Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University
Geothermal Exchange Loop

PROGRAM PLAN STATUS

2015-008

Approved Program Plan Yes **Date Approved:** July 1, 2019

PRIORITY NUMBERS

Prioritized By	Priority	
CMU	4 of 4	
CCHE	29 of 30	
OSPB	6 of 21	Recommended for funding.

PRIOR APPROPRIATIONS AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2023-24	FY 2024-25	Future Requests	Total Costs
CCF	$0	$4,000,000	$0	$0	$4,000,000
CF	$0	$5,108,609	$0	$0	$5,108,609
Total	$0	$9,108,609	$0	$0	$9,108,609

ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2023-24	FY 2024-25	Future Requests	Total Cost
Land Acquisition	$0	$0	$0	$0	$0
Professional Services	$0	$1,169,940	$0	$0	$1,169,940
Construction	$0	$6,610,060	$0	$0	$6,610,060
Equipment	$0	$784,000	$0	$0	$784,000
Miscellaneous	$0	$29,027	$0	$0	$29,027
Contingency	$0	$515,582	$0	$0	$515,582
Total	$0	$9,108,609	$0	$0	$9,108,609

PROJECT STATUS

This is the eighth request for funding. Funding has been requested for the project each year since FY 2014-15, except for FY 2019-20, though the scope of the request has changed over time.

Prepared by Legislative Council Staff

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University
Geothermal Exchange Loop

PROJECT DESCRIPTION / SCOPE OF WORK

Colorado Mesa University (CMU) is requesting state funds and cash funds spending authority to expand the campus-wide geo-exchange and solar panel systems for power generation. The geo-exchange system will provide a cleaner, more energy-efficient means of heating, cooling, and providing domestic hot water. The solar panel system installs 1.1 megawatts of rooftop solar panels, 2,000 kilowatt hours (kWh) battery capacity, and a 500 kW 2-way inverter/charger. This system will collect and store energy to be used during periods of peak demand, and will thereby allow CMU to avoid high-demand charges.

For the geo-exchange system, the project will install an additional loop field, heat pumps, central loop systems, and necessary hardware elements (vaults, pumps, valves, sensors, and controls). The new loop field will connect to existing loop fields, existing boilers, and cooling towers. The existing boilers and cooling towers will only be used to either add energy (boilers) to or to take energy away (cooling towers) from the system during periods of peak demand.

The system will also connect the campus's irrigation ditch water to the geo loop via a heat exchanger. As the Colorado River (irrigation water) flows by the campus, a series of vaults, pumps, filters, and open plate heat exchangers will be used to capture colder river temperatures to help modulate temperatures in the central loop. The existing diversion vault will be used to capture the water that is warmed up during this process so that it will be used on campus and not sent down stream. This system will be most effective in the springtime because the colder river temperatures will allow the geo-exchange system to pre-cool the ground and the loop fields between April and July. This will provide extremely efficient HVAC cooling on hot summer days. The system would then be used in the late fall to charge the loop fields for the winter. A cooling tower will also be added to help modulate temperatures in the central loop when the irrigation system is not being used.

CMU may submit later phases of the project that will convert every existing building from traditional heating and cooling systems to the more efficient heat pump systems; however, as a building's conversion requires the entire building to be off-line, CMU will need to take a phased approach to avoid shutting down large parts of campus at the same time.

Cost assumption. The cost assumption was determined through the planning process. The project meets the Art in Public Places and High Performance Certification Program requirements.

PROJECT JUSTIFICATION

The university says the additions to the geo-exchange system will improve the performance and safety of the existing system, which is at capacity. The system cannot currently meet the cooling demands of the connected load during peak demand. Campus electrical demand is also rapidly approaching the maximum capacity of the existing electrical feeds to the site from Xcel Energy. According to CMU, the combination of solar panel system and battery storage is crucial to avoiding a costly new electrical feed to the campus.

Project alternatives. The university formerly submitted this project with a significant trigeneration component in lieu of geo-exchange and solar power generation. CMU says it has returned to its focus on geothermal and solar as the economics of green energy sources have changed. The university also considered extending an additional electrical feed to the main campus, though CMU does not favor this option as it would not reduce CMU's dependence on traditional energy sources.

PROGRAM INFORMATION

The university consumes approximately 23.5 million kWh of electricity per year, with a peak demand low of 3,055 kW in the winter months and a high of 4,298 kW during the summer. Xcel Energy is the campus energy provider, and the university employs several green technologies in its energy portfolio.

