

**COVER PAGE**  
**Colorado School of Mines**

***FY 2015-16 CAPITAL CONSTRUCTION REQUEST***

***Recommended for funding:***

- Heating Plant Renovation (Capital Renewal Project)

**Total: FY 2015-16 Capital Construction State-Funded Request Amount = \$ 6,564,665**

***FY 2015-16 CONTROLLED MAINTENANCE REQUESTS (4)***

***Level I:***

- Replace Hazardous Laboratory Fume Controls, Campus, Ph 1 of 4 (\$911,427)

***Level II:***

- Campus Steam Branch Repairs, Ph 1 of 3 (\$663,964)
- Campus Primary Electrical Repairs, Ph 3 of 4 (\$418,770)

***Level III:***

- Repairs to Building Envelope, Guggenheim and Lakes Library, Ph 1 of 2 (\$286,765)

## **COVER PAGE (Cont.)**

### **Colorado School of Mines**

#### ***ISSUES RAISED DURING FALL 2014 JOINT BUDGET COMMITTEE BRIEFINGS***

1. The composite financial index score. The school has the strongest composite financial index of any state-funded higher education institution in Colorado.

#### ***HISTORY OF STATE FUNDING***

- **\$17.6 million** has been appropriated on behalf of capital projects at the school since FY 2010-11. This represents **2.5 percent** of total amount appropriated on behalf of all capital construction and controlled maintenance projects during this period.
- **\$15.6 million** was appropriated in **FY 2014-15** for one capital construction project and two controlled maintenance projects. The capital construction project, Meyer Hall Replacement, received an appropriation of \$14.6 million.

#### ***INVENTORY OF GENERAL FUND SUPPORTED FACILITIES***

- The General Fund supported inventory of department facilities totals **1,480,358 GSF**. This total represents **3.3 percent** of the entire General Fund supported inventory of state buildings.

#### ***RECENT CDC VISITS***

- Brown Hall, Robotics Research Lab, Meyer Hall, and Marquez Hall (June 2013)

# Fiscal Year 2015-16 Capital Construction Request

## Colorado School of Mines

*Heating Plant Renovation (Capital Renewal Project)*

### PROGRAM PLAN STATUS

2015-009

Approved Program Plan?

Date Approved:

### PRIORITY NUMBERS

Prioritized By	Priority	
CCHE	6 of 26	
OSPB	18 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	\$0	\$6,564,666	\$0	\$0	\$6,564,666
CF	\$0	\$6,564,666	\$0	\$0	\$6,564,666
<b>Total</b>	<b>\$0</b>	<b>\$13,129,332</b>	<b>\$0</b>	<b>\$0</b>	<b>\$13,129,332</b>

### 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	\$0	\$1,291,618	\$0	\$0	\$1,291,618
Construction	\$0	\$10,405,347	\$0	\$0	\$10,405,347
Equipment	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$238,790	\$0	\$0	\$238,790
Contingency	\$0	\$1,193,576	\$0	\$0	\$1,193,576
Software Acquisition	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$0</b>	<b>\$13,129,331</b>	<b>\$0</b>	<b>\$0</b>	<b>\$13,129,331</b>

### PROJECT STATUS

This is the second request for funding. Funding was requested on behalf of the project for FY 2014-15.

### PROJECT DESCRIPTION / SCOPE OF WORK

The Colorado School of Mines (Mines) is requesting a combination of state funds and cash funds spending authority for a capital renewal project to renovate the 15,888-GSF Heating Plant, which uses steam to provide heating, domestic hot water, and cooling to all of the major buildings on campus through tunnels and pipes. The capital renewal approach focuses on upgrading building systems, infrastructure, and the basic building components within existing state-owned buildings on a building-by-building basis, rather than the project-by-project approach used for controlled maintenance. The school says failure of the plant could shut down the campus.

The project will replace failing boiler equipment and address code and life-safety issues. Specifically, the project will:

- remove existing boiler infrastructure and install new boilers, stacks, piping, valves, deaerators, pumps, and controls;
- make structural modifications to the floors and walls;

# Fiscal Year 2015-16 Capital Construction Request

## Colorado School of Mines

### Heating Plant Renovation (Capital Renewal Project)

- replace the backup generator, electrical panels and devices, and lighting systems;
- install a new heating, cooling, and ventilation system;
- install fire doors, a second exit, a fire sprinkler system, and a fire alarm; and
- abate asbestos-containing materials.

A 2013 facility audit gave the Heating Plant a Facility Condition Index Rating (FCI) of 50, well below the Office of the State Architect's target rating of 85 for state buildings. This rating is a ratio of facility deficiencies to current replacement value. The audit noted that the building's foundation, roof, and exterior walls are in good condition. However, structural reinforcement at the walls is needed to meet current wind load requirements.

