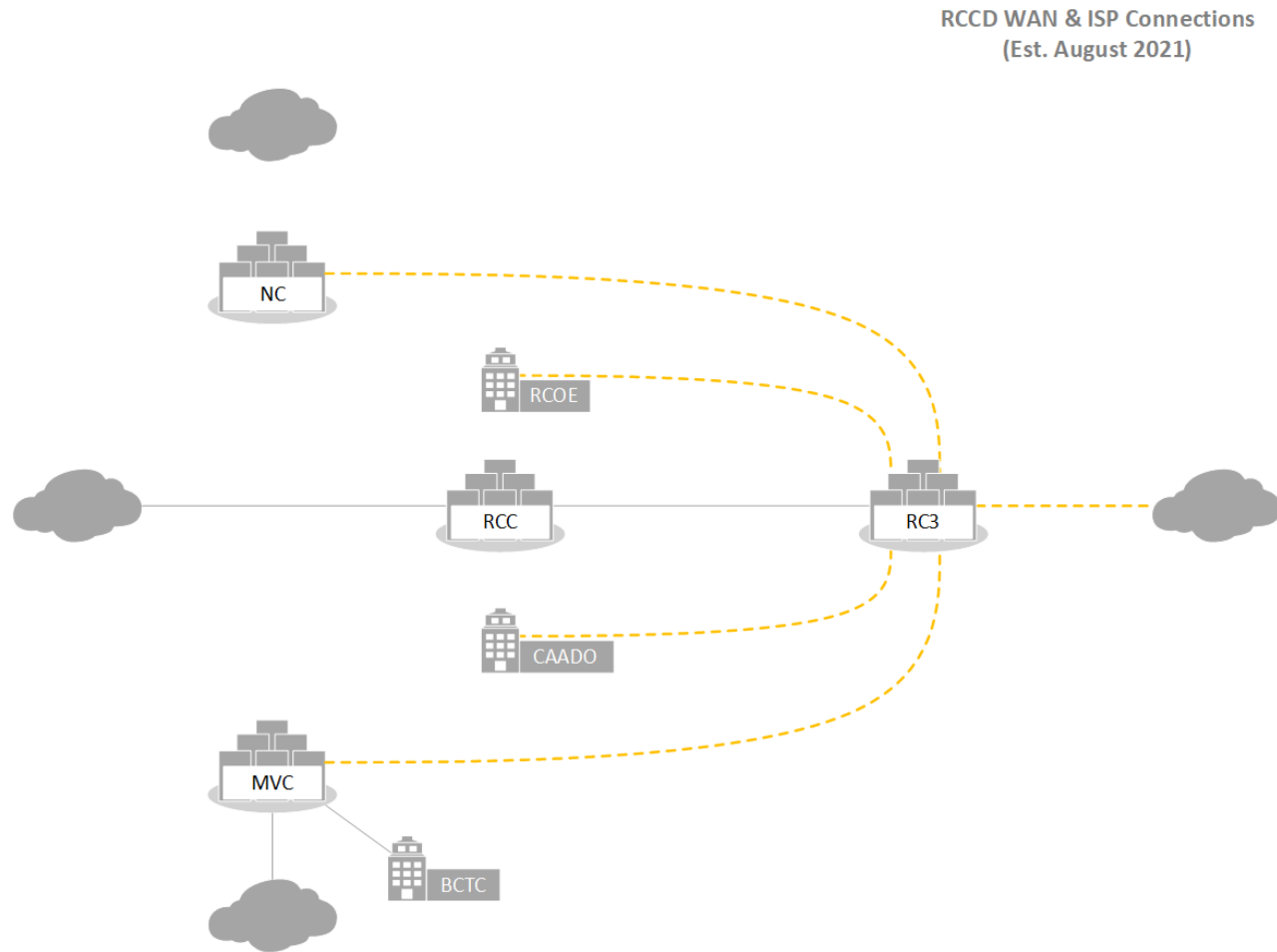
2019-2020 Progress

Internal network connections between the 3 colleges via RCC serving as the hub of RCCD's wide area network (WAN). Internet gateways at RCC and MVC. Repurposed MVC-NC WAN link to RCC-RC3. Add second RCC-RC3 WAN link for redundancy. Move centralized hyperconverged infrastructure from RCC to RC3's enterprise-level data center.



2020-2021 Progress

Migrate hub of RCCD's wide area network (WAN) from RCC to RC3. Establish Internet connection at RC3.



Final RCCD Network Redesign

Hub of RCCD's network relocated to RC3. Internet gateway at RC3 and at each college.

The realization of the final design will provide multiple paths to centralized and Internet resources, ease mobility and sharing of internal resources and technology systems.