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University
Geothermal Exchange Loop

PROJECT SCHEDULE

	Start Date	Completion Date
Design	June 2023	September 2023
Construction	September 2023	August 2026
Equipment		
Occupancy	August 2026	

SOURCE OF CASH FUNDS

The source of cash funds for the project is institutional reserves and fundraising.

OPERATING BUDGET

Operating expenses are paid from institutional sources. According to the university, increased operating costs resulting from hiring highly skilled technical support staff will be offset by long-term energy savings. The university estimates gross savings of $200,000-300,000 per year, and a payback period for the solar panels of 24 years.

STAFF QUESTIONS AND ISSUES

All responses have been incorporated into the project write-up.

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University
Maverick Center Renovation and Expansion

PROGRAM PLAN STATUS

2023-025

Approved Program Plan Yes **Date Approved:**

PRIORITY NUMBERS

Prioritized By	Priority	
CMU	1 of 4	
CCHE	15 of 30	
OSPB	Not Prioritized	Not recommended for funding.

PRIOR APPROPRIATIONS AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2023-24	FY 2024-25	Future Requests	Total Costs
CCF	$0	$42,805,679	$0	$0	$42,805,679
CF	$0	$4,809,092	$0	$0	$4,809,092
Total	$0	$47,614,771	$0	$0	$47,614,771

ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2023-24	FY 2024-25	Future Requests	Total Cost
Land Acquisition	$0	$1,921,152	$0	$0	$1,921,152
Professional Services	$0	$5,037,968	$0	$0	$5,037,968
Construction	$0	$37,086,560	$0	$0	$37,086,560
Equipment	$0	$751,744	$0	$0	$751,744
Miscellaneous	$0	$428,047	$0	$0	$428,047
Contingency	$0	$2,389,300	$0	$0	$2,389,300
Total	$0	$47,614,771	$0	$0	$47,614,771

PROJECT STATUS

This project was first requested for funding last year for FY 2022-23. This is its second request for funding.

Prepared by Legislative Council Staff

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University

Maverick Center Renovation and Expansion

PROJECT DESCRIPTION / SCOPE OF WORK

Colorado Mesa University (CMU) is requesting a combination of state funds and cash funds spending authority to renovate 10,790 GSF in the Maverick Center, and construct a 72,000-GSF sports arena in the Maverick Center Complex. The project also constructs nine tennis courts and supporting buildings on the edge of campus for dual use between the university and Grand Junction High School. The project supports the university's athletics program, numerous health care- and fitness-related academic disciplines, and special events.

The renovations will convert the 1,800-seat Brownson Arena to large classroom and general-purpose-learning flex spaces for use by health care and sports and recreation programs, and to house the Student Wellness Center. This space currently serves as the arena for CMU sports teams, club sports, and area high school athletic events.

The new arena will feature 300 bleachers for a student section, 1,100 fixed chairbacks, 1,100 telescopic chairbacks, and four 20-seat suites. Associated spaces include locker rooms, a staging area, a concourse and lobby, an event terrace, a concession area, a service yard and loading zone, parking, and an entry plaza. The arena will be connected to the Maverick Center and will rely on the center for base support facilities.

Cost assumption. The cost estimates for the project are based on the Mortenson Construction Denver Cost Index, and account for inflation. The cost per GSF is $278. The project complies with Art in Public Places and High Performance Certification Program requirements.

PROJECT JUSTIFICATION

CMU says construction of a new arena will help alleviate a space shortage for competitive and recreational athletics, support the Athletics program, and allow the university to host numerous campus and community events. CMU notes the importance of athletics to successes in academics, ethics, leadership, student retention, and community cohesion, and creation of career paths. The university also sponsors a robust Club Sport Department and intramural program, and explains that growth and participation in these programs is limited by demands on space, particularly when inclement weather places the needs of the Athletics program over those of club and intramural sports. The current Brownson Arena is not adequate to host graduations when weather precludes outdoor ceremonies.

