

FY 2021-22 Information Technology Capital Budget Requests

Total recommended by OSPB for funding: \$21,561,817 CCF / \$14,838,440 CF/FF

OSPB Priority	CCHE Priority	Agency/Institution	Project Title	CCF Request	CF Request	FF Request	Total
Projects Recommended for Funding by OSPB							
1	N/A	Department of Public Health and Environment	Integrated Reportable Disease Data Management System	\$10,000,000.00	\$ -	\$ -	\$ 10,000,000.00
2	N/A	Office of eHealth Innovation	Rural Connectivity	\$ 1,081,800.00	\$ -	\$ 5,416,200.00	\$ 6,498,000.00
3	N/A	Department of Labor and Employment	Modernize Colorado Automated Tax System	\$ -	\$9,422,240.00	\$ -	\$ 9,422,240.00
4	N/A	Department of Human Services	Behavioral Health- Infrastructure Investments	\$10,480,017.00	\$ -	\$ -	\$ 10,480,017.00
Projects Not Recommended for Funding by OSPB							
5	1	CSU-Ft. Collins	Upgrade Network Hardware	\$ 541,000.00	\$219,000.00	\$ -	\$ 760,000.00
6	2	Colorado Northwestern Community College	Computer and Network Upgrades	\$ 1,746,412.00	\$174,641.00	\$ -	\$ 1,921,053.00
7	3	Adams State, Fort Lewis, and Western	Digital Transformation Initiative for Rural Higher Education	\$ 9,199,055.00	\$92,920.00	\$ -	\$ 9,291,975.00
8	4	University of Northern Colorado	Next Generation Cyber Secure Network	\$ 1,191,077.00	\$11,910.00	\$ -	\$ 1,202,987.00
9	5	Colorado Mesa University	Network Security and Resiliency	\$ 2,249,898.00	\$222,519.00	\$ -	\$ 2,472,417.00
10	6	Community College of Denver	Classroom and Conference Room Technology	\$ 1,595,878.00	\$101,865.00	\$ -	\$ 1,697,743.00
11	7	Colorado School of Mines	Re-envisioning Mines ERP and SIS	\$ 789,000.00	\$122,000.00	\$ -	\$ 911,000.00
12	8	Metropolitan State University of Denver	Reimagining the Campus Digital Experience	\$ 1,300,000.00	\$200,000.00	\$ -	\$ 1,500,000.00
13	9	Metropolitan State University of Denver	Network Infrastructure Modernization	\$ 1,250,000.00	\$250,000.00	\$ -	\$ 1,500,000.00
14	10	Otero Junior College	Technology and Equipment Upgrades	\$ 597,750.00	\$125,000.00	\$ -	\$ 722,750.00
15	11	Lamar Community College	LCC Technology and Equipment Upgrades	\$ 553,002.00	\$35,298.00	\$ -	\$ 588,300.00

OSPB: Governor's Office of State Planning and Budgeting

CCHE: Colorado Commission on Higher Education

CCF: Capital Construction Fund (state funds)

CF: Cash Fund

FF: Federal Funds

Fiscal Year 2021-22 Information Technology Request

Public Health and Environment Integrated Reportable Disease Data Management System

SHORT PROJECT DESCRIPTION

The Colorado Department of Public Health and Environment (CDPHE) is requesting state funds to replace the Colorado Electronic Disease Reporting System (CEDRS) with new a system to improve automated disease reporting processes and disease data management.

PRIORITY NUMBERS

2020060

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	1 of 15	Recommended for funding.
CDPHE	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$10,000,000	\$0	\$0	\$10,000,000
Total	\$0	\$10,000,000	\$0	\$0	\$10,000,000

PROJECT STATUS

This is a new, never-before-requested project.

PROJECT DESCRIPTION

CDPHE is requesting state funds to replace the CEDRS and other data management systems used by the Division of Disease Control and Public Health Response with a new system to improve automated disease reporting processes and disease data management. CEDRS is the web-based statewide reportable disease reporting system for the state of Colorado. Epidemiologists, healthcare providers, laboratory providers, and local public health agencies in Colorado use CEDRS to enter and view information on over 75 reportable disease conditions and to report this information to the U.S. Center for Disease Control.

The project will replace CEDRS with a customized application. The department plans to phase this project over five phases in order to develop and implement a customized system that is effective for all users. Project phases include:

- phase 1: product planning;
- phase 2: agreement on high-level system architecture and application design;
- phase 3: award systems integrator contract;
- phase 4: establishment of IT infrastructure; and
- phase 5: component development.

In the first phase of this project, CDPHE will conduct a stakeholder analysis and product planning to learn what users of CEDRS want in a new system. These stakeholders include CDPHE staff; such as epidemiologists, reportable health conditions staff, and business technology staff; and users across the state including local health department staff, healthcare providers, laboratorians, and infection control practitioners. The department also plans to create a request for information (RFI) in this phase to determine if any custom off-the-shelf (COTS) products for automated disease reporting processes and disease data management may be purchased for this project.

Fiscal Year 2021-22 Information Technology Request

Public Health and Environment Integrated Reportable Disease Data Management System

PROJECT JUSTIFICATION

In 2017, the department and the Governor's Office of Information Technology (OIT) spent \$1 million to update CEDRS. The system was hosted on an out-of-date platform and the department states that the technology was becoming obsolete. This update resulted in a system that allowed users to see all disease events associated with a single individual instead of an individual being in the system multiple times under different diagnoses. The department states that during this update, they considered several COTS systems to replace CEDRS because of ongoing system issues. However, the department determined that a system built and maintained by OIT was the best option at this time.

In addition, CDPHE explains that the COVID-19 pandemic has resulted in the need for a case investigation and contact tracing (CI/CT) database. The department decided not to build a CI/CT system within CEDRS and instead bought a system called Dr. Justina. Currently, Dr. Justina and CEDRS cannot interface and Dr. Justina users from local public health agencies are learning and testing its interface. CDPHE states that Dr. Justina may not be sustainable after 1 to 2 years.

According to CDPHE, approximately 1,200 people use CEDRS to submit 1,000 lab tests per day and to report 10,000 to 20,000 cases of certain conditions per year to the CDC to assist in disease monitoring and outbreak prevention. The COVID-19 pandemic has increased the usage of CEDRS by CDPHE and other users for reporting, data processing, and data storage. CDPHE estimates that since March 2020, CEDRS system users have submitted 18,500 lab tests per day and have reported 80,000 cases of conditions to the CDC as a result of COVID-19.

The department also states that CEDRS has numerous existing issues that have been magnified as a result of the COVID-19 pandemic, including: large amounts of technical debt, the absence of an application programming interface, the cumbersome and tedious way to pull data, its unsupported user access control from a past vendor, and its lack of an archiving solution. These issues have caused the system to be a hindrance to an effective public health response in Colorado, and CDPHE hopes this project will allow the state to implement a new system and be better prepared for the next public health emergency.

COST-BENEFIT ANALYSIS

The department was unable to quantify cost savings as required by House Bill 15-1266, but anticipates that the project will result in increased staff efficiencies and enable the state to be better prepared to respond to any future public health emergencies.

PROJECT COST INFORMATION

The department provided the following cost estimates for the project:

Professional services (contractors, quality assurance, training): \$2,065,000;
Software Costs: \$7,000,000;
Equipment Costs: \$435,000; and
5% Project Contingency: \$500,000.

OPERATING BUDGET IMPACT. CDPHE explains that this project may have ongoing costs of up to \$2 million for licensing and change request fees depending on how the system is designed and implemented. CDPHE states that these costs will be addressed through existing operational funding, future budget requests, or through future federal grant opportunities.

CASH FUNDS

N/A

PROJECT RESEARCH

The department is using a \$7.0 million dollar baseline for this project's software costs because this is the cost of replacing the CEDRS system with an available vendor COTS solution. The department did not conduct a formal RFI to estimate this cost, but explains that \$7.0 million will cover project costs such as initial data conversion, interface and development deliverables, quality assurance testing, and procurement.

Fiscal Year 2021-22 Information Technology Request

Public Health and Environment Integrated Reportable Disease Data Management System

ADDITIONAL PROJECT INFORMATION

CDPHE explains that this project will use agile methodology to ensure the project has incremental deliveries of system components, rapid feedback for system design, and is responsive to change.

The project will also focus on integrating the new system with at least 10 other state systems that collect communicable disease surveillance, such as the state Patient Reporting Investigating Surveillance Manager, the Tuberculosis database, and the Lead database. CDPHE states that by integrating disease outbreak data into a single system, the quality of state data will be improved and the department will be able to provide better disease control services to Coloradans.

CHANGE MANAGEMENT. The department states that this project will adhere to a change management plan as required in agile methodology. This change management plan will include a training plan to address changes to manual and automated business processes, navigating the user interface, and technical knowledge necessary for a new customized system.

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	July 2021	December 2021
Implementation	December 2021	March 2023
Testing	April 2022	June 2023
Closing	October 2022	June 2023

QUESTIONS

The department provided the following information in response to JTC Staff questions.

1. How much money was spent on the latest update of CEDRS in 2017?

From an OIT perspective, the costs for the redevelopment project cost over \$1 million dollars between 2016 and 2018. There were additional programmatic costs associated with the redevelopment that are more difficult to quantify. However, there was a multidisciplinary team that worked on that project over the same time frame that included many high-level and line staff.

One of the biggest reasons that CEDRS was redeveloped was because the platform that it was housed on was very old and the technology was becoming obsolete. The updated system allowed for movement from a case-based system to a person-based system that would allow users to see all disease events associated with a single person instead of a person being in the system under several different diagnoses.

2. If the department received \$2,000,000 for this project, what could be accomplished?

The requested \$10 million is intended to work through the following phases:

- Phase I: Product Planning
- Phase II: Agreement on High-Level System Architecture and Application Design
- Phase III: Award Systems Integrator Contract
- Phase IV: Establishment of IT Infrastructure
- Phase V (multiple cycles): Component Development & Delivery Cycles

Note that project and contract management and IT Professional Services will be needed throughout all phases. \$2 million would possibly get through phases I and II, which are mostly planning and design. This would not leave enough funds to meaningfully proceed with phases III and IV. However, there may be enough remaining funds to do some underlying data integrity improvements (slated for one of the cycles in Phase V). In short, \$2 million would provide for a roadmap, design, and some prioritization of the implementation work but not substantive, material system improvements.

Fiscal Year 2021-22 Information Technology Request

Public Health and Environment *Integrated Reportable Disease Data Management System*

3. Please explain the possibility of the department's need to support the existing system while the new system is partially or fully implemented, along with the possibility of requesting an increase in the annualized operating budget.

There is a 100 percent possibility that the old system will need to be supported while the new system is being implemented. It is also best practice to run both systems simultaneously to ensure that the new system does not have any bugs that would stop business. This is the system that local health departments, laboratories, and hospital systems use to report disease. Therefore, CDPHE needs to ensure that there is always a functional system for our partners to use. Should the need arise for funding beyond the existing operating budget for CEDRS, the Department will address this through the annual budget process and/or request support through federal grant funds if available.

4. Since the department states that this project will use agile methodology, why is the department requesting the full project amount in year 1?

Rather than the full amount, 85 percent of the \$10 million has been requested in the first year because of the anticipated, one-time outlay for infrastructure, data re-architecting, and integrations. The department is open to working with the JTC on an approach that establishes a gating mechanism for releasing funds throughout the year.

5. The table at the end of the request document states that the current budget request total request is \$8,655,000, with a year 2 request of \$1,345,000, but the first page of the document states the department is requesting \$10,000,000 in this budget request. Please explain what the cost of this phase of the project is and what funding amount will be requested next fiscal year.

This phase of the project will cost \$10M. The department anticipates spending \$8,655,000 in FY22 and \$1,345,000 in FY23

6. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

We are estimating that we will spend approximately \$8,655,000 in FY22 for planning, architecture, and design as well as procurement of new technology. After that is completed we would then do data migration, validation and cutover in FY23. Our concern with spending the full \$10M in FY22 is that trying to accomplish the items outlined for FY23 will be quite disruptive to operations and will require SMEs that will be focused on the tasks outlined for FY22. Our concern with IT capital appropriations being for a single year is that often these projects have timing setbacks, whether during procurement or implementation, that cause them to extend past a single fiscal year. Without rollforward spending authority ensuring funding over multiple years we may have to halt a project in order to secure spending authority in a future year, or we may have difficulty hiring contract employees within the limited time frame. With this change presumably we would be allowed to request funding for multiple years in a single request, much like operating requests, but again we would be concerned with attempting to complete an entire project with very specific dollar amounts in each year rather than having the flexibility to spend the funds over an elongated period.

Fiscal Year 2021-22 Information Technology Request

Governor's Office of eHealth Innovation
Colorado Rural Connectivity Program

SHORT PROJECT DESCRIPTION

The Governor's Office of eHealth Innovation (OeHI) is requesting a combination of state funds and federal funds spending authority to increase rural health providers' access to health information, analytics, and technical support to improve the health and safety of rural communities.

PRIORITY NUMBERS

2021024

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	2 of 15	Recommended for funding.
OeHI	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$1,081,800	\$0	\$0	\$1,081,800
FF	\$0	\$5,416,200	\$0	\$0	\$5,416,200
Total	\$0	\$6,498,000	\$0	\$0	\$6,498,000

PROJECT STATUS

This is a new, never-before requested project.

PROJECT DESCRIPTION

OeHI is requesting a combination of state funds and federal funds spending authority to increase rural health providers' access to health information, analytics, and technical support to improve the health and safety of rural communities.

This project will develop a model to connect rural health care providers to Colorado health information exchanges (HIEs) and electronic health record (EHR) systems through a group purchase. This project is a collaborative effort between OeHI, the Governor's office, the Lieutenant Governor's office, and the Colorado Department of Health Care Policy and Financing (HCPF). OeHI is also working with Colorado's Office of Broadband to expand access to broadband for this project.

OeHI states that this project will also provide technical assistance to rural safety-net health care facilities that are not prepared to connect to an EHR or HIE system, and will create a financially sustainable path for these facilities to continue using these connections in the future.

Fiscal Year 2021-22 Information Technology Request

Governor's Office of eHealth Innovation Colorado Rural Connectivity Program

PROJECT JUSTIFICATION

OeHI explains that many rural safety-net health care facilities operate on small budgets and are unable to pay for individual connections to either of Colorado's HIEs, the Colorado Regional Health Information Organization and Quality Health Network. Costs and fees to connect to an HIE include: broadband connection, data transmission, data access, analytic reports creation, and connections to EHR vendors.

As of November 2020, 35 out of 84 Colorado rural safety-net providers are connected to an HIE. Rural safety-net providers are defined as providers who serve members of Health First Colorado, which is the state Medicaid program. HIEs and EHRs allow clinics to manage their patient population by sharing real-time data with other clinics in Colorado, which reduces health care inefficiencies, provider burden, and prescription drug costs while improving patient health outcomes and data quality, and lowers costs over time.

Currently, 18 rural safety-net hospitals in Colorado operate at a profit loss and many of these hospitals own and operate the majority of the state's rural safety-net facilities. OeHI anticipates that more rural safety-net hospitals and clinics will operate at a profit loss in FY 2021-22 due to the COVID-19 pandemic. The office states that the COVID-19 pandemic highlighted that connectivity to the state HIEs is a pressing need for all health clinics, and emphasized that rural providers are not able to provide the same level of service and care coordination that providers on the front-range can because they are unable to share electronic health data.

OeHI states that some of the FY 2019-20 funds appropriated for the Colorado Health IT Roadmap were shifted to begin this project during the COVID-19 emergency response in May 2020. These funds were used to contract with the Colorado Community Managed Care Network and the Colorado Rural Health Center to implement COVID-19 surveillance dashboards for rural safety-net providers. As of November 2020, OeHI was able to provide 45 rural safety-net health care providers with access to these dashboards. Surveillance dashboards allow rural providers real-time access to COVID-19 test results, high-level summaries of their patient population, and gives these providers the capability to look up specific patient information online. The office states that while these dashboards are currently being used for rural safety-net providers to address the COVID-19 pandemic, in the future, this tool and functionality can be used for statewide care coordination for individuals with chronic health conditions. The office also states that the Colorado Health IT Roadmap project will continue in the future as the needs of Coloradans and health care providers continue to evolve.

COST-BENEFIT ANALYSIS

OeHI summarizes the expected costs savings of this project below:

- improved data quality creates efficiencies to health care facilities. Poor data quality may create additional costs for many organizations and providers.
- improved coordination of projects, data, and systems increases access to information, thereby, reduces duplication, costs, and improves care coordination.
- improved care coordination reduces costs, and improves outcomes and patient experiences.

