

COVER PAGE
Metropolitan State University of Denver

FY 2015-16 CAPITAL CONSTRUCTION REQUEST

Recommended for funding:

- Aerospace Engineering Sciences

Total: FY 2015-16 Capital Construction State-Funded Request Amount = \$ 14,720,872

FY 2015-16 CONTROLLED MAINTENANCE REQUESTS (3)

AURARIA HIGHER EDUCATION CENTER

Level I:

- Replace Fire Alarm Systems; West, Central, Rectory, St. Cajetans, and Children's College, Ph 2 of 2 (\$408,753)

Level II:

- Tenth Street Pedestrian Corridor ADA Improvements, Ph 3 of 3 (\$588,988)

Level III:

- Replace North Chiller Plant Chilled Water Lines, Ph 1 of 1 (\$424,036)

COVER PAGE (Cont.)
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ISSUES RAISED DURING FALL 2014 JOINT BUDGET COMMITTEE BRIEFINGS

1. The composite financial index score. The university did not achieve a composite score of 3.0 or greater, indicating "moderate financial health," in FY 2012-13 and FY 2013-14 data is currently unavailable.

HISTORY OF STATE FUNDING

- **\$5.3 million** has been appropriated on behalf of capital projects at the school since FY 2010-11. This represents **0.7 percent** of total amount appropriated on behalf of all capital construction and controlled maintenance projects during this period.
- **\$5.3 million** was appropriated in **FY 2014-15** for one capital construction project.

INVENTORY OF GENERAL FUND SUPPORTED FACILITIES

- The General Fund supported inventory of Auraria Higher Education Center facilities totals **2,152,979 GSF**. This total represents **4.9 percent** of the entire General Fund supported inventory of state buildings.

RECENT CDC VISITS

- Auraria Higher Education Center Campus (May 2013)

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PROGRAM PLAN STATUS

2015-010

Approved Program Plan? Yes No Date Approved:

PRIORITY NUMBERS

Prioritized By	Priority	
DeptInst	1 of 1	
CCHE	5 of 26	
OSPB	11 of 47	Prioritized and recommended for funding.

PRIOR APPROPRIATION AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
CCF	\$5,279,128	\$14,720,872	\$0	\$0	\$20,000,000
CF	\$0	\$16,404,160	\$23,595,840	\$0	\$40,000,000
Total	\$5,279,128	\$31,125,032	\$23,595,840	\$0	\$60,000,000

ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$2,778,000	\$1,131,000	\$1,093,105	\$0	\$5,002,105
Construction	\$0	\$29,944,032	\$20,978,521	\$0	\$50,922,553
Equipment	\$0	\$0	\$1,274,214	\$0	\$1,274,214
Miscellaneous	\$0	\$50,000	\$250,000	\$0	\$300,000
Contingency	\$2,501,128	\$0	\$0	\$0	\$2,501,128
Software Acquisition	\$0	\$0	\$0	\$0	\$0
Total	\$5,279,128	\$31,125,032	\$23,595,840	\$0	\$60,000,000

PROJECT STATUS

The project received funding for Phase I in FY 2014-15.

PROJECT DESCRIPTION / SCOPE OF WORK

Metropolitan State University of Denver (MSU Denver) is requesting state funds for the second phase of a three-phase project to construct a 141,900-GSF facility to support the development of an aviation, aerospace, and advanced manufacturing degree program. This year's request for Phase II finishes code review, prepares the site, and begins construction. Phase I designed the project and began code review. Phase III will finish construction and equip the building.

The project will allow the university to integrate the study of advanced-manufacturing disciplines such as aerospace science and aviation, including industrial design and engineering technology, into a single, new building in order to:

- foster collaborative research;
- create an integrated space for multiple programs with advanced technology and labs;

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- support an integrated curriculum; and
- create deeper industry ties.

The new building will relocate five existing departments, including: (1) aviation and aerospace science; (2) physics; (3) industrial design; (4) computer science; and (5) engineering technology. It will also support the development of a new department: advanced manufacturing, which will allow for the development of the aviation and aerospace advanced manufacturing degree program. The new program is being developed through a collaborative process involving the deans of each of the five departments listed above and various facility staff. To date, this group has met with industry stakeholders to begin developing a curriculum for the new program and to discuss potential public-private partnerships. It has also visited similar facilities in order to better understand industry expectations for graduates of science, technology, engineering, and math (STEM) programs.

The new facility will be constructed adjacent to the MSU Denver Student Success Building on the Auraria Higher Education Center (AHEC) campus. Once the new facility is open, space in existing campus facilities will be vacated for use by other MSU Denver departments or the other AHEC constituent institutions.

PROJECT JUSTIFICATION

According to MSU Denver, it is already an industry leader in providing advanced-manufacturing graduates to local corporations, particularly to Colorado's aerospace industry. The university says the creation of a new aviation, aerospace, and advanced Manufacturing degree program will lead to opportunities for federal funding. Additionally, the university says opening the new facility will positively impact Colorado's economy because it will lead to new job creation in STEM fields.

All five departments involved in the request have illustrated a need for additional classroom and lab space, says MSU Denver. The programs each have specialized labs and equipment. Sharing a facility will allow the university to avoid the expensive duplication of creating specialized lab facilities for each department. The university says it has identified opportunities for shared spaces in the new building in order to collocate multiple departments to the building and to eliminate the need to build and maintain multiple locations for various STEM departments within MSU Denver. This flexibility will permit student scheduling between departments and provide greater opportunity for collaboration among faculty and among faculty and staff.