The repurposed Brownson Arena will provide academic and flex space for programs in nursing, health information technology, radiology, kinesiology, fitness and health, outdoor recreation, occupational therapy, and other disciplines with in-demand career paths. CMU explains that the new space will allow it to engage in public/private partnerships, with students focusing on interdisciplinary learning experiences with regional employers and organizations. Partners include the VA Western Colorado Health Care System, Special Olympics, and Community Hospital. The renovations will allow the new classroom space to morph into a group exercise and staging area for use in kinesiology, sport performance, and other programs requiring large spaces, and the new space will host seminars, panel discussions, interprofessional and collaborative learning experiences, and continuing medical education programs. The new space will be located conveniently adjacent to other campus features used by the affected academic programs, such as the natatorium and Human Performance Center. Finally, CMU says the new space will provide a new home for the Student Wellness Center, which it says is currently housed in deteriorating leased space located off campus. This arrangement hinders the provision of services in areas such as stress and mental and behavioral health, the demands on which have increased recently.

CMU currently collaborates with Grand Junction High School and Grand Junction Parks and Recreation to share certain sports-related facilities. By constructing new tennis courts on the edge of campus near the site of the planned new high school, the university says it will be able to share resources and reduce costs.

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University

Maverick Center Renovation and Expansion

PROGRAM INFORMATION

Brownston Hall was constructed in 1968 as the university's indoor sports arena, and additionally hosts many community events such as high school basketball and wrestling tournaments, banquets, and concerts.

For academic year 2019-20 the university's Department of Health Sciences delivered about 12,000 credit hours of instruction, had 1,648 student majors, and awarded 271 degrees across its programs. The Department of Kinesiology delivered about 15,000 credit hours of instruction, had 861 student majors, and awarded 146 degrees. The university says about 18 percent of its student body will be served by the project's renovations.

The Athletics program has almost 800 athletes in 28 sports. The Club Sports Department consists of 500 students in 23 sports, and intramurals consists of 3,200 participants. Overall enrollment at the university is 6,800 undergraduate students.

PROJECT SCHEDULE

	Start Date	Completion Date
Design	June 2023	December 2023
Construction	January 2024	December 2024
Equipment	January 2025	March 2025
Occupancy	March 2025	

SOURCE OF CASH FUNDS

The source of cash funds for the project is internal resources, along with prior cash contributions to program planning and land purchase. The university says none of its cash contribution derives from student fees.

OPERATING BUDGET

The university expects the expansion elements of the project to result in increased operating costs of $740,078 per year, which it is prepared to accommodate without affecting state operating requests. Operating expenses are paid from institutional sources.

STAFF QUESTIONS AND ISSUES

None.

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University
Electrical and Computer Engineering Building

PROGRAM PLAN STATUS

2020-037

Approved Program Plan Yes **Date Approved:** July 31, 2018

PRIORITY NUMBERS

Prioritized By	Priority	
CMU	2 of 4	
CCHE	26 of 30	
OSPB	Not Prioritized	Not recommended for funding.

PRIOR APPROPRIATIONS AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2023-24	FY 2024-25	Future Requests	Total Costs
CCF	$0	$25,008,443	$0	$0	$25,008,443
CF	$0	$2,809,624	$0	$0	$2,809,624
Total	$0	$27,818,067	$0	$0	$27,818,067

ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2023-24	FY 2024-25	Future Requests	Total Cost
Land Acquisition	$0	$500,800	$0	$0	$500,800
Professional Services	$0	$1,664,629	$0	$0	$1,664,629
Construction	$0	$22,678,684	$0	$0	$22,678,684
Equipment	$0	$1,266,895	$0	$0	$1,266,895
Miscellaneous	$0	$250,008	$0	$0	$250,008
Contingency	$0	$1,457,051	$0	$0	$1,457,051
Total	$0	$27,818,067	$0	$0	$27,818,067

PROJECT STATUS

This is the fifth request for funding. Funding for the project was first requested for FY 2019-20. Colorado Mesa University (CMU) sought funding to construct a building for its Engineering and Computer Science programs in FY 2016-17. When the project was not funded, the university constructed the building using cash funds, rescoping the project to house the Engineering Department and the John McConnell Math and Science Center. The new building, now called Confluence Hall, opened in spring 2018.