OeHI explains that the existing HIE infrastructure in the state will be leveraged for this project, rather than building new infrastructure, which will save time and money.

Fiscal Year 2021-22 Information Technology Request

Governor's Office of eHealth Innovation
Colorado Rural Connectivity Program

PROJECT COST INFORMATION

HIEs charge a subscription fee for all members to access health information and other services they can offer, such as real-time alerts and quality reporting. The office explains that the average upfront cost to connect one facility to a HIE is \$20,000. The average ongoing costs range from \$3,000 to \$10,000 per facility per month, depending on multiple variables including: the type and version of the EHR system used, the HIE pricing model, and the HIE services the provider elects to purchase. OeHI plans to connect all remaining 49 rural safety-net providers to an HIE during this project.

This project reduces the costs of a rural facility to connect to a HIE through a group purchase. A group purchase will minimize the number of individual provider EHR connections needed for rural clinics to access comprehensive health information on their patients. The two Colorado HIEs allow one purchased membership to access information statewide, which can be used by numerous rural facilities.

OeHI has not determined whether a future budget request will be submitted for this project. However, OeHI states that the office plans on submitting a supplemental budget request to expand broadband to rural facilities in the future.

The office states that this project's three-year appropriation will allow rural safety-net providers to plan for making these EHR and HIE connections financially sustainable. This sustainability planning and transition will begin in FY 2022-23, which may determine if OeHI and HCPF will submit a future budget request. OeHI also states that they will continue to work with HCPF to identify and maximize future federal funding match opportunities.

FEDERAL MATCH. OeHI expects to receive a 90 percent federal match for the implementation and general administrative portions of this project from the Centers for Medicare and Medicaid Services (CMS). The office also states that funds used to pay for rural safety-net provider's ongoing future subscription to HIEs and EHRs will receive a 75 percent federal match through CMS. OeHI plans to submit requests for the federal matches once state funds are appropriated.

CASH FUNDS

N/A

PROJECT RESEARCH

The office estimated the costs of this project based on the estimated costs to connect a rural facility to an HIE; the cost of providing ongoing technical support to these facilities; and the general administrative costs. The office also researched how much it cost other states to implement similar projects.

ADDITIONAL PROJECT INFORMATION

OeHI states that this project focuses on sharing data statewide through HIEs. All data sharing must follow strict Health Insurance Portability and Accountability Act (HIPAA) requirements and agreements. The office also explains that the Governor's Office of Information Technology (OIT) has been engaged in this project.

The office explains that there are national health information exchange networks which provide high-level information sharing on a national level, but lack detailed health information that is available within regional and state HIEs. States are working toward a national model for health information sharing with the goal of establishing a trusted exchange framework and common agreement. This project will only focus on statewide data sharing, but OeHI will leverage all opportunities regionally and nationally to advance information sharing to support improved health outcomes and reduce costs.

Fiscal Year 2021-22 Information Technology Request

Governor's Office of eHealth Innovation
Colorado Rural Connectivity Program

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	October 2020	September 2021
Implementation	July 2021	July 2022
Testing	July 2022	June 2023
Closing	June 2022	June 2024

QUESTIONS

The office provided the following information in response to JTC staff questions.

1. Does the department plan to submit a subsequent budget request for the Rural Connectivity Project next fiscal year? If not, please provide the reason the department is not submitting a future budget request for each year of the Rural Connectivity Project.

OeHI is partnering with HCPF on this project to determine next steps including whether they need to submit a new request in the coming years or if they can leverage existing appropriations. The three-year lifespan of this appropriation sets up rural safety-net providers for sustainability past this initial budget item. This sustainability planning and transition will begin in FY22, and future operational support costs may be incorporated in a future budget request. OeHI and HCPF also continue to work together to identify and maximize future federal funding match opportunities.

2. Does the Rural Connectivity Project scope include sharing data nationally, regionally, or both? Please explain, including any applicable advantages or disadvantages.

Most health care is provided locally or regionally, rather than nationally. The greatest opportunity for our health care system is to make health data available statewide, including access to critical patient information with the patient's known primary care provider, especially when care, treatment, or testing is received outside of the home community. To achieve this, we need the rural safety-net providers connected to the HIEs; to date, only 35 of 84 total providers are connected to the HIEs.

One of the most important benefits of provider connection to the HIEs is real-time data sharing for their patients. The HIEs have access to patient information for individuals who receive care in Colorado, but some of whom may not reside in Colorado. To date, the HIEs have over 8.4 million individuals represented in their exchanges, which is greater than the number of individuals that reside in Colorado. Colorado is a destination for recreational tourism as well as for those traveling to seek specialized care or from nearby state border towns. To ensure they are effectively managing their information, HIEs access identity solutions that leverage larger national data sets to confirm identity and are connected to HIEs in other states through the patient centered data home network; this ultimately ensures the correct information is associated with the right individual and the intended provider has access to that patient information.

This project includes sharing data regionally and statewide through the use of health information exchanges as agreed upon by providers and health information exchange organizations participating in this project. All data sharing must follow strict HIPAA requirements and agreements. To date, there is not a unique national medical record number or identifier system for health care, nor is there a mature national system for sharing health information across the country. There are national health information exchange networks which provide high-level information but lack detailed longitudinal health information that is available within our regional and state HIEs. States are working toward a national model for health information sharing with the goal of establishing a trusted exchange framework and common agreement. This project will leverage all opportunities regionally and nationally to advance information sharing to support improved health outcomes and reduce costs.

3. The request document states that OeHI redirected \$3.3 million dollars of existing Health IT Roadmap capital construction funds from FY 2019-20 to fund this project. What is happening to the Roadmap since the funding was diverted? Will the Roadmap be continued in the future?

Fiscal Year 2021-22 Information Technology Request

Governor's Office of eHealth Innovation
Colorado Rural Connectivity Program

The priority of connecting rural providers to health information exchange and information sharing has been present explicitly and implicitly throughout Colorado's Health IT Roadmap since its development. The pandemic highlighted that connectivity to the health information exchanges is a pressing need and limited opportunity, emphasizing that rural providers are not on a level playing field with providers in other areas. To most effectively support these providers, OeHI, with the support of the eHealth Commission, recognized that funding should be directed toward the foundation of building connections both for emergency response and long-term infrastructure.

Connecting providers to the Health Information Exchanges (HIEs) is the first step to automate the electronic clinical quality measure (eCQM) process. Using the HIE infrastructure reduces provider burden by simplifying the reporting process. So by funding this rural connectivity work, we are simultaneously also making strides toward eCQM measures.

This funding will specifically be used for rural connectivity, and will not be diverted. In response to the pandemic and associated changing needs of the health care system and providers, the eHealth Commission approved the diversion of the eCQM project funds proposed by the OeHI Director with input from stakeholders. The eHealth Commission acts as a governance and advisory body to OeHI and has strategic and funding authority including redirection, if necessary.

Health IT Roadmap efforts continue forward. Originally published in 2017, the Roadmap is a necessarily evolving and agile framework based on the needs of Coloradans and health care providers. The projects and funding are reviewed and iterated upon as OeHI and the eHealth Commission continuously assess the health IT landscape of Colorado and the nation to achieve the strategic vision of the Roadmap based upon need.

4. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

See Attachment A for department response.

**FY 2021-22 IT Capital Budget Request: Rural Connectivity Program
Attachment A
Governor's Office of eHealth Innovation**

Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations.

A. What would your request for FY 2021-22 be given this potential change?

Response: Decreasing the amount of time to complete IT projects from three years to one year would significantly narrow the scope of work of the Rural Connectivity Project. For FY 2021-22, the Office of eHealth Innovation (OeHI) would only be able to onboard one-third of the providers to Colorado's Health Information Exchanges (HIEs), which would reduce the total number of proposed providers onboarded from 51 to 15 providers. Furthermore, OeHI would reduce the total dollar amount requested from \$6,498,000 to \$2,166,000. Rollover authority would allow more providers to be onboarded in the second and third project year, but the total number of providers onboarded over the three years would be reduced due to reductions in implementation timelines, which we explain later in this response. OeHI's current strategy is to onboard providers who are ready from a technical and capacity perspective first and then continue to onboard providers who need more assistance over the duration of the project. Limiting funding to one year would limit connections of rural safety-net facilities to HIEs to those providers who have the more modern electronic health records and staff to enable this process. Part of OeHI's health equity strategy is to assess provider readiness, provide technical assistance, and implement connections based on the providers readiness over time.

The proposed shift to a one-year spending authority, particularly without the option of rollover spending, would limit OeHI's ability to successfully plan and implement the Rural Connectivity Project. This funding constraint would impact Colorado's HIEs' ability to onboard rural safety-net health providers and systems to their HIE network by decreasing technical assistance timelines to accommodate the increased review and contracting timelines associated with a one-year spending authority, explained below. This is a fundamental step to increasing connectivity for rural providers to improve care coordination and reduce provider burden associated with quality measure reporting. When health care providers, particularly those in rural settings, do not have access to these critical statewide tools and resources, it creates health disparities and gaps in care that directly impact the patient.

B. What impact would this potential change have?

Response: Changing capital IT spending authority from three years to one year (three to five years is standard in the private information technology sector) would increase project costs and risks, and decrease overall project impact:

- 1) **Impact:** Federal funding match requests to Federal partners such as the Centers for Medicare and Medicaid Services (CMS) take up to 90 days to review and respond to the request. Neither OeHI nor their fiscal agent, the Department of Health Care Policy and

**FY 2021-22 IT Capital Budget Request: Rural Connectivity Program
Attachment A
Governor's Office of eHealth Innovation**

Financing (HCPF), can alter CMS's timeline. OeHI and HCPF cannot request the federal funding match until the state appropriates the funding. This reduces the implementation time of projects by 90 days, plus any additional time spent procuring and contracting for the work. Increasing the frequency of requests will force OeHI and HCPF to make tradeoffs based upon CMS capacity.

- 2) **Risk:** Limiting appropriations to one year will triple time spent contracting. There is limited flexibility in the contracting process. OeHI has limited ability to inflect the duration of the contracting timeline, which is 60-120 days for non-competitive procurements and contracts. No vendor work can take place until contracting is complete. Therefore, a one-year specing authority will have cascading effects throughout the process. Exhibit A provides a visual diagram of how implementation timelines would differ under a one-year spending authority versus the current three-year spending authority.
- 3) **Risk and Impact:** Reducing the time to draw down the appropriation limits OeHI's ability to procure services and solutions competitively through a Request for Proposal (RFP) or Invitation to Negotiate (ITN). On average, it takes nine months to draft and execute an RFP once funding is available. Combined with the required 90-day CMS review, a full year would pass during the procurement and review portion of project planning. This leaves no time for project execution under the one-year spending authority. While the Rural Connectivity work will not be utilizing an RFP or ITN, this will have significant impacts on other capital IT projects that require RFPs or ITNs. This approach could also negatively impact the ability to maximize competition and innovation.
- 4) **Cost and Risk:** To mitigate financial risk, vendors and community partners such as HIEs may increase prices to meet shortened time frames and increased project risk. Longer time to draw down funding and contract leads to more vendor options and better rates for the project.
- 5) **Impact:** Less time will result in less impact. For the Rural Connectivity Project, less time to implement this work means fewer providers will have access to critical health information, technical assistance, and analytics that is needed to improve health, reduce costs, and reduce provider burden. This decision will have the most negative consequences on the providers with fewer technological, infrastructural, and staffing resources, whose patients are in most need of more coordinated care.

C. Do you have any concerns related to this potential change?

Response: Both OeHI and the eHealth Commission, the advisory committee composed of State, private sector, and nonprofit leaders, have concerns with shifting the spending authority of capital IT projects to one year. OeHI designed the Rural Connectivity Project to connect providers based on their capacity and technical readiness. This design is based on the plan to take several

**FY 2021-22 IT Capital Budget Request: Rural Connectivity Program
Attachment A
Governor's Office of eHealth Innovation**

years. Without the option of rollover spending, OeHI and the HIEs could only connect a fraction of our rural providers, leaving behind provider organizations most in need of technical assistance and support. OeHI is also concerned about the effect this change would have on future Health IT Roadmap projects, as a reduced timeframe limits the ability to leverage existing health IT infrastructure, secure federal fund match, integrate systems and programs, and deliver on our health equity mandate to create solutions for all Coloradans.

Fiscal Year 2021-22 Information Technology Request

Labor and Employment

Modernize Unemployment Insurance Colorado Automated Tax System

SHORT PROJECT DESCRIPTION

The Colorado Department of Labor and Employment (CDLE) is requesting cash funds spending authority to modernize the Colorado Automated Tax System (CATS) employer services component of the Unemployment Insurance (UI) legacy system.

PRIORITY NUMBERS

2020062

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	3 of 15	Recommended for funding.
CDLE	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CF	\$57,776,960	\$9,422,240	\$9,500,000	\$9,500,000	\$86,199,200
Total	\$57,776,960	\$9,422,240	\$9,500,000	\$9,500,000	\$86,199,200

PROJECT STATUS

In FYs 2016-17, 2017-18, and 2018-19, CDLE was appropriated a total of \$57.8 million cash funds spending authority for the migration and modernization of the legacy UI system. Beginning in 2016, CDLE migrated the 30-year old mainframe Colorado Unemployment Benefits System (CUBS) claimant services component, which was formally in COBOL code base, and CATS, which was formally in ADABAS Natural Code base, off of the mainframe and converted the code into Java. CDLE completed this migration effort in March 2018. In 2018, CDLE outlined a plan to the Joint Technology Committee to leave CATS in Java code on servers at eFort, while replacing and modernizing CUBS using Amazon Web Services. The committee approved a \$6.3 million cash funds spending authority for this plan. All of the spending authority that has been approved by the General Assembly thus far has been spent or is encumbered.

The modernized UI benefit system, now referred to as MyUI+, was originally scheduled to go live in May 2020. However, due to the COVID-19 pandemic, the department shifted all available resources to focus on addressing the increase in UI claims and implementing the many new UI related provisions of the federal Coronavirus Aid, Relief, and Economic Security (CARES) Act. The department expects that MyUI+ will go live within the first two weeks of January 2021, pending any further federal stimulus action.

PROJECT DESCRIPTION

The department is requesting cash funds spending authority to complete the effort to modernize the CATS employer services component of the UI system. With prior funding, the department was able to migrate CATS from ADABAS Natural code base into Java; however, this migration effort did not update or upgrade the database layer, only the language. The department anticipates purchasing a commercial off-the-shelf (COTS) product that will provide flexibility to customize in order to comply with state law and regulations, and allow for needed integrations to support a fully functioning, end-to-end UI system. The department plans to implement this project using a fully agile approach.

Fiscal Year 2021-22 Information Technology Request

Labor and Employment

Modernize Unemployment Insurance Colorado Automated Tax System

PROJECT JUSTIFICATION

The underlying CATS database is still structured linearly like ADATABASE, not dynamically like modern databases. According to the department, challenges with this include:

- its ability to make changes that are necessitated by state and federal legislation and regulation;
- new dynamic data requests and reporting; and
- access to resources that can maintain or change the existing system.

There are several individuals at the Governor's Office of Information Technology (OIT) who are responsible for maintaining the current CATS system. Because of the relationship between the code in Java and the database structure that mimics ADABAS, CDLE states that IT professionals with these two different skill sets are increasingly hard to find.

After this project and the MyUI+ modernization project are completed, the UI system will be fully integrated and provide better customer service, self-service capability, and more real time information and problem solving capabilities for employers and UI claimants.

COST-BENEFIT ANALYSIS

The department has estimated annual cost savings of \$1.45 million based on a reduction in staff costs and network and mainframe costs, which over the course of 20 years at a discount rate of 1.20 percent, the department estimates the net present value of the project to be \$577,760.

The department has estimated that by being able to perform the complex employer annual experience rating calculations, implement incremental rate changes within the new system, and maintain system calculation, the department anticipates saving at least 40 hours per week in staff time.

PROJECT COST INFORMATION

Within the original budget request document, the department had estimated the following costs for the project:

- data conversion and modernization vendor: \$20 million
- independent verification and validation (IV&V): \$1.5 million
- disaster recovery: \$500,000
- data storage: \$600,000
- IT professional services: \$4.3 million
- project and contract management: \$1.5 million

CASH FUNDS

The department proposes using the Employment and Training Technology Fund to fund this project (Section 8-77-109 (2)(a.9), C.R.S.). When the balance of the UI Trust Fund is greater than \$100 million, 0.0004 assessed against each employer's UI premium, up to \$10 million annually, is deposited into the Employment and Training Technology Fund.