#### PROJECT JUSTIFICATION

Mines says the Heating Plant provides heating, cooling (through steam absorption chillers), and hot water to the major buildings on campus via steam, and the plant's failure could have severe consequences for the school, potentially shutting down the campus and jeopardizing the academic and research mission of the institution. Constructed in 1948, the Heating Plant has been serving the campus with two large steam boilers in place since 1970. In 2012, one of the boilers failed, requiring the school to procure an emergency replacement to maintain utility service; the replacement boiler was installed in a new metal building adjacent to the existing Heating Plant. Other components in the Heating Plant are also beyond their useful life.

Mines purchases excess steam from MillerCoors, which is delivered by way of a half-mile-long steam line buried under city streets. The school says the delivery line for this steam is increasingly unreliable due to corrosion and will eventually fail. Without a reliable source of steam, Mines says the school cannot function. If steam service were to halt during winter weather, buildings on campus could freeze causing property damage, while steam service interruption during the summer would halt the provision of cooling to several major academic and research facilities and disrupt domestic water heating for academic and student life functions. Completing the project will provide the campus with the reliable source of steam it needs, while eliminating reliance on MillerCoors as a redundant backup steam source. In addition, the project will bring the Heating Plant into code compliance, improving safety for individuals who work there.

In June of 2014, a new leak was identified in the steam line on MillerCoors property. The school says this will eventually require a two week shutdown of the steam supply to campus in order to repair the leak. Therefore, this unscheduled outage will leave the campus operating on only the recently installed replacement boiler without a backup supply when the repair occurs. Mines says this situation increases the critical nature of this request, as compared to the FY 2014-15 request.

#### PROGRAM INFORMATION

Founded in 1874, Mines is a public teaching and research university devoted to engineering and applied science, with expertise in natural resource development and stewardship. The Heating Plant has provided steam utility service to the campus since 1948. Mines says it began purchasing excess steam from the nearby MillerCoors co-generation plant to keep up with an ever increasing demand for steam on the campus.

#### PROJECT SCHEDULE

	Start Date	Completion Date
Design	October 2013	March 2015
Construction	July 2015	November 2017
Occupancy	November 2017	January 2018

# Fiscal Year 2015-16 Capital Construction Request

## Colorado School of Mines

*Heating Plant Renovation (Capital Renewal Project)*

---

### HIGH PERFORMANCE CERTIFICATION PROGRAM

Mines says it will seek a waiver from the High Performance Certification Program for the project, but it will utilize best practices in design and engineering to optimize building systems and components.

### SOURCE OF CASH FUNDS

The source of cash funds for the project is university general funds, which the university says are set aside annually for capital renewal.

### OPERATING BUDGET

Operating expenses are paid from institutional sources.

### STAFF QUESTIONS AND ISSUES

1. For FY 2014-15, Colorado School of Mines requested \$12.3 million for this project. This year, the request is for \$13.1 million, an increase of 6.7 percent. Please discuss the reasons for this increase. Additionally, the line items from the June 28, 2013 cost estimate performed by JE Dunn appear to be 11.78 percent lower across the board compared to the same line items requested as part of this project budget. Please explain this difference. If the new request is based on an updated detailed cost estimate, please provide it.

*The increase from \$12.3M to \$13.1 is due to construction cost escalation from the time of the original submittal to the time of the second submittal. The JE Dunn estimate only reflects raw construction cost and does not reflect overhead and profit (OH&P). Mines added the OH&P to the estimate, leading to the higher cost.*

2. Please provide more detail about the miscellaneous tap fee cost of \$238,790. Is this fee for domestic water and/or natural gas service?

*This is only the tap fee for domestic water.*

**Colorado School of Mines  
Five-Year Projection of Need  
FY 2015-16 through FY 2019-20**

Project Title	Fund Source	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	Totals
<i>Current Year Request(s)</i>							
Heating Plant Renovation (Capital Renewal Project)	CCF	6,564,666	0	0	0	0	\$6,564,666
	CF	6,564,666	0	0	0	0	\$6,564,666
<i>Out Year Request(s)</i>							
Green Center Renewal	CCF	0	0	6,000,000	35,000,000	4,000,000	\$45,000,000
	CF	0	0	0	0	0	\$0
<i>Total: State Funds</i>		6,564,666	0	6,000,000	35,000,000	4,000,000	\$51,564,666
<b>Grand Total</b>		<b>\$13,129,332</b>	<b>\$0</b>	<b>\$6,000,000</b>	<b>\$35,000,000</b>	<b>\$4,000,000</b>	<b>\$58,129,332</b>