Prepared by Legislative Council Staff

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University
Electrical and Computer Engineering Building

PROJECT DESCRIPTION / SCOPE OF WORK

CMU is requesting a combination of state funds and cash funds spending authority to construct a three-story, 38,481-GSF academic building to house its Electrical and Computer Engineering program and the Computer Science Department, and to provide space for growing engineering programs housed in the adjacent Confluence Hall. The new building will provide specialized learning space for several of the university's growing STEM programs, while freeing up vacated space for other growing disciplines. The new building includes:

- eight group study rooms;
- a 1,200-GSF multipurpose classroom;
- four computer labs;
- four project labs;
- two team shops;
- 14 student/faculty interactive spaces;
- a conference room;
- specialty labs, including labs for Unix/Linux, radio frequency, power measurement, circuits, servers, welding, and robotics;
- administrative support spaces; and
- food service space.

Laboratory space features program-specific equipment and work stations to facilitate collaborative, hands-on learning. The new building also includes a bridge connecting it to Confluence Hall.

Cost assumption. The cost assumption was determined through the program planning process and by using the costs for building Confluence Hall, escalated for inflation. The cost per square foot is $723. The project meets the Art in Public Places and High-Performance Certification Program requirements.

PROJECT JUSTIFICATION

The university says its campus lacks sufficient space to accommodate the growth of several of its engineering and computer science disciplines, and the space currently dedicated to these programs is operating at maximum capacity and is inadequate for the types of instruction involved. Growth in these programs is being driven by workforce demand for engineers and other STEM graduates on the Western Slope and beyond. The building's location will also supplement a growing campus engineering and computer science nexus, and help support partnerships with businesses located in a nearby enterprise zone. CMU also foresees growth in its Eureka! program as a result of the building's placement. This program brings math and science programming to K-12 students in the university's 14-county region. Finally, space vacated by programs moving to the new building will benefit other growing campus programs, including the Departments of Biology, Math and Statistics, and Physical and Environmental Sciences.

Project alternatives. CMU considered allocating space in Confluence Hall to new engineering programs, but this would have left the Computer Science Department in Wubben Hall, which is a third of a mile away, and would not have allowed for expansion of programs in Wubben. Confluence Hall's design reserved about 10,000 GSF to accommodate the Civil and Mechanical Engineering programs, but the addition of the Electrical and Computer Engineering program has outstripped the building's capacity. Finally, the university looked into renovating a nearby church for Electrical and Computer Engineering, but the building is not large enough to fit the entire program, and splitting the program between buildings would create inefficiencies. The university says it may be able to phase the project.

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University
Electrical and Computer Engineering Building

PROGRAM INFORMATION

CMU offers five engineering degree options: Bachelor of Science degrees in Mechanical Engineering, Civil Engineering, Electrical and Computer Engineering, and Mechanical Engineering Technology; and an Associate of Applied Science degree in Mechanical Engineering Technology. The university says it is one of only a handful of universities in the nation that offers this array of degrees within a single department. The last two years of CMU's bachelor's degrees in Mechanical Engineering, Civil Engineering, and Electrical and Computer Engineering are conducted jointly with the University of Colorado at Boulder, and faculty from the latter institution teach in residence at CMU. Graduates of the new Electrical and Computer Engineering program will have comprehensive knowledge and experience in the concepts and design of electrical, electronic, and computer devices, circuits, and systems, as well as experience in software development, according to the university.

The Computer Science Department offers a Bachelor of Science in Computer Science, an Associate of Science Liberals Arts Computer Science emphasis, and a Minor in Computer Science. CMU says co-locating Computer Science with Electrical and Computer Engineering will lead to efficiencies, since the engineering field draws heavily on computer science principles and students take classes across the two departments.

PROJECT SCHEDULE

	Start Date	Completion Date
Design	January 2023	December 2023
Construction	January 2024	December 2024
Equipment	January 2025	March 2025
Occupancy	March 2025	

SOURCE OF CASH FUNDS

The source of cash funds for this project is campus reserves and fundraising, along with prior cash contributions for land purchase and program planning. CMU notes that no student fee revenues will be used for the project.

OPERATING BUDGET

Operating expenses are paid from institutional sources. CMU estimates that the new building will cost $4.62 per square foot to operate, or $177,782 per year, and has budgeted for this cost.

STAFF QUESTIONS AND ISSUES

None.

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University
Student Parking Garage

PROGRAM PLAN STATUS

2013-024

Approved Program Plan Yes **Date Approved:** October 12, 2018

PRIORITY NUMBERS

Prioritized By	Priority	
CMU	3 of 4	
CCHE	28 of 30	
OSPB	Not Prioritized	Not recommended for funding.