The actual ending fund balance for the Employment and Training Technology Fund for FY 2019-20 was \$463,249 and the fund is projected to have a \$0 fund balance for FY 2020-21 and ongoing since payments into the fund have been suspended since the UI Trust Fund is currently insolvent. The department is currently pursuing legislation that would remove limitations on the ability to credit existing UI revenues to the Employment and Training Technology Fund without an increase in revenue to CDLE. However, the department has not identified a different source of funds to use if that legislation is not approved.

PROJECT RESEARCH

As of November 2020, the department was reviewing responses it had received to a request for information (RFI).

ADDITIONAL PROJECT INFORMATION

N/A

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Labor and Employment

Modernize Unemployment Insurance Colorado Automated Tax System

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	July 2021	September 2021
Implementation	September 2021	October 2023
Testing	November 2023	January 2024
Closing	February 2024	June 2024

QUESTIONS

The department provided the following information in response to JTC staff questions.

1. What steps are being taken with the overall modernization project to avoid “vendor lock-in” where CDLE is stuck with the selected vendor(s)?

CDLE has a myriad of constructs from full vendor support to full OIT support, and everything in between. The department is strategically planning to go with vendor support as a major tenet for future modernization of systems, as the previous model where OIT staff has had to wear multiple hats to support CDLE’s broad base of applications to meet our varied missions has been inefficient. This is a strategy that has been vetted by and is supported by OIT leadership. However, note that as we look to go live with MyUI+, the current discussions are around the most efficient way to maintain and enhance the system going forward. OIT and CDLE are working together to determine if that should be full vendor support, or a hybrid of vendor and OIT support. That decision has not been made at this time, but vendor lock-in is at the forefront of mind. Note that a proprietary application of this nature, where there is a deep and complex set of rules that drive the program, is a difficult “animal” to transfer responsibility for, particularly in the early stages of its existence.

2. How much is the estimated ongoing annual operating cost of the new modernized CATS?

That has not yet been finalized. The agile approach will allow for a better estimate as the system is developed.

3. Questions related to the \$500,000 disaster recovery and \$600,000 data storage cost estimates:

a. Since most cloud solutions provide disaster recovery or backup services in their subscription fees, please provide additional details to justify the \$500,000 in cash funds spending authority needed for the disaster recovery.

Development, Test, and Production needs vary in size when new data elements are added. The disaster recovery costs increase when the size of your storage increases. Maintaining all three environments during each agile phase is likely going to require increases in recovery costs. Depending on the amount of data required to be retained from the “old” system, the disaster recovery needs will expand.

b. Since most cloud solutions allow their customers to access their servers, please explain the need to procure 12 virtual servers for \$600,000. Please also explain the cost estimate since virtual servers should cost less than physical servers.

The word “procure” should have been to expand for the Development, Test, and Production environments due to the needs in size when new code is added. Test environments utilize millions of records with large demographic elements which require expansion of cores in the environment.

4. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

CDLE strongly prefers keeping the three year spending authority cycle for IT Capital appropriations, rather than changing it to one year. From our experience (both negative and positive) with complex IT projects, maintaining the multi-year flexibility of

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spending authority is critical to current efforts to improve the agility and responsiveness of such projects.

Given that the State is looking to move toward a more agile approach to implementing these large scale projects, having the spending authority is critical to the ongoing planning and implementation of the critical needs of these programmatic technologies. Agile prescribes to building a minimum viable product (MVP), which when putting a widget out to market is advantageous to determining the value proposition. However, large scale technology projects associated with already developed, complex missions, have less room for launching a MVP and more need for a well developed, end to end service. That does not preclude the State from an Agile methodology, but does speak to the need for the funding to look beyond the MVP concept.

Moving to a one year spending authority structure would introduce an immense amount of risk to something that is already a complex and delicate process. Having a three year outlook on a project's budget allows the project team to fully scope out every variable, and ensure a solid foundation for success. This also empowers the department to guarantee funding to our vendors for more than a year at a time, which reduces contracting complexity and puts the state in a more competitive position. It is CDLE's view that adherence to the agile methodology in project management provides the checks and balances necessary to protect the State's investment on IT Capital projects, and using the JBC process to manage this level of detail would be detrimental to future technology builds.

Fiscal Year 2021-22 Information Technology Request

Human Services Behavioral Health Infrastructure Investments

SHORT PROJECT DESCRIPTION

The Colorado Department of Human Services (CDHS) Office of Behavioral Health (OBH) is requesting one-time funding of \$10.5 million state funds and 9.0 temporary FTE to make several improvements to Colorado's behavioral health system.

PRIORITY NUMBERS

2020064

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	4 of 15	Recommended for funding.
DHS	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$10,480,017	\$0	\$0	\$10,480,017
Total	\$0	\$10,480,017	\$0	\$0	\$10,480,017

PROJECT STATUS

This is a new, never-before-requested project.

Fiscal Year 2021-22 Information Technology Request

Human Services

Behavioral Health Infrastructure Investments

PROJECT DESCRIPTION

According to the department, the goals of this project are to improve the state's behavioral health system by: improving regulatory compliance, decreasing duplicative processes between state agencies, decreasing the administrative burden on behavioral health care providers, consolidating data collection, and improving access to crisis services.

This project consists of the following six components, ranked in priority order by the department:

1. Consolidated behavioral health data collection

The department proposes aligning data collection and reporting infrastructure into streamlined and interoperable systems between OBH and the Colorado Department of Health Care Policy and Financing (HCPF). This will reduce the time spent by behavioral health care providers on duplicative or redundant processes that are currently performed in multiple systems used by different state agencies.

(Note: The department intends the work outlined in this component of the request to be paired with HCPF's operating budget request R-23 to make enhancements to the Medicaid Management Information System (MMIS) and data analytics.)

2. Virtual crisis telehealth app

The department proposes developing and deploying a downloadable app that allows users to access an on-demand telehealth behavioral health visit with a clinician. Users would also be able to schedule routine behavioral health services with providers included in a searchable directory in the app.

3. HIE investments

The department proposes investing in a Health Information Exchange (HIE) for behavioral health providers. This will allow providers to more efficiently coordinate care across multiple treatment providers and gain access to real time information that allow providers to make better treatment decisions and client interventions.

4. Bed capacity tracking system

The department proposes developing a system to track real-time behavioral health care capacity, including withdrawal management, residential beds, crisis beds, and opioid treatment capacity. This system will allow behavioral health care providers to quickly identify available residential, inpatient, crisis, and respite beds, and identify locations for opioid treatment services. The system will also support law enforcement inpatient drop-offs.

5. Virtual training system

The department proposes creating a virtual training system that will allow behavioral health care providers to access relevant resources for various types of training. The department suggests that this will decrease provider burden, expand workforce capacity, and build workforce competencies.

6. Capacity-building grants

The department proposes establishing a mini-grant program to provide behavioral health care providers with access to health IT infrastructure that will support access to data reporting and billing, telehealth platforms, and electronic health records. The department has assumed that 40 grantees may be issued grants of approximately \$6,250 each. The grants will be used for telecommunications hardware, professional installation and configuration, minor building improvements, and labor costs.

PROJECT JUSTIFICATION

According to Mental Health America, Colorado ranks in the bottom half of states on various measures of prevalence of mental illness and access to care for adults and children. In April 2019, Governor Polis directed CDHS to create and lead the Colorado Behavioral Health Task Force with the mission of evaluating the developing a roadmap to improve the current behavioral health system in the state. Information about the task force, including reports and recommendations produced by the task force, can be found here: <https://www.colorado.gov/pacific/cdhs/behavioral-health-reform>.

This project is intended to implement several recommendations from the task force related to behavioral health telehealth and IT infrastructure.

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Human Services Behavioral Health Infrastructure Investments

COST-BENEFIT ANALYSIS

The department did not quantify the cost savings as required by House Bill 15-1266, but believes that the current processes result in inefficiencies and duplicative reporting, among a large number of other unquantifiable benefits.

PROJECT COST INFORMATION

The department has provided the following cost estimates for each of the six project components:

1. Consolidated behavioral health data collection: \$2,400,000
2. Virtual crisis telehealth app: \$2,318,356
3. HIE investments: \$2,440,000
4. Bed capacity tracking system: \$300,000
5. Virtual training system: \$1,000,000
6. Capacity-building grants: \$250,000

Other project cost estimates include:

- 9.0 temporary FTE: \$1,022,385
- Independent Verification and Validation: \$250,000
- Five percent project contingency: \$499,276

CASH FUNDS

N/A

PROJECT RESEARCH

The department worked with technology consultants, technology-savvy business partners, the Governor's Office of Information Technology, and the Governor's Office of eHealth Innovation, and has used its own experience on recent IT projects in order to develop the estimated costs for this project. The department has not issued a request for information or conducted other formal market research.

ADDITIONAL PROJECT INFORMATION

N/A

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	February 2021	July 2021
Implementation	July 2021	June 2023
Testing	July 2021	June 2023
Closing	July 2022	June 2023

QUESTIONS

The department provided the following information in response to JTC staff questions.

1. How would this project interact with other state and federal telehealth efforts, such as the \$7.9 million that the state received from the Centers for Medicaid & Medicare Services in COVID-19 emergency funding for telemedicine and other health care projects, such as the Colorado Crisis System?

Office of eHealth Innovation: To date, the Office of eHealth Innovation has implemented \$4.4 million in individual telemedicine projects across the state, regional learning collaboratives, and conducted an evaluation on the use and need for telemedicine.

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Human Services

Behavioral Health Infrastructure Investments

The remaining \$3.5 million was leveraged to onboard new providers to the HIEs and fund analytics and data projects to support the public health response effort. This work would build upon these earlier learnings and investments. To date, the Colorado Crisis system/line did not receive any of these funds and does not have an established telemedicine or telebehavioral health provider. These funds would go toward establishing a tele-behavioral/telehealth health platform with the crisis providers, mapping out workflows, and developing education for providers and patients.

Health Care Policy and Financing: There is no overlap with COVID emergency telemedicine funding which was one-time, and focused on Medicaid providers, not the Colorado Crisis system. Recent changes to Federal and state Medicaid policy support telebehavioral health as an allowable/billable modality for crisis intervention services for Medicaid members.

Office of Behavioral Health: This project to expand telehealth capabilities would be integrated into the operational processes of the Colorado Crisis Services System, to expand access and improve the cost-effectiveness of the system overall. Consideration for leveraging existing platforms and infrastructure will be coordinated with both HCPF and the Office of eHealth Innovation.

2. How much does OBH anticipate that telehealth can fill the need for increased access to care for behavioral health issues versus the need for a greater bed capacity? Are there enough beds to fill the needs for people who need more intensive care after an initial interaction with the telehealth services?

OBH does not anticipate that increased use of telehealth will reduce the need for crisis stabilization beds. Telehealth will provide easier (more efficient and cost-effective) access to clients throughout the state, particularly those in rural and frontier communities. Telehealth will support improved screening and assessment to help determine whether an individual should be referred to an in-person crisis facility or higher level of care. Outcomes from a crisis intervention by a mobile team or at a Walk-in center reveal that under 14% of individuals are referred to a higher level of care, such as a Crisis Stabilization Unit, Acute Treatment Unit, Residential Child Care Facility or a psychiatric hospital. Greater than 70% of individuals return home with a safety plan or a referral to outpatient behavioral healthcare services.

However, many individuals present to acute care hospital emergency departments when experiencing a behavioral health crisis. It is reasonable to assert that crisis intervention through telehealth may divert some amount of these ED visits to Crisis facilities and de-escalate others to mitigate the need for an in-person emergency visit all together.

There is no data at this time that differentiates an in-person response from a telehealth intervention.

3. The Governor's Office of eHealth Innovation (OeHI) is requesting funding for a Colorado Rural Connectivity Program. One part of the request involves providing funding to providers in rural areas of the state to access Health Information Exchanges (HIEs). Does OBH anticipate coordinating with OeHI on this effort if both projects are funded?

Yes. We are already coordinating with OeHI around several projects and would continue to do so in ensuring access to broadband and telehealth service delivery.

4. What steps does OBH plan to take in order to avoid vendor lock-in on these various systems?

OBH will set up a Request For Proposals (RFP) scoring methodology that rewards open source solutions that promote customer ownership and reduces scores on solutions that are proprietary, invoke heavy on-going license fees and make future changes/expansion difficult.

5. What are the estimated ongoing annual operating expenses for each of the project components?

The current project timeline estimates that OBH will not require new general funds for operating expenses and any necessary user licenses or subscription fees would be considered within the procurement to stay within the budget for the project. OBH intends to achieve efficiencies that allow for existing FTE to discontinue unnecessary tasks that are not currently automated. Many of the potential ongoing operational funding will be largely offset by efficiencies and potential cost savings.

6. Please describe how the bed capacity tracking system component of this request corresponds to the capacity registry that is being developed pursuant to HB 19-1287.

HB 20-1391 removed the annual appropriation to the capacity tracking system (also known as the capacity registry) after OBH had completed our planning requirements for the system. HB 20-1391 preserved the direction for OBH to move forward with the

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capacity tracking by replacing the implementation date with “subject to available appropriations...” OBH is moving forward with implementing a modified and scaled-back version of the bed tracking system by leveraging the existing CDPHE Emergency Management System used by law enforcement to track available beds. This system requires manual updating by providers which will have compliance challenges and will not become a public facing tool for providers to identify referrals and resources for behavioral health beds as was originally intended. This is a scaled back version requiring manual processes and inputs that would be enhanced and made more useful to the general public through a Fiscal Year 20-21 telehealth budget request included in the Governor’s budget, subject to final JBC approval of the budget.

7. Do you envision that the virtual crisis telehealth app will be free for users and providers or will there be a fee associated with signing up or using the app for either party?

The department intends to make this app free of charge to Coloradans in need of a behavioral health crisis intervention. The use of this application will be part of our crisis system and staffed by identified providers that are trained in crisis assessments. Providers may bill for services rendered through Medicaid, Commercial Insurance and the Office of Behavioral Health for reimbursable services.

8. Regarding the capacity-building mini-grants, does the department currently have the statutory authority to create, fund, and administer this new grant program? Or is the department planning to ask for corresponding legislation on this portion?

The Office of Behavioral Health currently administers multiple grant programs and does not anticipate any necessary statutory changes.

9. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

See Attachment A for department response.

**FY 2021-22 IT Capital Budget Request: Behavioral Health Infrastructure Investments
Attachment A
Colorado Department of Human Services
Office of Behavioral Health**

Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations.

A. What would your request for FY 2021-22 be given this potential change?

Response: In general, OBH has been consulting with Colorado Digital Services and the Office of eHealth Innovation to leverage existing infrastructure and to decrease risk of failure for large scale government IT projects. Without adjustments to the current procurement process to shorten the timeframes for IT projects a vast amount of time for any new project is spent on procurement in the course of a fiscal year. Below is a table that considers the current procurement process and timelines for implementation of portions of any new technology builds once the procurement process is completed in a single fiscal year. Additionally, OBH anticipates that only 3 of the outlined components of the request could be completed in a single year. OBH would be reliant on our existing budget, contract, and data management staff and the projects outlined below are the prioritized projects that OBH could manage in a single year. Adding a second year for roll out of the projects would allow OBH to fully implement all of the requested projects and ensure that the first year projects are able to be fully realized.