PROGRAM INFORMATION

MSU Denver is a four-year, urban university located on the Auraria Higher Education Center campus. The university has the third-highest enrollment of undergraduate students in the state. In fall 2014, there were 21,179 undergraduate students, or 15,514 full time equivalent students, registered. Additionally, more than 6,000 MSU Denver students study in STEM fields and advanced manufacturing disciplines.

PROJECT SCHEDULE

	Start Date	Completion Date
Design	October 2014	July 2015
Construction	September 2015	June 2017
Equipment		June 2017
Occupancy		July 2017

HIGH PERFORMANCE CERTIFICATION PROGRAM

MSU Denver is dedicating \$960,000 of the project's total construction cost of \$50.9 million, or 1.9 percent, to the High Performance Certification Program. The university plans to build the facility to the LEED gold standard, the second

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highest of four possible certification levels.

SOURCE OF CASH FUNDS

The source of cash funds is bonds to be repaid from an existing student facility fee and gifts, grants, and donations. The university says it has the capacity to bond for the full \$40 million in cash funds dedicated to the project, but it anticipates that it will raise \$20 million through public/private partnerships and other donations.

OPERATING BUDGET

Operating expenses are paid from institutional sources. The university anticipates an additional 0.5 FTE and \$1.1 million per year will be needed to oversee building operations.

STAFF QUESTIONS AND ISSUES

1. The project description indicates that shared spaces within the new building will facilitate program functions for multiple departments. How does this model accommodate future growth beyond what is currently projected?

Using 2008-2014 enrollment data, the design team and University were able to establish recent growth patterns for each department and use these patterns to project future growth to for a ten-year horizon. This growth rate was calculated at an average of twenty-five percent growth for all five departments.

The design team worked with the University and used projected growth to arrive at overall faculty-student contact hour "demand" for each room. Total demand is the sum of existing demand, assumed growth, and the new Advanced Manufacturing Institute (AMI) related demand. This was compared to the contact hour "supply" that each room would provide in order to anticipate which rooms would be relatively under-utilized and which would be over-utilized. To get the best space utilization, different academic departments will be sharing laboratories and classrooms.

For the Advanced Manufacturing Institute, the University worked with the design team to make an allowance for growth related to the new curriculum. As a base assumption, the team anticipated that the Advanced Manufacturing Institute would set a goal to be in step with the average for Aviation, Computer Science, Engineering Technology, Industrial Design, and Physics. In total, these six programs will average roughly one hundred eighty (180) degrees on an annual basis. The Advanced Manufacturing Institute curriculum alone would account for a need of roughly 5,500 contact hours. Using these numbers, the design team verified that the current building design would accommodate the added contact hours for the five existing programs as well as the Advanced Manufacturing Institute.

2. How will the space vacated by the move of certain functions into the new building be repurposed? Is this space owned or leased? What agency will assume the costs associated with operating these spaces?

All space being vacated by these departments is currently leased through the Auraria Higher Education Center. MSU Denver has worked with University of Colorado Denver, AHEC, and Community College of Denver on space "swaps" scenarios for some of the space being vacated by these programs. The four institutions are working to move all programs to "neighborhoods". Space vacated in Boulder Creek will be turned over to CCD. Space vacated in North Classroom will be turned over to UCD. Space vacated in Seventh Street will be given to AHEC. In return, MSU Denver will receive equal space in the Administration Building.

Beginning in FY16, the University will begin a program plan for the vacated space and "swapped" space with the goal of repurposing it for other academic programs. Criteria for filling this vacated space will be developed to address academic departments that currently have insufficient space to meet student demand in certain programs such as the College of Business, Teacher Education, and Nursing.

3. What is the status of fundraising on behalf of the project?

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The AES task force has been meeting with industry leaders in the state of Colorado since the summer of 2013. Faculty and staff have taken numerous tours throughout the program plan process to discuss what the industry needs from their workforce and how MSU Denver can be a partner in reaching those goals. The University believes these meetings and tours have helped begin the process for requesting major gifts for the facility and the Advanced Manufacturing Institute.

The University and the Foundation Board have made this initiative its top fundraising priority and are beginning a campaign to recruit potential partners.

4. What advanced manufacturing equipment does the university anticipate will be donated? How will the additional equipment costs be funded if there are not sufficient donations?

Through the current design process, the management team will identify which furnishings and equipment can be reused and what needs to be replaced or added. This inventory will include classroom furniture, equipment, and office furniture. It will also include equipment specific to the development of the Advanced Manufacturing Institute's curriculum.

The project management team believes it can provide most of the new advanced manufacturing equipment through donations and grants and has current examples to show that this is possible.

Since completing the program plan in September of 2013, MSU Denver has received two major grants totaling \$1,038,100 in equipment specifically tied to developing curriculum in Advanced Manufacturing. The Colorado Helps Advanced Manufacturing Program (CHAMP) Grant was funded by the Department of Labor. MSU Denver partnered with eight community colleges on this grant. The goal of this project is to increase the attainment of manufacturing degrees and certificates that align with the industry's recognized competencies, skills and certifications to create a pipeline of highly qualified advanced manufacturing industry workers.

A second grant recently received came through a partnership with Denver Public Schools. This grant was through the Department of Labor's Youth CareerConnect Program. MSU Denver will develop curriculum and create a mobile fablab to engage DPS students in advanced manufacturing projects. Additional funds from this grant will be used to expand access to STEM education programming with MSU Denver as a four-year partner.

The University will pursue additional grant opportunities over the next three years and work with local engineering firms to identify the equipment that will be necessary to provide the curriculum tied to Advanced Manufacturing.