PRIOR APPROPRIATIONS AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2023-24	FY 2024-25	Future Requests	Total Costs
CCF	$0	$25,935,943	$0	$0	$25,935,943
CF	$0	$2,913,826	$0	$0	$2,913,826
Total	$0	$28,849,769	$0	$0	$28,849,769

ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2023-24	FY 2024-25	Future Requests	Total Cost
Land Acquisition	$0	$0	$0	$0	$0
Professional Services	$0	$2,888,005	$0	$0	$2,888,005
Construction	$0	$22,965,620	$0	$0	$22,965,620
Equipment	$0	$347,491	$0	$0	$347,491
Miscellaneous	$0	$259,353	$0	$0	$259,353
Contingency	$0	$2,389,300	$0	$0	$2,389,300
Total	$0	$28,849,769	$0	$0	$28,849,769

PROJECT STATUS

This is the fourth request for funding. State funds were first requested for this project for FY 2020-21. Colorado Mesa University (CMU) requested cash funds spending authority in 2012 and 2016 to build a student parking garage, but the project was never initiated.

Prepared by Legislative Council Staff

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University
Student Parking Garage

PROJECT DESCRIPTION / SCOPE OF WORK

CMU is requesting a combination of state funds and cash funds spending authority to construct a 265,000-GSF, five-level, 818-space parking garage on the eastern end of the main campus to alleviate a commuter student parking deficit that has been exacerbated by construction on former surface lots. The garage will be made of pre-cast concrete and feature a panelized facade with a masonry aesthetic to blend with the existing campus architecture. All levels will be above grade and accessible through stairs and elevators. The new structure will be built on the site of an existing surface parking lot.

Cost assumption. The cost assumption was determined through the program planning process, and by consulting with contractors with experience building similar facilities for other universities. These contractors indicate that CMU can expect to pay $25,555 per space for construction. The cost per square foot $109, and the project accounts for inflation. The project meets the Art in Public Places and High-Performance Certification Program requirements.

PROJECT JUSTIFICATION

The CMU campus has a projected parking deficit of 904 spaces for the Fall 2022 semester. Surface parking lots have been lost due to construction of Engineering Center, the PA/PT/OT Center, and Aspen Apartments, and the development of the East/West Mall. CMU projects continued strong student population growth, both commuter and residential, particularly with the addition of several new academic programs. The university explains that there is limited land available near campus for expansion. A multi-level garage will allow vehicles to be consolidated into higher density parking, freeing up surface lots and parcels acquired by the university as sites for the construction of additional academic and residential facilities. CMU expects the project to result in a net gain of 510 spaces. The consolidation will also allow for easier parking enforcement.

Project alternatives. CMU considers building more surface parking lots to be the only alternative to the project, which the university does not consider the best use of available land. Additionally, the university says accelerated property acquisition will likely drive up land prices, and notes that surface parking lots are not optimal in terms of safety, campus aesthetics, and cost of upkeep.

PROGRAM INFORMATION

The CMU main campus parking inventory includes two parking garages and 13 residential, 13 commuter, five mixed, three value, two reserved, three faculty, six pay-to-park, and two retail surface parking lots with a total of 3,955 spaces. CMU says its commuter population is 7,601.

PROJECT SCHEDULE

	Start Date	Completion Date
Design	September 2023	October 2023
Construction	November 2023	December 2023
Equipment	December 2023	January 2024
Occupancy	January 2024	

SOURCE OF CASH FUNDS

The source of cash funds for this project is university internal funds or fundraising. The university notes that no student fee moneys will be used for the project.

OPERATING BUDGET

Operating expenses are paid from institutional sources.

Prepared by Legislative Council Staff

Fiscal Year 2023-24 Capital Construction Request

Colorado Mesa University
Student Parking Garage

STAFF QUESTIONS AND ISSUES

1. (Reproduced from last year's request.) Other institutions often cash fund parking garages using bonds to be repaid by parking revenues. Why has the university chosen not to do this?

The university has already funded the construction of two parking structures with bonds, repaid by net auxiliary revenues. The university has determined that, at this time, it is not financially able to fund additional parking structures with bond proceeds through parking fees. In recent years, CMU has had to fund its own academic buildings (e.g., Engineering, PA/PT/OT) thereby depleting resources available for other projects. Furthermore, the added parking is intended to serve primarily academic buildings which traditionally have been considered a responsibility of the state.