Project:	Requested amount:	Short-Term Action Steps:
<p>1) Virtual Crisis Telehealth App to enable Coloradans to immediately connect with a virtual crisis clinician</p> <ul style="list-style-type: none"> ● On-demand virtual crisis services delivered via tele-behavioral health to connect Coloradans to real-time triage and crisis interventions via a downloadable app. ● Platform would also enable scheduling of follow-up and coordination of services with telehealth clinicians to ensure coordinated ongoing care with local physical health and behavioral health providers in 	<p>\$2,318,356</p>	<ol style="list-style-type: none"> 1. OBH/eHealth Innovation to begin policy analysis in January 2021 to understand the existing telehealth infrastructure behavioral health providers have in place, and opportunities to leverage existing platforms and providers. OBH will also leverage our Behavioral Health Needs Assessment to prioritize rural gaps in care. 2. OBH to analyze current crisis provider network overlap with HCPF to establish an aligned payment model. 3. OBH to issue a procurement July 2021. 4. Vendor selection and Contracting to be finalized by December 2021. 5. Platform build completed and initial

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<p>the patient’s community.</p> <p>Current state: Many providers are using telehealth and this project would leverage existing infrastructure while giving Coloradans access to a downloadable app in order to access a crisis clinician.</p>		<p>onboarding for providers completed by June 2022.</p> <p>A statewide virtual crisis platform could be completed within a year. Onboarding and training for providers would need to continue into the next fiscal year. Additionally, any iterative enhancements, technical modifications to ensure a smooth roll out would also need to continue into the next fiscal year.</p>
<p>2) Consolidated Behavioral Health Data collection.</p> <ul style="list-style-type: none"> ● Consolidate administrative and clinical data collection to reduce provider burden and increase financial transparency and analysis between Medicaid, commercial insurance and other state behavioral health funding. ● Improve BHA ability to develop payment methodologies, report on quality and outcomes of services. ● Integration with HCPF systems including claims payment system (MMIS), the eligibility determination system (CBMS), and the business data warehouse (e.g. HCPF’s BIDM) <p>Current State: Providers submit clinical data using a CCAR and/or DACODS to OBH, invoices and copies of claims to OBH, Claims to HCPF, and report to several other state agencies.</p>	<p>\$2,400,000</p>	<ol style="list-style-type: none"> 1. OBH/eHealth Innovation drafting RFI to understand potential solutions that align with our business requirements. 2. OBH to draft an <i>invitation to negotiate</i> in order to procure vendors. Our anticipated date to begin this process is March of 2021 in an effort to complete vendor selection by August 2021. This step is assuming a drafted solicitation that could be issued as soon as funding is made available. 3. OBH will complete contracting in October 2021, with a prioritized procurement path that highlights a minimum viable product delivery approach and uses a human-centered design to meet provider needs by June 2022. Iterative enhancements, technical modifications and onboarding of providers would be continued into the next fiscal year to ensure a useful and viable product for users.
<p>3) Health Information Exchange</p>	<p>\$2,440,000</p>	<ol style="list-style-type: none"> 1. HCPF/OBH/e-Health to Identify any opportunity to leverage federal

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<p>Investment</p> <ul style="list-style-type: none"> ● Invest in HIE for behavioral health providers to improve outcomes for clients. ● HIE utilizes real time alerts, allowing providers to intervene with clients that may be in crisis and supports providers in coordinating care and reducing provider burden through access to real-time information in order to support treatment decisions and client interventions ● Consider HIE access to include crisis providers, EMS, co-responder clinicians and jails to support diversion efforts. <p>Current State: Many providers receive data from the HIEs but do not send data due to limitations around privacy. HHS/SAMHSA is changing rules and policy analysis is underway. Sending data to the HIEs enriches information providers will have the ability to improve care coordination and reduce administrative steps to coordinate care for clients. Several jails are using HIE to improve care coordination for clients being booked into jail.</p> <p>An OeHI evaluation found significant cost savings, improved care coordination, fewer ED tests, and shorter lengths of stay.</p>		<p>match for overlapping Medicaid providers and will work with HCPF to submit any necessary request to CMS by Spring of 2021.</p> <ol style="list-style-type: none"> 2. OBH/eHealth Innovation submitted a planning grant 12/16/2020 to support policy analysis for sharing behavioral health data across providers. 3. E-Health/OBH working on state health information consent policies. 4. OBH/eHealth Innovation/HCPF to plan procurement. 5. A procurement process would be issued in July 2021 with contracting finalized in November of 2021. Provider connections to the HIEs would begin on a rolling basis beginning in January 2022 and continue through June 2022. <p>OBH anticipates that the majority of large providers could be onboarded to HIE within a single fiscal year but many smaller providers would need additional technical assistance and would likely continue into the next fiscal year to scale utilization of Health Information Exchange by behavioral health providers.</p>
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**FY 2021-22 IT Capital Budget Request: Behavioral Health Infrastructure Investments
Attachment A
Colorado Department of Human Services
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B. What impact would this potential change have?

Response: The procurement process, at minimum, is 4-6 months from solicitation to contract execution. The OBH has been consulting with Colorado Digital Services around best practices for government IT projects and a critical component of development includes Agile methodology into its IT development process. This process means that once a contract is in place work is planned and completed in two week cycles and functional software is tested and used in order to ensure a viable product. This process ensures that the work is owned and understood by the state agency procuring the solution and that projects are within budget. Additionally, large projects are broken down into smaller sub-projects using simple modular approaches.

With a shortened spending authority, the vast majority of projects would have a 6-8 month window to achieve a finalized product. Another best practice identified includes user centered design meaning that the product is used and tested by the individuals that the product is intended. Integrating users into the design process will allow for more functional and useful IT products and integrating end users into an already compacted timeframe would be challenging.

The budget restriction and shortened spending term would not only impede the OBH's ability to strategically procure, select and award for IT capital appropriations, but disrupt the Agile design process as well. Having a three year spending authority aligns with seamless continuation of product development and backlog integration without having the start and stops that a single year funding stream would interject.

C. Do you have any concerns related to this potential change?

Response: A shortened spending term would introduce budget insecurity, and create pauses and breaks caused by the term limit of the spending authority. This would negatively impact the OBH's ability to implement both short and long range IT product development and IT acquisition planning. Any IT product is going to need to be refined and iteratively enhanced to ensure usability by providers. Compressing the procurement and product build into a single year would impact the utility and iterative enhancements that ensure state investments are useful and appropriately planned and maintained.

Fiscal Year 2021-22 Information Technology Request

Colorado State University
Upgrade Network Hardware

SHORT PROJECT DESCRIPTION

Colorado State University – Fort Collins (CSU) is requesting state funds and cash funds spending authority for phase one of a three-phase project to upgrade out-of-date networking hardware.

PRIORITY NUMBERS

2020067

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	5 of 15	Not recommended for funding.
CCHE	1 of 11	
CSU	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$541,000	\$627,300	\$2,033,880	\$3,202,180
CF	\$0	\$219,000	\$476,700	\$678,300	\$1,374,000
Total	\$0	\$760,000	\$1,104,000	\$2,712,180	\$4,576,180

PROJECT STATUS

This is the third request for funding. CSU requested, but did not receive, funding for this project in FY 2019-20 and FY 2020-21.

PROJECT DESCRIPTION

CSU is requesting state funds and cash funds spending authority to upgrade out-of-date networking hardware. As part of phase one of this project, it is anticipated that at least 165 edge switches will be replaced.

Phases two and three, which CSU anticipates requesting funding for in future fiscal years, will involve replacing additional edge switches, two core switches, two border routers, and two firewalls.

PROJECT JUSTIFICATION

According to CSU, the new edge switches will provide a significant increase in capacity, from 100 megabyte to 1 gigabyte; provide Power over Ethernet (PoE) capability that is required for connection of various life and safety devices, including new video surveillance systems; improve the IT security of users since this project will begin to replace the approximately 260 edge switches that are beyond end-of-life and no longer receiving necessary patches and upgrades; and accommodate two-factor authentication.

Additionally, the new edge switches will integrate with CSU's central, automated edge switch management, control, administration, and IT security configuration environment. This central system will enable all edge switches to be upgraded to the latest software and firmware configurations, maintain the latest IT security protections, and monitor patterns that may indicate an IT security issue.

COST-BENEFIT ANALYSIS

CSU was unable to quantify cost savings as required by House Bill 15-1266, but states that by receiving state funding for the first three phases of this project, CSU will then be able to achieve self-sufficiency in supporting its seven-year upgrade cycle for its network equipment, including edge switches, beginning in year four.

Fiscal Year 2021-22 Information Technology Request

Colorado State University
Upgrade Network Hardware

PROJECT COST INFORMATION

The edge switches that will be replaced during phase one of this project are estimated to cost approximately \$4,600 each, which includes a discount of 3 percent due to the volume of edge switches being purchased.

CASH FUNDS

The cash funds that CSU is proposing to use for this project are comprised about equally of student technology fees, Provost funding, and departmental funding. CSU currently has two types of student technology fees: college-specific fees that range from \$40 per semester to \$170 per semester, with most being about \$100 per semester; and the central University Technology Fee, which is currently \$25 per semester. The University Technology Fee is expected to increase to \$30 per semester to help fund part of future phases of this project.

PROJECT RESEARCH

CSU states that according to a survey a peer institutions, the average replacement cycle for edge switches range from five to seven years. CSU has adopted a seven-year replacement cycle to balance cost versus functionality.

ADDITIONAL PROJECT INFORMATION

N/A

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	June 2021	August 2021
Implementation	August 2021	June 2024
Testing	August 2021	June 2024
Closing	August 2023	June 2024

QUESTIONS

The institution provided the following information in response to JTC staff questions.

1. Please provide an explanation as to why this funding request meets the statutory requirements in Section 2-3-1701 (2)(b), C.R.S., which provides that the definition of “information technology” for the purposes of budget requests to be considered by the Joint Technology Committee “does not mean post-implementation support, hardware life-cycle replacement, or routine maintenance.”

Please excuse our imprecise language where we referred to “replacement,” and instead we should have cited “upgrades” in all cases. Indeed, this request is not for life-cycle replacement. Rather, it is for a holistic upgrade of our network to the next generation of technology, supporting higher speeds (a factor of 10X in speed), as well as implementing smart technology in the core, especially supporting real-time IT security upgrades in the core devices’ configurations that will be fed from the global internet’s IT security infrastructure in near real time. Thus, this request is for needed new technology that will displace extant technology, and is not just a “life-cycle replacement” of existing hardware. In fact, we believe this request falls under the following portion of the statute: “(2.5)(a) “Information technology budget request” means a budget request from a state agency or state institution of higher education for the installation, development, or upgrade of information technology”. The specific upgrades are:

Core infrastructure:

- Upgrade needed to 10X current capacity – Our existing core infrastructure is 10 gig (ten gigabits per second, or ten billion bits per second). We have over four hundred buildings on our main, south, and foothills campuses, and we currently connect dozens of buildings at 10 gig; thus the core infrastructure is a severe point of congestion, needing a 10X upgrade in speed/capacity to

Fiscal Year 2021-22 Information Technology Request

Colorado State University Upgrade Network Hardware

100 gig in the core devices.

- Current IT security capability – We need to upgrade the core infrastructure to smart, adaptive, real-time IT security configuration changes that will derive from the global internet's IT security infrastructure. Our current IT security configurations in our current core devices are static – we can change the IT security configurations only manually, and thus cannot react fast enough to catch the dramatically increasing number of threats in the global internet environment. This new capability is needed to react in real time to IT Security threats and vulnerabilities that will provide much greater needed protection for our network and our users.

Edge switch upgrades:

- Capacity upgrade – Upgrade is needed to 10X the current capacity – our existing edge switches provide 100 meg (megabits per second or one million bits per second) to users, whereas our current standard for edge switches is 1 gig to the user. Simply put, users need a 1 gig interface to exchange existing and increasing number and size of files required for education and research. We have observed that files used for research of size one terabyte (1012 bytes) take more than a week to transmit. Files much larger than this cannot be transmitted at all, and smaller files transmitted through a slow 1 meg interface impede the quality and quantity of research and education that must be conducted in today's environment. We have fallen behind in the upgrade of our network, and this funding request will allow us to catch up, achieve steady-state upgrades, and meet today's and tomorrow's increasing needs.

- Power over Ethernet (PoE) upgrades – The existing switches are not capable of providing PoE that is required for connection of life and safety devices. The most critical need here is a backlog of about almost one hundred video surveillance systems that have been approved by the Public Safety Team, and need new switches that provide PoE interfaces. Other life and safety devices needing PoE are also in the queue waiting for switch upgrades.

- IT Security upgrades – Existing switches that are beyond end of life no longer receive patches and upgrades required to keep up with current IT security needs, presenting vulnerabilities to users connected to them.

- Two-factor authentication (2FA) – Existing switches that need upgrading do not accommodate two-factor authentication. It is critical for us to implement and sustain 2FA in the edge switches in front of our critical systems, including our Human Resources Management System, our Financial Management System, our Student Information System, our Research Management Systems, and other systems as may emerge over time needing this capability. We have already implemented the Duo 2FA system for our off-campus access. We need to implement 2FA in front of all of our critical systems, as observations from other higher education institutions which have implemented 2FA comprehensively indicate that this has provided almost perfect protection of their systems against phishing, malware, and ransomware, our greatest IT security risk today.

- Central management, administration, and IT security configurations of edge switches – Older switches are not capable of being fully integrated into our central, automated edge switch management, control, administration and IT security configuration environment. This central control system provides the capability to upgrade all edge switches to the latest software and firmware configurations, maintaining the latest IT security protections, including Network Access Control and Software Defined Networking. The central systems also allows monitoring of edge switches and traffic patterns that may indicate an IT security issue on user devices (computers, printers, FAX machines, etc.). We must upgrade old switches to fit into this environment.

2. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

CSU Fort Collins doesn't have concerns with the change and it won't change our FY 21-22 IT request. We do not feel that it would be a problem to encumber funds in 1 year rather than 3 years for any IT appropriations we might get from the state.

Fiscal Year 2021-22 Information Technology Request

Colorado Northwestern Community College Computer and Network Upgrades

SHORT PROJECT DESCRIPTION

Colorado Northwestern Community College (CNCC) is requesting state funds and cash funds spending authority to upgrade the college's network capabilities with a new fiber optic network and strengthen the existing network to become dedicated to security needs.

PRIORITY NUMBERS

2021021

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	6 of 15	Not recommended for funding.
CCHE	2 of 11	
CNCC	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$1,746,412	\$0	\$0	\$1,746,412
CF	\$0	\$174,641	\$0	\$0	\$174,641
Total	\$0	\$1,921,053	\$0	\$0	\$1,921,053

PROJECT STATUS

This request is similar to a request submitted by CNCC for FY 2020-21, which was not appropriated funding. However, this year's request is more focused on improving and upgrading the college's network capabilities.

PROJECT DESCRIPTION

CNCC is requesting state funds and cash fund spending authority to run a new optical fiber ring around the campus and back to the centralized campus data center with 10 gigabyte capabilities. The project also involves purchasing two new servers that will replace failing equipment and six computers that will be used directly with the new servers and equipment.

Additionally, 20 switches and uninterruptible power supply (UPS) battery backups will be purchased to replace failing switches on CNCC's existing optical fiber network, so that the network can be transitioned to being used exclusively for the college's security systems. This transition will allow the college to update campus security cameras and door systems in the future.

Finally, the college proposes purchasing 180 new IP phones to replace current phone models that have failed during power outages, are not properly powered over Ethernet, and are becoming unable to accept calls from off campus.

Fiscal Year 2021-22 Information Technology Request

Colorado Northwestern Community College Computer and Network Upgrades

PROJECT JUSTIFICATION

According to CNCC, their existing fiber network is aging and cannot handle the bandwidth needed by students, staff, and faculty, with some buildings on the campus being limited to under 100 megabyte data transfer speeds to the campus's main datacenter.

TECHNOLOGY AUDITS. This request is based on the findings from an audit of CNCC's existing IT equipment and infrastructure that was performed by a technology-engineering firm and a technology status review that was performed by the Colorado Community College System's Chief Information Officer.

COVID-19 RESPONSE. According to the college, the need to support remote and hybrid course delivery has strained the college's current IT infrastructure. Only certain classrooms on campus are capable of delivering online classes and campus buildings are limited to no more than two overlapped classes that use technology for hybrid course delivery because of limited bandwidth.

COST-BENEFIT ANALYSIS

CNCC was unable to quantify cost savings as required by House Bill 15-1266, but states that this project will allow the college to reduce downtimes caused by equipment failures, slow computers, and slow or disconnected networks.

PROJECT COST INFORMATION

CNCC has estimated the following costs for this project:

- Professional services: \$16,800
- Corning components: \$352,715.91
- Corning software: \$50,000
- Remote power: \$49,084.60
- TR material: \$73,209.22
- Backbone fiber: \$79,100.38
- Installation: \$151,512.46*
- Training: \$15,000
- Fiber maintenance equipment and supplies: \$170,000
- Two new servers: \$28,000
- Six computers to be used directly with the new servers and equipment: \$24,000
- 20 switches: \$60,000
- UPS battery backups to accompany the switches: \$110,000
- 180 IP phones: \$72,000

*installation costs can be up to 47 percent higher than in front range markets because of CNCC's remote location

CASH FUNDS

The college is proposing to use unrestricted cash reserves to provide the 10 percent cash fund contribution for the project. The college will be supported by the Rangely Junior College District Board, which jointly stewards the college's cash reserves held by the board for the benefit of the students and CNCC.

CNCC currently charges a student technology fee of \$3.76 per credit hour. However, the revenue from this fee is dedicated to paying for equipment and software needed to support student internet and Wi-Fi. The college will not use any of these student technology fees to fund the cash fund portion of this project.

PROJECT RESEARCH

Project costs were estimated based on an independent fiber optic network audit that CNCC funded, using previous purchase information and market research from equipment suppliers, and current rates for optical fiber cutting and fusing equipment.

ADDITIONAL PROJECT INFORMATION

N/A

Fiscal Year 2021-22 Information Technology Request

Colorado Northwestern Community College Computer and Network Upgrades

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	October 2019	July 2021
Implementation	July 2021	June 2022
Testing	July 2021	June 2022
Closing	June 2022	June 2022

QUESTIONS

The institution provided the following information in response to JTC staff questions.

1. Please provide an explanation as to why this funding request meets the statutory requirements in Section 2-3-1701 (2)(b), C.R.S., which provides that the definition of “information technology” for the purposes of budget requests to be considered by the Joint Technology Committee “does not mean post-implementation support, hardware life-cycle replacement, or routine maintenance.”

CNCC's FY22 IT Capital Budget request provides for the complete overhaul and replacement of the College's datacenter servers, switches and installing a new fiber ring that connects multiple buildings back to the data center. CNCC's current infrastructure is in some cases over twenty years old, failing, and performing with unacceptable down time. CNCC's funding request:

- Provides training and equipment necessary to repair fiber breaks.
- Does not provide for future equipment licenses, as the College is actively replacing this type of hardware.
- Will not provide for routine maintenance or hardware life-cycle replacement.
- Replaces the current multimode fiber ring with single mode fiber that will be capable of 10+ gigabit speeds for the foreseeable future.

2. If only partial funding was available for this project, what would be the most critical component(s) and associated cost(s)? Or does the project need to be funded in its entirety as requested in order to be fully functional?

Partial funding would require CNCC to scale back this project and would hamper future projects and bandwidth needs. Most or all funding will be used to update CNCC's datacenter and fiber network to the extent that funding allows. While not optimal, CNCC has structured our proposal in such a way as to provide substantial improvements to our campus at certain price breaks. For example, we can prioritize high volume classrooms or buildings while delaying infrastructure upgrades to less well used buildings. This would mean that not all classrooms or buildings would be capable of gigabit speed, which would limit the College's ability to offer online/hybrid learning. To achieve the functionality specified in our recent IT Audits, the project should be funded in its entirety.

3. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

CNCC understands that our State is in a period of rapid change and facing unprecedented challenges. We will do everything within our power to comply with whatever allocation/spending rules that the Committee or the State may require.

With that said, the proposed changes do raise some concerns with CNCC's ability to fully comply with the proposed change to limit expenditures to one (1) year. These are driven by:

- Computer Equipment Scarcity – Our proposal focuses entirely on computer equipment, routers, cable, supplies, etc. that in the current COVID environment can be difficult to source and deliver in the suggested timeframes. For example, we have seen

Fiscal Year 2021-22 Information Technology Request

Colorado Northwestern Community College *Computer and Network Upgrades*

some fiber optic parts taking over three months to be delivered and some fiber optic cable taking up to six months.

- CNCC's Remote Location – CNCC is located in NW Colorado 90+ miles from the nearest city of any size (Grand Junction). Most technical solution providers are located along Colorado's front range or in another state. This increases the time required to source, bid, and then execute on installation contracts.
- Bid Process Timing – Another key issue will be the time between capital budget approval and start of fiscal year. CNCC would benefit from as much advance notice of approval as possible to implement the bid process and secure a contract. If we can front end that process in the latter months of FY21, we have a much better opportunity of a total spend before the end of FY22.
- Requested \$\$ Unchanged – We will not increase our request; however, all contingencies will be consumed to use outside vendors to install proposed equipment as opposed to using local resources.

These constraints and challenges make it difficult for CNCC to absolutely affirm that all expenditures will be complete in one year's time. As noted, we are anxious to implement these improvements to our IT infrastructure and security systems. If given the opportunity, we will do everything we can to comply with the State's requirements, reporting, and timelines.

Fiscal Year 2021-22 Information Technology Request

Adams State University, Fort Lewis College, Western Colorado University
Digital Transformation Initiative

SHORT PROJECT DESCRIPTION

Adams State University, Fort Lewis College, and Western Colorado University are requesting state funds and cash funds spending authority for phase one of a two-phase project to modernize the institutions' Enterprise Resource Planning (ERP) systems, which manage human resources and finance components, and Student Information Systems (SIS), and move to a cloud-based ERP/SIS solution.

PRIORITY NUMBERS

2020065

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	7 of 15	Not recommended for funding.
CCHE	3 of 11	
ASU	1 of 1	
FLC	1 of 1	
WCU	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$9,199,055	\$12,015,580	\$0	\$21,214,635
CF	\$0	\$92,920	\$121,370	\$0	\$214,290
Total	\$0	\$9,291,975	\$12,136,950	\$0	\$21,428,925

PROJECT STATUS

This is the second request for funding. Last year, the JTC recommended funding for the project, and based on the JTC's recommendation, the Joint Budget Committee initially approved funding for the project. However, following the General Assembly's recess due to the COVID-19 pandemic and the resulting budgetary impacts of the pandemic on the state budget, the JBC ultimately did not include funding for the project in the FY 2020-21 Long Bill.

PROJECT DESCRIPTION

Adams State University, Fort Lewis College, and Western Colorado University are requesting state funds and cash funds spending authority to modernize the institutions' ERP systems, which manages human resources and finance components, and SIS, and move to a cloud-based ERP/SIS solution.

Phase one of this project will entail implementing the human resources (e.g., benefits, timekeeping, etc.) and finance (e.g., budgeting, payroll, etc.) modules of the system. These modules are typically less complex. Phase two, which the institutions anticipate requesting funding for next fiscal year, will involve modernizing the student information system module. The SIS is used to manage tasks related to the matriculation, education, graduation, and ongoing relationship with students and alumni, including tasks related to admissions, registration, degree planning, transcripts, financial aid, and others. Phase two will also involve moving the SIS to the same cloud-based solution used for phase one.

Fiscal Year 2021-22 Information Technology Request

Adams State University, Fort Lewis College, Western Colorado University
Digital Transformation Initiative

PROJECT JUSTIFICATION

According to the higher education institutions included in this project, the current COVID-19 pandemic has highlighted several potential benefits of this project. Examples include reducing paper-based processes by allowing self-service of features by students, faculty, and staff within the ERP/SIS system itself; moving to subscription-model pricing, which will lead to less fluctuation in annual costs compared to the normal capital expenditure model; and allowing for greater flexibility if remote work is necessary again in the future.

Each of the three institutions is currently using individual ERP/SIS systems that are provided by Ellucian Banner and were acquired almost 30 years ago. The basic structure of the current systems involves a traditional database backend, an administrative mid-layer, and a web-based front end for students, faculty, and staff. The institutions state that the current systems do not meet users' needs and a multitude of "shadow" systems, including excel spreadsheets, access databases, and manual reports, have been created, which this new system would aim to eliminate. For example, Western Colorado University estimates that a new system could reduce the time to manage the institution's expense reimbursement process by 90 percent. According to the institutions, they expect to realize efficiency gains of approximately 5 percent, equating to over 100,000 work hours per year, campus-wide with this project.

COST-BENEFIT ANALYSIS

By undertaking this project as a collaborative effort between the three institutions, they are able to act as an entity of more than 11,000 students, faculty, and staff, which will result in estimated savings of 30 to 40 percent, or \$4.5 to \$5.5 million, for implementation costs, and 20 to 25 percent for annual operating costs. The institutions believe that they can take advantage of their similarly unique positions as small, rural, geographically remote, comprehensive four-year institutions, and develop one system that supports all three institutions. Implementing this project through a collaborative approach will also enable the institutions to standardize business practices and implement sharing of best practices and processes, leading to additional cost savings in the future.

PROJECT COST INFORMATION

The cost estimates for this project are based on information received from a request for information conducted by the institutions in spring of 2019.

CASH FUNDS

Each of the institutions will be contributing cash funds from institutional cash reserves for the funding of this project. Each institution charges a student technology fee, however, the revenue from these fees will not be used to pay for this project.

PROJECT RESEARCH

As part of the research for this project, the institutions analyzed three different alternatives: staying with the current systems and vendor, moving to a cloud-based solution with the current vendor, or moving to a cloud-based solution with a new vendor. The institutions determined that the third option of moving to a cloud-based solution with a new vendor offered the most advantages, while remaining with the current system created the most negatives.

ADDITIONAL PROJECT INFORMATION

N/A

Fiscal Year 2021-22 Information Technology Request

Adams State University, Fort Lewis College, Western Colorado University
Digital Transformation Initiative

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	July 2021	July 2022
Implementation	July 2021	June 2024
Testing	June 2022	June 2024
Closing	July 2023	June 2025

QUESTIONS

The institutions provided the following information in response to JTC staff questions.

1. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

How we answer largely depends on to what extent we would be allowed to “pre-pay” for software subscriptions and implementation costs. Vendors often offer substantial discounts if you commit to paying up front for all or a portion of your total contract cost. (Our institutions have taken advantage of this in the past with other purchases.) If we are allowed that flexibility, then our original proposal will remain largely unchanged with nearly all of the project expenses incurred in the first year of Phase I and first year of Phase II.

If we are not allowed to pre-pay, the impacts on the project are more significant and outlined below:

- Complications to an “annual phasing” approach

As our project is currently designed, we would implement the HCM/Payroll/Finance modules in Phase I. While a large portion of Phase I could be completed in 12 months, with a project of this complexity, it is reasonable to expect unforeseen challenges that would impact our ability to meet the 12 month deadline. Further, when we would move to Phase II, the implementation of our even more complex Student modules (includes Financial Aid, Records/Registrar, Admissions, Student Business Services, Advising, etc.) our preferred vendor has indicated that this is a minimum 18 month implementation for a single institution. As we are combining our institutions to save on implementation costs, the total implementation time is likely to go beyond that minimum. In order to meet the one-year spending authority change, we would have to request at least three annual phases. In that scenario, it would be difficult to clearly identify the “discrete benefit” of each phase, since from a project perspective they are all really one phase. Additionally, if the State were unable to fund subsequent annual phases, the institutions would be in an untenable position with a partially implemented system with no funding to fully complete the project.

- Implementation timeline concerns

This project is very complex, with many unforeseen challenges that will be encountered along the way. Our current proposal was phased to allow the time necessary to deal with these issues and the three-year spending authority provided us the flexibility to ensure the implementation was done as completely and thoroughly as possible. It is absolutely critical we do not rush the implementation to meet a one year deadline at the expense of properly implementing the system. Doing so will undoubtedly lead to additional expense and time to rectify later on. Universities replace their ERPs once every 20-30 years, and we must get it right in order for our institutions to truly capitalize on the myriad advantages, efficiencies, cost savings, and opportunities that the new system brings.

As stated previously, Phase II requires an 18-24 month implementation period. If we were to attempt a more aggressive 12 month implementation, the cost of the project would likely increase as we would have to hire more “backfill” positions to enable our current staff to fully engage in the implementation. Again, this increases the risk that the project would not be done as accurately and efficiently in comparison to the recommended 18-24 month implementation period.

- Subscription costs and “double-paying” for licensing/subscriptions

Fiscal Year 2021-22 Information Technology Request

Adams State University, Fort Lewis College, Western Colorado University
Digital Transformation Initiative

The original proposal factored in funding to cover the subscription costs for the new system during the implementation, while all three Universities are still paying their legacy systems' licensing and subscription costs. If the spending authority were to be reduced to one year, and subscription costs can't be "pre-purchased" for the time it takes to fully implement the new system, then each University would be forced to cover the cost of two systems simultaneously. This is not financially possible for our institutions.

- Implications on future IT capital projects. One of the key reasons we chose to partner on this project was based on our belief that this type of complex collaboration between institutions is the ideal usage of state funding for IT projects. If the spending authority is reduced to one year, this could disincentivize institutions from considering large, transformative projects that aren't typically able to be completed in one year. Our project requires extensive coordination, scheduling, logistics, decision-making, business process redesign, training, project management, and other complex functions in order to be successful. Projects with multiple stakeholders that would provide the greatest return on investment on state funds may forgo the work and effort to put together a proposal if they do not feel they can successfully complete the project in the one-year timeframe.

Fiscal Year 2021-22 Information Technology Request

University of Northern Colorado
Next Generation Cyber Secure Network

SHORT PROJECT DESCRIPTION

The University of Northern Colorado (UNC) is requesting state funds and cash funds spending authority to implement a new core network architecture.

PRIORITY NUMBERS

2020029

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	8 of 15	Not recommended for funding.
CCHE	4 of 11	
UNC	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$1,191,077	\$0	\$0	\$1,191,077
CF	\$0	\$11,910	\$0	\$0	\$11,910
Total	\$0	\$1,202,987	\$0	\$0	\$1,202,987

PROJECT STATUS

This is the third request for funding. UNC requested, but did not receive, funding for this project in FY 2019-20 and FY 2020-21.

PROJECT DESCRIPTION

UNC is requesting a combination of state funds and cash funds spending authority to implement a new core network architecture. UNC states that a new network architecture will increase network security, enhance user experience, and provide more visibility into the network to improve monitoring. This project will include a flexible environment that will allow security events to be triggered based on behaviors in the network and allow applications within the network to communicate independently without staff intervention.

For FY 2020-21, UNC submitted a budget request to replace failing hardware along with firewall software components to increase security, which was not appropriated funding. UNC explains that the university had to replace this equipment in 2020 because it was at end of life. Due to this equipment replacement, the project's costs have decreased. UNC is currently leasing new hardware with a cost of \$300,000 per year, funded through the UNC student technology fee

Fiscal Year 2021-22 Information Technology Request

University of Northern Colorado
Next Generation Cyber Secure Network

PROJECT JUSTIFICATION

According to UNC, the legacy core network is over seven years old and has reached the end of support from the vendor. Additionally, UNC states that without this infusion of one-time funding, it will not be able to shift from this aging architecture, which is resource intensive, inefficient, and insecure.

UNC states the project will provide operational efficiency and increase the network to match the increasing number of internet of things (IoT) devices on campus, which are devices that can connect to the network, such as thermostats, vehicles, security systems, and speaker systems. UNC estimates that this project will reduce future operating costs by a total of \$96,408 due to a reduction in senior network engineers.

PROJECT ALTERNATIVES. The university considered several project alternatives including maintaining the current network and purchasing from multiple vendors. UNC chose the option to procure CISCO products because of existing staff's expertise and past successes.

COST-BENEFIT ANALYSIS

UNC was unable to quantify cost savings as required by House Bill 15-1266, but states that the project will provide operation efficiency, improve network security, and address future IT challenges.

PROJECT COST INFORMATION

UNC anticipates that this project will allow the university to consolidate separate devices from different vendors, including the current firewall, into one solution with one vendor. UNC anticipates eliminating expenditures as a result of this project, including \$34,000 a year for a current vendor product used that will be phased out during the project.

Additionally, the university plans to purchase the equipment in bulk, which is expected to reduce costs by 20 percent compared to purchasing equipment individually as it fails.

CASH FUNDS

The cash funds for this project are funds from the UNC student technology fee, currently \$11 dollars per credit hour.

PROJECT RESEARCH

UNC states that a third party vendor was utilized for the initial strategy and plan development for this project. It also states that CISCO engineers reviewed the accuracy of this project.

ADDITIONAL PROJECT INFORMATION

UNC states that it employs several IT specific project managers in its Project Management Office. The project manager within the university's PMO will be assigned after funding is authorized and will monitor the project's timeline and budget. UNC also uses a defined maintenance window, typically Thursday, Saturday, and Sunday for equipment installation to minimize installation impacts.

The university also states that this project will use IT best practices leveraging innovations in network design and technology, including software defined networking, next generation firewall, and network segmentation to reduce network complexity.

Fiscal Year 2021-22 Information Technology Request

University of Northern Colorado
Next Generation Cyber Secure Network

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	July 2021	October 2021
Implementation	October 2021	January 2022
Testing	January 2022	June 2022
Closing	June 2022	August 2022

QUESTIONS

The institution provided the following information in response to JTC staff questions.

1. Please provide an explanation as to why this funding request meets the statutory requirements in Section 2-3-1701 (2)(b), C.R.S., which provides that the definition of "information technology" for the purposes of budget requests to be considered by the Joint Technology Committee "does not mean post-implementation support, hardware life-cycle replacement, or routine maintenance."

UNC is requesting funding in order to roll out new security architecture. We have operational funding allocated to support the new network environment, but we do not have a mechanism for one-time funding to procure this architecture. Existing staff will support the implementation and ongoing maintenance. We will add this security architecture to our long-term fiscal planning process to ensure funding is allocated for replacement in future years.

2. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

Although this does not impact UNC this year, I do believe this could create challenges in the future. In order to get RFPs out and services procured I believe the window is very tight to complete in 12 months. If substantial services are required for a particular project it may not wrap up before the end of the same fiscal year. We would not want to pay for services before they are rendered just to get the money spent. I would suggest that if the requestor believes the project may extend past the end of the fiscal year that they should specify that in the proposed project plan and make it known in the worksheet section of the request.

Fiscal Year 2021-22 Information Technology Request

Colorado Mesa University
Network Security and Resiliency

SHORT PROJECT DESCRIPTION

Colorado Mesa University (CMU) is requesting state funds and cash funds spending authority to modernize the university's network hardware.

PRIORITY NUMBERS

2021018

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	9 of 15	Not recommended for funding.
CCHE	5 of 11	
CMU	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$2,249,898	\$0	\$0	\$2,249,898
CF	\$0	\$222,519	\$0	\$0	\$222,519
Total	\$0	\$2,472,417	\$0	\$0	\$2,472,417

PROJECT STATUS

This is the second request for funding. CMU requested, but did not receive, funding for this project in FY 2020-21.

PROJECT DESCRIPTION

CMU is requesting state funds and cash funds spending authority to modernize the university's network hardware. CMU will use this budget request funding to:

- upgrade the university's core network switch and network backbone; and
- upgrade edge switches in the data center and residence halls.

Currently the university funds a single core network in its primary datacenter. This project will add a redundant core network switch in a secondary datacenter and install redundant cable switches in each data center. The university will also add redundant backbone network links to campus buildings.

CMU states that this project will improve network security, improve network uptime, improve network performance, and improve user experience. CMU anticipates increasing wireless network speeds from 4 gigabytes (Gb) to 10Gb with this project. This project will also eliminate most single points of network failure. These benefits will impact all users on campus, including faculty, staff, students, and visitors.

PROJECT JUSTIFICATION

According to CMU, the current single core network switch on campus was impacted by a water incident that caused several buildings to go offline for a day, which identified the need for higher network redundancy to mitigate future equipment failures. CMU also states that the university needs to increase network capacity and network bandwidth to provide more reliable internet access to support the increasing number of network-attached devices and internet-based services.

Fiscal Year 2021-22 Information Technology Request

Colorado Mesa University
Network Security and Resiliency

COST-BENEFIT ANALYSIS

CMU was unable to quantify cost savings as required by House Bill 15-1266, but states the project will reduce costs associated with technology replacement programs the university currently utilizes, enhance the overall experience of the user base with improved network speeds, and enhance the university's data protection efforts.

PROJECT COST INFORMATION

The university estimated the cost of this project using the following phases:

Phase 1 (\$1,774,830 of Total Funds):

- upgrade the core network switch and add redundant top-of-rack 40 Gigabit Ethernet (GbE) switches to increase connectivity to virtualized server environments
- upgrade the main campus local area network backbone to 10GbE with redundant links to most buildings.

Phase 2 (\$697,587 of Total Funds):

- upgrade edge switches in residence halls to upgrade all device ports to 1GbE with advanced features to support dynamic port segmentation for increased personal device security.

CASH FUNDS

CMU states that it will contribute the cash funds from the university's reserves. CMU does not charge students a technology fee at this time.

PROJECT RESEARCH

CMU estimated the cost of this project using the existing HPE/Aruba network environment to leverage the negotiated discounts on any new equipment. Other network hardware manufactures were reviewed to determine the future direction of the campus network infrastructure, but CMU decided that using the existing network infrastructure will reduce costs. CMU also states that they expect to receive additional discounts if the project is funded through contacting authorized resellers of specified equipment.

ADDITIONAL PROJECT INFORMATION

CMU states that this project will increase network resiliency, security, and performance though improving network redundancy. They also state that this project will increase network security though a homogenous network provided by modernizing the network through edge switch upgrades.

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	April 2021	July 2021
Implementation	July 2021	December 2021
Testing	July 2021	December 2021
Closing	December 2021	December 2021

Fiscal Year 2021-22 Information Technology Request

Colorado Mesa University
Network Security and Resiliency

QUESTIONS

The institution provided the following information in response to JTC staff questions.

1. Please provide an explanation as to why this funding request meets the statutory requirements in Section 2-3-1701 (2)(b), C.R.S., which provides that the definition of “information technology” for the purposes of budget requests to be considered by the Joint Technology Committee “does not mean post-implementation support, hardware life-cycle replacement, or routine maintenance.”

The requested funds for the scope of CMU’s Network Security and Resiliency Project is above general hardware replacement and will result in a substantial upgrade to the University’s core and edge network switches that comprises the University’s Local Area Network (LAN) and supports 40Gb server connections in the datacenter, 10Gb inter-building connectivity, and enhancements in network security and redundancy. The upgrades eliminate most single point of network failures and will help the University meet student and faculty network security and online application performance expectations.

CMU has a technology hardware replacement plan and budgets for refreshing network switches. A decade ago, the University found the cost of network switches to be on the decline as features and performance of network solutions advanced. During this period, the University successfully funded network hardware upgrades without significant increases in funding. However, more recently the University has realized a significant increase in the cost of network equipment, requiring upgrade funds beyond network replacement costs to advance the security and performance of its LAN.

In 2017-18, CMU re-evaluating its replacement strategies and equipment lifecycles for its technology sustainability plan. This resulted in many of the University’s hardware replacement schedules to be extended to help curtail the rising costs of its technology replacement programs. Also considered at that time was a) the additional expense to upgrade the core network switch with 10G connectivity in the datacenter and b) the increasing number of Power-over-Ethernet (PoE) devices connecting across campus. PoE devices connecting to network switch ports include Internet Protocol (IP) security cameras, wireless access points, and classroom A/V equipment among other Internet of Things (IoT) devices brought by students living in the residence halls. Network requirements are quickly moving past 10Gb connectivity in the datacenter and 1Gb between buildings.

2. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

In the event the Joint Technology Committee and Joint Budget Committee modify the IT capital appropriations to a one-year spending authority model, CMU would combine the first two stages of the request. This would provide the opportunity to focus efforts on the network core and backbone. The implementation of the core switch, the redundant 40 Gigabit Ethernet switches, and the upgrade to the local area network backbone to 10 Gigabit Ethernet provides a significant improvement to the network’s resiliency and performance. It is feasible to complete the work involved in these two stages within a twelve month time-frame at a cost of \$1,776,299.45.

If the second year of the request is funded, CMU would utilize the funding to improve the functionality of the edge switches serving the students in the residence halls. The upgrade to 1 Gigabit Ethernet ports will provide a marked improvement over the existing infrastructure. The work identified for year two would be completed within twelve months at a cost of \$691,884.56.

Although separating the project into two funding years will, at least to a slight degree, increase the amount of time necessary to complete certain components of the necessary work, CMU would not be negatively affected by the one-year funding model. The project will be appropriately documented in order to provide assurance that the separate phases have been completed. Therefore, the potential of a one-year spending authority model is acceptable and would still allow the University to complete the work associated with the funding request on time and within budget.

Fiscal Year 2021-22 Information Technology Request

Community College of Denver
Classroom and Conference Room Technology

SHORT PROJECT DESCRIPTION

The Community College of Denver (CCD) is requesting state funds and cash funds spending authority for phase one of a three-phase project to replace, update, and standardize the college's classroom and conference room technology.

PRIORITY NUMBERS

2021019

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	10 of 15	Not recommended for funding.
CCHE	6 of 11	
CCD	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$1,595,878	\$1,532,140	\$1,627,899	\$4,755,917
CF	\$0	\$101,865	\$97,796	\$103,908	\$303,569
Total	\$0	\$1,697,743	\$1,629,936	\$1,731,807	\$5,059,486

PROJECT STATUS

This is the second request for funding. CCD requested, but did not receive, funding for this project in FY 2020-21.

PROJECT DESCRIPTION

CCD is requesting state funds and cash funds spending authority to replace, update, and standardize the college's classroom and conference room technology. The technology that will be replaced and updated throughout the college's classrooms and conference room includes conferencing and telecom equipment, screen sharing equipment, projection and video display equipment, connecting and switching equipment, and conference phones. This project will allow the college to implement distance learning technology, wireless projection, instruction capture, digital whiteboards, and "bring your own device" connectivity.

Phase one of the project will involve replacing and updating the technology in the college's health sciences campus classrooms, the science building classrooms, and the conference rooms on the Auraria campus. Phases two and three will involve replacing and updating the technology in the college's 64 classrooms in the Cherry Creek building and other classrooms throughout the college.

PROJECT JUSTIFICATION

This project will enable CCD to purchase new equipment for use in the college's classrooms and conference rooms that will provide new capabilities, enable innovation in teaching, and enhance student learning. By standardizing the equipment used in the college's classrooms, CCD believes college faculty will be able to spend less time setting up and figuring out how to use or fix the technology in various parts of the college and spend more time on instruction.

According to CCD, the current classroom and conference room technology has a high rate of failure. As of 2019, there were 72 failures reported each month in the 194 rooms that are proposed to be included in this project. It is becoming more common for the support contractor to have to completely replace equipment as they are less likely to be able to repair the equipment to a viable operating state.

Fiscal Year 2021-22 Information Technology Request

Community College of Denver
Classroom and Conference Room Technology

COST-BENEFIT ANALYSIS

CCD was unable to quantify cost savings as required by House Bill 15-1266, but states the project will reduce staff time spent setting up technology, which will increase the amount of time spent on instruction and therefore improve student retention and completion.

PROJECT COST INFORMATION

CCD has provided the following cost estimates for this project:

- AV equipment: \$4,466,142
- Professional services: \$352,416
- 5 percent project contingency: \$240,928

CASH FUNDS

CCD plans to use cash reserves to fund the cash fund portion of the project. The college does not currently charge a student technology fee. According to CCD, this is because the college's fees are among the highest in the state for community colleges due to mandatory Auraria campus fees.

PROJECT RESEARCH

Cost estimates for this project are based on vendor quotes for a standard technology solution in each area.

ADDITIONAL PROJECT INFORMATION

N/A

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	July 2021	July 2021
Implementation	August 2021	December 2023
Testing	August 2021	December 2023
Closing	December 2023	December 2023

Fiscal Year 2021-22 Information Technology Request

Community College of Denver
Classroom and Conference Room Technology

QUESTIONS

The institution provided the following information in response to JTC staff questions.

1. Please provide an explanation as to why this funding request meets the statutory requirements in Section 2-3-1701 (2)(b), C.R.S., which provides that the definition of “information technology” for the purposes of budget requests to be considered by the Joint Technology Committee “does not mean post-implementation support, hardware life-cycle replacement, or routine maintenance.”

This project meets the definition of “information technology” because it does not include support, maintenance or disposal for the existing equipment. The purpose of this project is to purchase new equipment and to provide new capabilities that will enable innovation in teaching and enhance student learning.

2. Based on staff’s understanding, this year’s budget request appears to be similar to, but not the same as last year’s submission. Please explain how the two requests overlap and how the college’s needs have changed or been reevaluated since last year and are thus reflected in this year’s request. Has the college self-funded and implemented any of the components from last year’s request?

The project is a re-submission of the request from the previous year. The Community College of Denver has not been able to self-fund any of the project to date. CCD has used about \$500k of federal CARES Act funding for IT infrastructure such as VXRail and VMWare software as well as laptops and hotspots for students and adjunct instructors to address the impact of COVID on remote learning; however, that funding is not available for these important projects. The project goals have changed slightly because of a shift to hybrid instructional modalities. However, the equipment required to accomplish the project goals did not change. Planning for this project focused on a modular design that prepares several key capabilities including in-classroom projectors, wireless projection, digital whiteboards, “BYOD” (bring your own device) connectivity and web meeting systems to allow distance learning. The same physical technology will meet the needs even though the overall goal and purpose has changed to meet new challenges.

3. The request indicates that this is phase one of a three phase project. What would the implications be if the first phase was funded, but funding was not approved in years two or three for the subsequent phases? Is phase one able to provide value if funding for phases two and three is not approved?

In that case CCD would have a working design and would progress through classrooms at a much slower pace. If other phases were not approved the Phase 1 project would provide a good foundation for moving forward in the other classrooms. Some equipment would be prioritized over other equipment, but the Phase 1 completion would provide a great deal of benefit. Another option would be to replace projectors in all classrooms in Phase 1 and replace additional equipment as funding is available.

4. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

If the Joint Technology Committee and Joint Budget Committee move the IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill the Community College of Denver would prioritize project implementation. The priorities would similarly follow the 3 year implementation project with a shift of priorities to address uncertain funding for the next year. Instead of breaking up the project by room the priorities would shift to equipment. Failing classroom projectors would move to the top of the priority list along with the addition of capabilities to better meet the needs of students who may still be remote on an intermittent schedule, even after the pandemic resolves. Consequently, because of likely permanent adjustments following COVID-19, capabilities for flexible delivery of instruction will be prioritized next. Capabilities would include options for remote delivery of lecture and electronic classroom materials. Some of those capabilities have been addressed with CARES Act funds, but most have not. Following these priorities the amount approved would follow the classroom and meeting spaces of the original project. Any funding approved would be helpful to address the highest priority equipment and rooms and help ensure student success during the pandemic and beyond.

Fiscal Year 2021-22 Information Technology Request

Colorado School of Mines
Re-Envisioning Mines' ERP and SIS

SHORT PROJECT DESCRIPTION

The Colorado School of Mines (Mines) is requesting state funds and cash funds spending authority for phase one of a multi-phase project to modernize the school's Enterprise Resource Planning (ERP) and Student Information System (SIS).

PRIORITY NUMBERS

2020006

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	11 of 15	Not recommended for funding.
CCHE	7 of 11	
CSM	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$789,000	\$2,304,000	\$5,943,000	\$9,036,000
CF	\$0	\$122,000	\$239,000	\$603,000	\$964,000
Total	\$0	\$911,000	\$2,543,000	\$6,546,000	\$10,000,000

PROJECT STATUS

This is a new, never-before-requested project.

PROJECT DESCRIPTION

Mines is requesting state funds and cash funds spending authority to modernize the school's ERP/SIS system. The school's ERP/SIS system is used across all key business operations, such as human capital management, finance, payroll, and student information (e.g., grades, attendance records, admissions information, and financial aid).

Phase one of the project will involve purchasing the human resources, application, and financial modules within a new ERP system with implementation services.

PROJECT JUSTIFICATION

The current ERP/SIS system used by Mines, Ellucian Banner, was implemented in 2005 in partnership with the University of Northern Colorado and the Colorado Community College System. Since 2005, the school has had to implement various third-party systems to provide necessary functionality that is not provided in the current ERP/SIS system. Mines has also had difficulty in recruiting IT professionals to maintain the current ERP/SIS system in recent years.

COST-BENEFIT ANALYSIS

According to a total cost of ownership analysis that was performed by the school, there is no significant cost difference in the costs between maintaining the school's current legacy ERP/SIS systems and implementing a new, modern software-as-a-service cloud solution ERP/SIS system. However, the school expects that the new system will provide a range of improved outcomes for students, faculty, and staff, such as realizing business process efficiencies, providing technology that meets users' expectations, allowing for an agile and innovative system that is able to quickly adapt to a changing environment, and reducing risk and infrastructure costs.

Fiscal Year 2021-22 Information Technology Request

Colorado School of Mines
Re-Envisioning Mines' ERP and SIS

PROJECT COST INFORMATION

Based on preliminary market analyses, Mines determined that the average five-year subscription cost was \$5,898,900 with an average of \$2,786,700 in implementation costs.

CASH FUNDS

Mines is planning to use a small reserves fund that has been designated for major IT initiatives for the source of cash funds for this project. Mines currently charges a student technology fee of \$83 per student; however, the school does not plan to use revenue from the fee for this project since that revenue is used to fund predominantly student-focused technology.

PROJECT RESEARCH

Cost estimates for this project are based on preliminary market analyses and an independent ERP assessment that was conducted by BerryDunn in April 2020.

ADDITIONAL PROJECT INFORMATION

N/A

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	July 2021	December 2021
Implementation	July 2021	December 2023
Testing	July 2021	December 2023
Closing	December 2023	December 2023

QUESTIONS

The institution provided the following information in response to JTC staff questions.

1. According to the schedule provided in the budget request document, it was anticipated that the BerryDunn assessment would be completed by fall of this year. Please provide an update on the progress of the assessment, including a summary of the results and any changes to the project's estimated costs.

We engaged BerryDunn in April 2020 to conduct an objective Enterprise Resource Planning (ERP) Assessment. The focus was on understanding the current state and analyzing gaps for our student, human resources, and financial information systems. The ERP Assessment also considered the ERP vendor market and comparative costs of potential systems.

BerryDunn's assessment included web-based surveys, an information request, fact-finding meetings, and research. Based on the information gathered, BerryDunn identified opportunities for improving business processes and addressing gaps in stakeholders' needs. BerryDunn also identified the overall readiness for change and found stakeholders are eager for changes that will improve their operations.

The result of their work concluded that Mines should conduct a competitive vendor analysis to identify a new ERP system with a comprehensive, intuitive, agile, and cost-effective system or to re-implement Banner. With a new implementation, Mines will have the opportunity to reduce third-party solutions, reduce duplication of staff effort, and configure robust integrations with systems like Canvas. BerryDunn found that inefficient business processes cause departments to rely on manual processes, unnecessary steps, and over-reliance on third-party systems. The opportunities to streamline business processes will provide Mines a strong foundation and standardized practices with a new ERP or re-implementation of the current Banner system.

This phase did not present any changes in the projected estimated costs.

Fiscal Year 2021-22 Information Technology Request

Colorado School of Mines *Re-Envisioning Mines' ERP and SIS*

2. In the project schedule section of the request, three project phases are included: human resources, financials, and student. How do these three project phases align with the four years of requested funding? What is the estimated cost for each of these phases?

We will enter a multi-year contract with the selected vendor and costs will include a yearly subscription cost, initial purchase of each module and implementation services. Estimated average subscription costs of just the core modules (this does not include add-ons) are \$500K-700K annually for each of the main modules (e.g., Human Resources, Finance) and \$100K annually for Application Tracking. Implementation cost is estimated at 25% of the subscription cost. We are expecting each module will take 12-18 months' time to implement. The first-year funding request will allow us to purchase the human resources, application tracking and financials module with implementation services. We selected human resources and financials because it is low-risk but with high-impact internal rollout. Each phase will use different resources on our campus which allows us to have multiple implementations occurring at one time. During the second year, we will be paying for the subscription cost for human resources, application tracking and financials along with the procurement of the student module, add-ons, and implementation services. In the 3rd and 4th year, it will be the on-going subscription costs for all modules.

3. The General Assembly cannot guarantee funding in subsequent years, each phase of project funding needs to be able to stand on its own. What would the implications be if funding for the first year was approved as requested, but funding was not approved in future years? Is phase one able to provide value if funding for the subsequent phase is not approved? What portions of the project would be completed with the \$911,000 that has been requested for FY 2021-22?

The first-year funding request for phase one will provide significant value because it will fund the implementation and core module purchase of human resources and finance. Through this implementation our campus will have a transformational digital experience by streamlining our business processes. This transformation will allow our talented staff to focus on providing a premier education for students. As noted above, we do have a small IT reserves fund that can be used to fund our cash contributions towards this project. However, if we were not to receive state funding in the subsequent years, we will have to issue debt or use some other kind of borrowing.

4. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

Our request to fund our Enterprise Resource Planning (ERP) system was based on a three-year phased implementation plan, an industry standard for this type of project. This is a significant investment for Mines, which will assist with student success and takes careful planning of resources. If the IT capital process is changed to a one-year funding request, we would like to request the full amount in one year with the option to request any portion not funded in subsequent request cycles.

In the current financial climate and without the State's funding, Mines would have to use the full amount of our small IT reserves and issue debt or use some other kind of borrowing to cover the costs. There is an additional significant impact on other IT-related projects that could benefit our students.

The biggest concern is not being able to request multi-year funding for projects that have a significant impact. Having additional guidance on what would yield more successful funding for IT projects would be helpful information. The collaboration with other CO schools on this project presents pricing benefits based on cooperative purchase as a group. A partial allocation to a one-year spending appropriation could impact the broader project.

Fiscal Year 2021-22 Information Technology Request

Metropolitan State University of Denver
Reimagining the Campus Digital Experience

SHORT PROJECT DESCRIPTION

Metropolitan State University of Denver (MSU-Denver) is requesting state funds and cash funds spending authority for the first phase of a four-phase project to replace the university's Enterprise Resource Planning (ERP) and Student Information System (SIS).

PRIORITY NUMBERS

2020063

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	12 of 15	Not recommended for funding.
CCHE	8 of 11	
MSUD	1 of 2	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$1,300,000	\$3,800,000	\$9,800,000	\$14,900,000
CF	\$0	\$200,000	\$395,000	\$995,000	\$1,590,000
Total	\$0	\$1,500,000	\$4,195,000	\$10,795,000	\$16,490,000

PROJECT STATUS

This is a new, never-before-requested project.

PROJECT DESCRIPTION

MSU-Denver is requesting state funds and cash funds spending authority to replace the university's SIS/ERP System. The university anticipates that this project will result in a cloud-based, mobile-friendly digital system. In phase one of this project, MSU Denver plans to: conduct a widespread process review of the current system, strengthen the university's data governance practices, and update data management protocols.

Phase two of this project will focus on replacing the ERP modules while phase three of the project will focus on replacing the SIS modules. Finally, in phase four of the project, MSU-Denver will integrate all completed modules into a single system for use by faculty, staff, and students.

Fiscal Year 2021-22 Information Technology Request

Metropolitan State University of Denver
Reimagining the Campus Digital Experience

PROJECT JUSTIFICATION

MSU-Denver's current ERP/SIS system is an Ellucian Banner system that has been in operation since 1998. According to MSU-Denver, the system has become cumbersome and difficult to navigate in recent years due to numerous custom applications the university has developed to better serve their needs. The current system is also hosted on-premise, which requires significant infrastructure and costs to maintain, which includes 50 virtual servers, 6 enterprise databases, and robust backup infrastructure within an onsite data center.

MSU-Denver students utilize the ERP/SIS system for numerous university functions, including to register for courses, process financial aid, review grades, and to pay tuition. MSU-Denver faculty and staff utilize the ERP/SIS system for numerous functions including to administer benefits and payroll, to manage external vendor contracts, and to manage the university's procurement process.

In 2019, MSU-Denver contracted with CampusWorks Inc., an independent consulting organization, to perform an assessment of the ERP/SIS system. CampusWorks Inc. found that the current ERP/SIS system is not meeting the needs of faculty, staff, and students. MSU-Denver states that users of the system must navigate numerous applications, and this project will streamline university business processes and improve the student experience.

Finally, the university explains that it has not been able to fill open positions for Ellucian Banner developer and administrator roles for the past two years because potential employees do not have experience with the out-of-date technology. This lack of in-house developers has led to the university contracting required labor outside of MSU-Denver at an increased cost.

PROJECT ALTERNATIVES. MSU-Denver states that during phase one of the project, it will determine whether it is in the university's best interest to replace entire the ERP/SIS system or to re-design and re-implement the current ERP/System. MSU-Denver states that if it determines to re-implement the current system, the cost of subsequent phases may decrease.

COST-BENEFIT ANALYSIS

The university estimates that the current ERP/SIS System costs the university \$2.9 million annually to maintain, including costs of licensing, supporting applications, and infrastructure. According MSU-Denver, a new cloud based ERP/SIS system is expected to decrease this annual cost and save the university \$2.7 million per year, which will equal \$16.5 million in savings after 10 years. The university has also estimated that this project will save costs equal to hiring 3.0 full time employees (FTE) and up to 12,480 hours per year in staff time.

MSU-Denver also explains that a new system will result in more cost savings by creating more efficient business processes, which it has measured in other recently implemented projects. For example, the university recently redesigned and automated the application process. On Colorado free application day in 2019, the university received almost 4,000 student applications, and before the system redesign, processing these application would have taken three to four months with approximately five temporary staff. With the new automated process, the university was able to process every application in two weeks without any additional staff. The university believes this project will yield similar results.

PROJECT COST INFORMATION

MSU-Denver states that the costs of this budget request was estimated by CampusWorks, Inc. and by averaging the cost of implementation and licensing costs of three different vendor's software.

CASH FUNDS

A percentage of the cash funds that MSU-Denver is proposing to use for this project is from the university's student technology fee, which is \$8 per credit hour.

PROJECT RESEARCH

MSU-Denver discussed the scope of the project with multiple experts, vendors, and Colorado peers to develop the proposed phased implementation approach. Additionally, the school states that they have been in discussion with peer institutions within the state who are encountering similar challenges and commits to working with those schools to coordinate efforts if they pursue a similar path.

Fiscal Year 2021-22 Information Technology Request

Metropolitan State University of Denver
Reimagining the Campus Digital Experience

ADDITIONAL PROJECT INFORMATION

N/A

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	July 2021	June 2022
Implementation	July 2021	June 2024
Testing	July 2022	June 2024
Closing	June 2024	June 2024

Fiscal Year 2021-22 Information Technology Request

Metropolitan State University of Denver
Reimagining the Campus Digital Experience

QUESTIONS

The institution provided the following information in response to JTC staff questions.

1. In phase 1 of the project, the request states that MSU-Denver will be deciding whether or not to re-implement the current system or to replace it. How will the cost of this phase of the project change if the system is just re-implemented?

The effort described within this phase will remain consistent regardless of the system selected, and is work that the University needs to complete to position the institution for long-term success. Given that, we do not anticipate a change in Phase 1 financial requirements based on the system selection.

2. How will the rest of the phases and their associated costs change if the system is re-implemented?

Based on third party estimates performed by a consulting group engaged by MSU-Denver in 2019, reimplementation of the Ellucian Banner product suite would reduce the ten year system costs by approximately thirty percent, most of which is allocated to the reduced complexity of the initial implementation project. With that in mind, the Year 2-4 request totals would likely decrease by greater than 50%.

3. Will a re-implemented system need to be replaced in the future?

Candidly, almost certainly yes. While some of the challenges identified by the consultant and our internal constituents relate to our business processes and moderate customization of the Ellucian Banner platform, core challenges are driven by the solution's foundational design and architecture.

A reimplementation of the solution may prove the most cost-effective strategy in the short- to medium-term, and will carry some benefit as we revise outdated business processes, eliminate dated customizations, and migrate to a hosted provider, but will not deliver the same long-term return on investment as a transition to a modern solution may promise. Given that, we anticipate that a future ERP transformation project would be likely within 5-7 years.

4. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

We at MSU Denver Information Technology Services would prefer that spending authority for IT Capital appropriations remain at the present three-year level. While we do not anticipate a need to alter our existing request for FY 21-22, this change may introduce risks that cannot be adequately mitigated. For example, supply chain constraints for necessary equipment or resource constraints from a service provider may inadvertently delay the launch of a given IT capital initiative, pushing the anticipated solution delivery beyond the fiscal year end; if this were to occur, the agency would face a difficult choice: attempt to identify an alternate funding source to complete the initiative, halt the work and accept a partial implementation (and reduced return on the investment), or, in an extreme case, halt work and abandon the initiative, creating only sunk costs.

Over the longer term, we would expect that agencies would put forward more conservative project proposals (with extended timelines) to reduce the risk of losing funding in any single fiscal year, thereby increasing the time before the technology investment begins to pay dividends back to the Colorado community.

Fiscal Year 2021-22 Information Technology Request

Metropolitan State University of Denver Network Infrastructure Modernization

SHORT PROJECT DESCRIPTION

Metropolitan State University of Denver (MSU-Denver) is requesting state funds and cash funds spending authority for the first phase of a three-phase project to modernize its network infrastructure and address deferred maintenance on current IT infrastructure.

PRIORITY NUMBERS

2021020

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	13 of 15	Not recommended for funding.
CCHE	9 of 11	
MSUD	2 of 2	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$1,250,000	\$795,000	\$775,000	\$2,820,000
CF	\$0	\$250,000	\$250,000	\$250,000	\$750,000
Total	\$0	\$1,500,000	\$1,045,000	\$1,025,000	\$3,570,000

PROJECT STATUS

This is the second request for funding. MSU-Denver requested, but did not receive, funding for this project in FY 2020-21.

PROJECT DESCRIPTION

MSU-Denver is requesting state funds and cash funds spending authority to modernize its network infrastructure and address deferred maintenance on current IT infrastructure.

Phase one of this project includes:

- installing fiber optic infrastructure to complete the campus network loop; and
- replacing 22 distribution and layer switches.

Phase two of this project includes:

- replacing 150 edge switches; and
- replacing 170 wireless access points.

Phase three of this project will involve the replacement of approximately 130 edge switches and 280 wireless access points on campus.

Fiscal Year 2021-22 Information Technology Request

Metropolitan State University of Denver Network Infrastructure Modernization

PROJECT JUSTIFICATION

MSU-Denver conducted stakeholder outreach and consulted with several external, independent vendors to assess the state of the current network infrastructure on campus. According to this assessment, 80 percent of the network switches on campus exceeded 5 years in service, 42 percent exceeded 7 years, and 10 devices are 10 years or older. The university also states that devices purchased prior to 2008 use an outdated system software that has not been updated since 2013.

According to MSU-Denver, its network infrastructure is aging and needs to be updated in order to avoid system failure due to the increase use of wireless devices on campus. MSU-Denver states that it has experienced numerous network failures resulting from its aged infrastructure, including 271 incidents from July 2020 to October 2020. These failures each resulted in a service interruption.

As an example of the impact of these events, on October 23, 2019, the science building on campus experienced a complete wireless outage for over 14 hours due to a network switch hardware failure. During this time, the university states that courses and business operations for multiple academic departments were significantly disrupted.

Additionally, the university says that the funding requested will address single points of failure and increase network security through the installation of redundant fiber connections between buildings. This project will also benefit the other institutions on the Auraria campus by completing a campus network loop that will provide additional fiber capacity.

COST-BENEFIT ANALYSIS

MSU-Denver was unable to quantify cost savings as required by House Bill 15-1266, but states the project will prevent network failures and increase network security.

PROJECT COST INFORMATION

MSU-Denver estimated project costs based on current pricing for similar hardware purchases. The University estimated the phase one costs as follows:

- fiber installation: \$60,000;
- hardware/software cost: \$1,190,000;
- maintenance cost: \$179,000; and
- professional Services: \$71,000.

MSU-Denver estimated the future costs of subsequent project phases by assuming that hardware-related expenses will be \$829,000 in phase two and \$813,000 in phase three. MSU-Denver also estimated the remaining costs of phases two and three will be split between maintenance expenses and professional services.

CASH FUNDS

A percentage of the cash funds that MSU-Denver is proposing to use for both phases of this project is from the university's student technology fee, which is \$8 dollars per credit hour.

PROJECT RESEARCH

The costs of this budget request were estimated using the number of devices and the average cost per device as well as the university's existing conduit paths.

ADDITIONAL PROJECT INFORMATION

N/A

Fiscal Year 2021-22 Information Technology Request

Metropolitan State University of Denver
Network Infrastructure Modernization

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	July 2021	August 2021
Implementation	August 2021	September 2021
Testing	August 2021	September 2022
Closing	September 2021	June 2022

Fiscal Year 2021-22 Information Technology Request

Metropolitan State University of Denver Network Infrastructure Modernization

QUESTIONS

The institution provided the following information in response to JTC staff questions.

1. Please provide an explanation as to why this funding request meets the statutory requirements in Section 2-3-1701 (2)(b), C.R.S., which provides that the definition of “information technology” for the purposes of budget requests to be considered by the Joint Technology Committee “does not mean post-implementation support, hardware life-cycle replacement, or routine maintenance.”

The primary focus of the initiative is a wholesale transformation of the networking ecosystem at Metropolitan State University of Denver. By supporting this one-time modernization effort, the Joint Technology Committee will be investing in the future success of MSU-Denver, enabling enhanced performance, availability, reliability, information security, and system analytics. Looking ahead, following the implementation of a robust, modernized architecture, MSU-Denver will allocate funds on an ongoing annual basis to sustain a life-cycle replacement program for network infrastructure.

2. What would the implications be if the first phase was funded, but funding was not approved in year two?

While Phase I delivers foundational enhancements to the Auraria Campus network, these improvements will be largely invisible to the campus population writ large. If Phase I is approved, MSU Denver will realize increased reliability at the campus core, but aging infrastructure that directly impacts the student experience – namely, edge technology including network switches and wireless access points – will remain susceptible to localized failures at a higher rate than normal until those devices are also upgraded.

3. Is phase one able to provide value if funding for the subsequent phase is not approved?

An investment in Phase I would allow MSU Denver to complete work on a missing element of the campus network infrastructure, adding resiliency and capacity to the northwest corner of the Auraria Campus. Additionally, replacement of 22 distribution layer network switches carries significant value, as these high-throughput devices can frequently become a congestion point within the current network fabric.

4. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

We would prefer that spending authority for IT Capital appropriations remain at the present three-year level. We don't anticipate a need to alter our existing request for FY 21-22, but this change may introduce risks that cannot be adequately mitigated. For example, supply chain constraints for necessary equipment or resource constraints from a service provider may inadvertently delay the launch of a given IT capital initiative, pushing the anticipated solution delivery beyond the fiscal year end; if this were to occur, we could face a difficult choice: attempt to identify an alternate funding source to complete the initiative, halt the work and accept a partial implementation (and reduced return on the investment), or, in an extreme case, halt work and abandon the initiative, creating only sunk costs.

Over the longer term, we would expect that agencies would put forward more conservative project proposals (with extended timelines) to reduce the risk of losing funding in any single fiscal year, thereby increasing the time before the technology investment begins to pay dividends back to the Colorado community.

Fiscal Year 2021-22 Information Technology Request

Otero Junior College
Technology Infrastructure

SHORT PROJECT DESCRIPTION

Otero Junior College is requesting state funds and cash funds spending authority for a project to replace and upgrade equipment in the college's library, computer labs, and classrooms, and also enhance an improved emergency notification system on campus.

PRIORITY NUMBERS

2020066

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	14 of 15	Not recommended for funding.
CCHE	10 of 11	
OJC	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$597,750	\$560,000	\$1,900,000	\$3,057,750
CF	\$0	\$125,000	\$90,000	\$375,000	\$590,000
Total	\$0	\$722,750	\$650,000	\$2,275,000	\$3,647,750

PROJECT STATUS

This is the second request for funding. Otero Junior College requested, but did not receive, funding for this project for FY 2020-21. The college also received \$475,000 in state funds for technology and communications upgrades in FY 2019-20.

PROJECT DESCRIPTION

Otero Junior College is requesting state funds and cash funds spending authority to replace and upgrade equipment in the college's library, computer labs, and classrooms. The project will also enhance an improved emergency notification system on campus.

For this project, the college anticipates purchasing:

- 225 laptops for staff;
- 150 iPads for the library;
- 50 laptops for the student learning commons; and
- 40 computers for student computer labs.

Additionally, the college anticipates purchasing surveillance equipment and equipment to assist in the dissemination of concurrent enrollment courses and materials from the college to the nine school districts in the college's service area.

Fiscal Year 2021-22 Information Technology Request

Otero Junior College
Technology Infrastructure

PROJECT JUSTIFICATION

According to the college, the current number of laptops and desktops that the college has is not enough to keep up with student and staff demand due to an increased reliance on technology throughout instructional programs. By funding this request, the college will be able to ensure that students and staff have access to state-of-the-art technology equipment to assist with the successful completion of coursework and instruction.

Additionally, the college will be able to provide enhancements to the campus emergency alert system to ensure the safety of everyone on campus.

COST-BENEFIT ANALYSIS

Otero Junior College was unable to quantify cost savings as required by House Bill 15-1266, but states that this project will improve student learning opportunities and success.

PROJECT COST INFORMATION

An itemized description of the equipment the institution is proposing to purchase with funding from this project is listed below:

- 225 Lenovo laptop computers for staff: \$222,750
- 150 Apple iPads for library: \$187,500
- 50 Apple MacBook Laptops: \$70,000
- 40 Lenovo "tiny" computers: \$40,000
- Surveillance equipment: \$15,000
- Classroom audio/video upgrades: \$120,000
- Computer equipment and monitors: \$67,500

CASH FUNDS

Otero Junior College is requesting to partially fund this project with \$125,000 in cash funds from student technology fees. The current student technology fee is \$4.25 per credit hour, which generates almost \$100,000 annually.

PROJECT RESEARCH

Otero based its cost estimates for this project on the current market value of the items being requested.

ADDITIONAL PROJECT INFORMATION

N/A

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	July 2021	July 2021
Implementation	August 2021	June 2024
Testing	August 2021	June 2024
Closing	June 2024	June 2024

QUESTIONS

The institution provided the following information in response to JTC staff questions.

1. Please provide an explanation as to why this funding request meets the statutory requirements in Section 2-3-1701 (2)(b),

Fiscal Year 2021-22 Information Technology Request

Otero Junior College Technology Infrastructure

C.R.S., which provides that the definition of “information technology” for the purposes of budget requests to be considered by the Joint Technology Committee “does not mean post-implementation support, hardware life-cycle replacement, or routine maintenance.”

A goal of Otero Junior College is to make certain we have adequate numbers of technological devices that are of the latest technology available for our students to utilize in the classroom as well as completion of homework and other study assignments. Our current number of computers (Laptops, Desktops, and MacBook devices) available for students to utilize total approximately 490 units located in computer laboratories, the learning commons library study area, and in some classrooms as well as small labs in our dormitory facilities. Our total unduplicated headcount of students for Fall Semester, 2019 is just over 1,250 students. With the almost daily increase in reliance on technology devices to enable students to perform successfully at their pinnacle of individual achievement, the College believes we need to have available sufficient numbers of these devices to be able to serve all students as well as allow staff access to the same technology. There is continual added reliance on computer devices use to instruct and learn using programs such as Desire to Learn (D2L), Office 365, and OneDrive. All of these processes plus access to classroom learning materials require use of technological devices so it is imperative to have these items available to all students. Most students have personal telephones and computers, however, these devices are, often times, not compatible with software selections or other peripheral devices such as printers that the College has available and/or required for successful completion of coursework. We anticipate with the current technology funding program along with the request for the FY2020-21 academic year, Otero Junior College will have established a technology base of approximately 1,210 units that can subsequently be maintained, upgraded, and replaced as needed via the use of the technology fee we currently charge our students on a per credit hour basis. (490 current units, 445 units from FY2019-20 funding, plus 275 units from FY 2020-21 funding totals 1,210 units available)

This funding request will also allow the College to add the latest teaching technology to 4 of our classrooms and enable us to more effectively serve students in our service area with reliable distance education options.

2. Please provide an update related to the funding that was appropriated to Otero for FY 2019-20 for technology and communication upgrades.

Otero Junior College has completed network infrastructure upgrades including 20 GB uplinks between buildings, Learning Commons Mini PC's, and new teacher station PC's. These infrastructure and new computer enhancement necessities became a top priority as a result of the COVID pandemic. The switch to remote instruction and learning during March – April of 2020 required the College to improve our capability to effectively communicate with our faculty / student audio and video connections in order to continue with the highest quality delivery without face-to-face interaction. We are proceeding with the Lenovo and Apple hardware replacements as well as classroom technology upgrades so as to accommodate our instructional staff and students by providing them with the latest technology available to replace items we currently use that are approaching end of useful life. The persistence of the pandemic has caused the College to adjust our “normal” teaching and learning process for the summer and fall semesters in 2020 and, most likely, will continue into the 2021-2022 academic year. The 2019-2020 funding along with the current request for 2021-2022 will enable the College to offer instruction at the highest level possible that will significantly increase the success in learning by our students. The audio and video surveillance equipment will improve the College's ability to communicate with students and staff which has become of the upmost importance in relaying information regarding the current safety and security status of our residential campus. We anticipate the 2019-2020 funding will be exhausted by June 30, 2021.

3. It is staff's understanding that this is the same request that was submitted to the committee for consideration last year. Does this year's request still involve purchasing: 225 Lenovo laptops, 150 iPads, 50 MacBook laptops, 40 Lenovo “tiny” computers, surveillance equipment, classroom audio/video upgrades, and concurrent enrollment playback technologies, at the same prices that were estimated in the FY 2020-21 request?

This year's funding request is particularly essential in that, due to COVID, our need for iPads and laptops has increased nearly 50%. Many of our current staff/faculty are using their own computers to get their work completed. We have allowed all of our students the opportunity to check out and utilize College owned computers and peripherals in order to ensure connectivity with communications from the College. Many of our classrooms are in need of adequate video equipment for remote delivery. We have not seen any significant increase in pricing of items the College is in need of and, therefore, no additional funding over our 2021-2022 request is currently anticipated.

4. Has the college considered leasing this equipment instead of purchasing? If so, what is the cost difference and pros/cons of each approach?

Fiscal Year 2021-22 Information Technology Request

Otero Junior College Technology Infrastructure

We have investigated the advantages/disadvantages of purchase versus leasing and determined leasing is a more expensive option for Otero Junior College. For instance, the Lenovo "Think Pad" can be purchased in quantity for approximately \$1,100.00 each and can be leased for \$20.66 per week. One year's lease payments would total \$1,074.32 (\$20.66 X 52 weeks) which is nearly equal to the cost for outright purchase. The estimated useful life of this computer is 3 to 5 years. In addition, the College would be responsible for service and maintenance on the machines. Leasing for three years would lead to an estimated cost of approximately \$3,225.00 plus any maintenance costs. Additionally, the College would need the computers for 32 weeks out of each year (two 16 week semesters) which further increases the overall cost based on time used. There are likely various arrangements that would allow lease/purchase options or lease payments for the time utilized, however, there is typically a time value of funds built in to a lease arrangement that results in increased cost that could be detrimental versus outright purchase as far as cash outlay is concerned.

5. If only partial funding is available, how would the college prioritize the funding request?

The priority for Otero Junior College would be as follows:

Apple iPads for students – Library/Learning Commons

Lenovo Tiny Computers-Laptops – Staff, Student Computer Laboratories

Classroom audio/video upgrades – Improvement in remote teaching capabilities

6. Please describe the criticality of these purchases during the time of COVID and remote learning.

The items funding is requested for are very critical to the success of our students and staff. We currently have zero spare laptops/iPads due to remote work. A number of our classrooms do not have adequate video equipment for effective remote delivery. We anticipate remote delivery will become more commonplace as we move into the future.

7. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

Otero Junior College's request for funding of \$597,750 plus the College's pledge of \$125,000 bringing the total available funds to \$722,750 would not change if spending authority were to be reduced from three years to one year. With the College's needs for classroom audio/video upgrades along with the ever increasing demand for additional student computer access, it is imperative we are able to meet these obligations in order to offer our students the most effective delivery of course content along with enhancing their ability to participate and respond to class activities. The rampant advances in technological performance driven by the need to convey cutting edge software applications and capabilities forces the College to make available the most up to date hardware. The College attempts to turnover technological equipment and infrastructure every 3 to 5 years which requires a significant annual investment in order to maintain the availability of the latest innovations for students.

We don't believe the change from 3 to 1 year spending authority will have a significant impact at Otero Junior College. We will most likely need to adjust our technology needs projections and the mix of equipment requiring retirement to accommodate a change in the flow of funding so as to continue with our replacement/upgrade policy over the 3 to 5 year period.

Otero Junior College has no major concerns with this potential change in policy.

Fiscal Year 2021-22 Information Technology Request

Lamar Community College
LCC Technology and Equipment Upgrades

SHORT PROJECT DESCRIPTION

Lamar Community College (LCC) is requesting state funds and cash funds spending authority for improvements and enhancements to classroom technology, distance learning technology, virtual simulation equipment, and a state-of-the-art remote testimony center.

PRIORITY NUMBERS

2020061

<u>Prioritized By</u>	<u>Priority</u>	
OSPB	15 of 15	Not recommended for funding.
CCHE	11 of 11	
LCC	1 of 1	

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2021-22</u>	<u>FY 2022-23</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$553,002	\$0	\$0	\$553,002
CF	\$0	\$35,298	\$0	\$0	\$35,298
Total	\$0	\$588,300	\$0	\$0	\$588,300

PROJECT STATUS

This is a new, never-before-requested project.

LCC was appropriated \$585,422 in FY 2019-20 for technology infrastructure, and the college states that this funding was used to enhance LCC's network and Wi-Fi infrastructure, including to cable new Wi-Fi access points and to update projection systems in classrooms.

PROJECT DESCRIPTION

LCC is requesting state funds and cash funds spending authority for improvements and enhancements to classroom technology, distance learning technology, virtual simulation equipment, and a state-of-the-art remote testimony center.

LCC plans to use appropriated funding to:

- upgrade the technology and furniture of 11 classrooms and 2 lecture halls;
- update digital signage at all LCC building entrances;
- purchase 20 virtual stimulation learning units; and
- purchase touchscreen computers for distance learning carts to use for remote testimony and distance learning classrooms.

LCC also plans to purchase additional network equipment with appropriated funding to improve campus Wi-Fi.

Fiscal Year 2021-22 Information Technology Request

Lamar Community College
LCC Technology and Equipment Upgrades

PROJECT JUSTIFICATION

LCC states that current classrooms are not adequate for the college's academic programs, which decreases the student retention rate for students outside of southern Colorado. The college hopes to increase student retention by enhancing classrooms to promote active learning and by integrating virtual stimulation in LCC's health programs. LCC also states that the existing remote testimony site does not meet industry standard recommendations, and upgrading it will enhance the experience of rural constituents communicating with their elected state legislators.

In addition, during the COVID-19 health pandemic, LCC discovered that many students did not have access to reliable internet and staff were not prepared to teach classes remotely. For example, LCC states that it loaned older laptops to students for remote learning and that it implemented Wi-Fi in LCC parking lots for students to use since many did not have internet access at home. LCC also states that the course completion rate for spring 2020 was 79 percent compared to 86 percent in 2019, and LCC believes the transition to remote delivery negatively impacted students. This budget request would fund more distance learning carts that the college can use throughout campus to deliver more courses remotely in the future.

COST-BENEFIT ANALYSIS

LCC did not quantify the cost savings as required by House Bill 15-1266, but anticipates that this project will increase student retention and faculty and staff satisfaction.

PROJECT COST INFORMATION

An itemized description of the equipment the college is proposing to purchase with appropriated funding is listed below:

Computer Configurations: \$180,750

- 150 Microsoft Surface Pros (\$1,078 each)
- 150 Microsoft Surface Pro covers (\$127 each)

VR/SIM: \$73,000

- 20 Microsoft HoloLens2 (\$3,650 each)

Network Equipment: \$120,000

- 1 HPE Aruba 7220 US Master Controller (\$12,440)
- 40 Aruba LIC-ENT enterprise licenses (\$300 each)
- 40 Aruba license CN bundle SVC (\$46 each)
- 40 Aruba outdoor 11ac AP (\$2,095 each)
- 40 Aruba NBD Exch AP-375 SVC (\$88 each)
- 40 outdoor pole/wall long mount kits (\$160 each)

Digital Signage: \$114,988

- 13 Digital signs with housing (\$5,507 each)
- 13 Outdoor monitor enclosure (\$3,339 each)

Remote Testimony: \$64,350

- 6 touch-enabled displays (\$5,700 each)
- 6 extended service agreements (\$350 each)
- 11 Logitech Rally Plus (\$2,550 each)

Installation/Electrical/Overhead/modernizing other spaces: \$35,202

CASH FUNDS

LCC is requesting to partially fund this project with \$35,298 in cash funds from student technology fees. The current student technology fee is \$3 per credit hour.

Fiscal Year 2021-22 Information Technology Request

Lamar Community College
LCC Technology and Equipment Upgrades

PROJECT RESEARCH

LCC considered multiple vendors and manufacturers to ensure that the college gets the best pricing available. LCC also considered a leasing option for this project, but states that the total cost of ownership is more when leasing equipment.

ADDITIONAL PROJECT INFORMATION

N/A

PROJECT SCHEDULE

	Start Date	Completion Date
Planning	June 2021	July 2021
Implementation	August 2021	December 2023
Testing	August 2021	December 2023
Closing	December 2023	December 2023

QUESTIONS

The institution provided the following information in response to JTC staff questions.

1. Please provide an explanation as to why this funding request meets the statutory requirements in Section 2-3-1701 (2)(b), C.R.S., which provides that the definition of "information technology" for the purposes of budget requests to be considered by the Joint Technology Committee "does not mean post-implementation support, hardware life-cycle replacement, or routine maintenance."

The college did not provide a response to this question.

2. Under current law, IT capital appropriations are given spending authority for three years. The Joint Technology Committee and Joint Budget Committee are considering moving IT capital appropriations to one-year spending authority in the FY 2021-22 Long Bill, as is current practice with operating budget appropriations. What would your request for FY 2021-22 be given this potential change? What impact would this potential change have? Do you have any concerns related to this potential change?

LCC would have no changes to current request. The college would like to request the original amount of \$588,300. In addition to ongoing needs identified prior to the pandemic, COVID-19 has added new challenges in supporting students, faculty, and staff at our rural college and has accelerated the need for more IT equipment and services.

The only impact would be an accelerated timeline (as compared to original plan) as the college works diligently with our State-approved vendors to ensure services and equipment are delivered in a timely manner. All projects with the request would be mapped out against calendar to ensure priorities are met within the funding year.

We are confident all requested items can be purchased, implemented, and executed within a 1 year span; therefore, we have no concerns related to this potential change.