**SOUTH DAKOTA BOARD OF REGENTS**

**Budget and Finance**

**AGENDA ITEM: 9 – D**
**DATE: June 26-28, 2018**

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**SUBJECT**

**BHSU Central Chiller Plant Upgrade Preliminary Facility Statement**

**CONTROLLING STATUTE, RULE, OR POLICY**

| | |
|---|---|
| SDCL 5-14-1 | Classification of Capital Improvements |
| SDCL 5-14-2 | Supervision by Bureau of Administration of Capital Improvement Projects – Payment of Appropriated Funds |
| SDCL 5-14-3 | Preparation of Plans and Specifications for Capital Improvements – State Building Committees – Approval by Board or Commission in Charge of Institution |
| BOR Policy 6:4 | Capital Improvements |
| BOR Policy 6:6 | Maintenance and Repair |

**BACKGROUND / DISCUSSION**

BHSU is submitting its Preliminary Facility Statement for the Upgrade of the Central Chiller Plant on campus. Black Hills State University is requesting approval to upgrade and expand the central chiller plant. The central chilled water system currently serves Woodburn Hall, E.Y. Berry Library, Bordeaux Hall, Jonas Academic, Jonas Science, Meier Hall, and David B. Miller Student Union. The Young Center currently has a stand-alone chiller that is beyond its life expectancy. The current central chiller system has a total cooling capacity of 825 tons with approximately 125 tons of future cooling capacity. The peak demand cooling load for new and existing air conditioning in the Young Center is 300 tons leaving the current system 175 tons short of serving the Young Center.

The project will accomplish the following:

- Expand the current central chiller plant with a 200 ton chilled water system coupled with a thermal storage system, which will provide up to an additional 50 tons of chilling capacity. The thermal storage will reduce the peak electrical demand for the BHSU campus due to load shifting of the chiller operating times.

(Continued)

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**DRAFT MOTION 20180626_9-D:**

I move to approve BHSU's Preliminary Facility Statement for the Upgrade of the Central Chiller Plant and further move that this M&R project be exempted from the capital improvement process requirements.

- Provide air conditioning to unconditioned space in the Donald E. Young Center including the first and second floor common areas, the Gymnasium, and the Fitness Center.
- Connect the existing chilled water piping system that serves the Young Center to the central plant with direct buried piping. This will include the Young Center in BHSU's automated building controls system allowing for better energy efficiency across the campus. It will also allow the campus to manage the central chiller system across a broader base, reducing peak demand loads and energy usage.
- Provide future chilled water connection locations and enough for a Wellness Center addition.

The total project cost is estimated at $1,700,000. Funding for this project will come from HEFF and General funded M&R projects including $466,625 of general fund M&R approved at the May 2018 Board of Regents meeting. Reallocation of previously approved HEFF M&R projects will fund $1.2 million. The only project that will be delayed due to the reallocation of funding is replacement of Young Center doors and windows.

**IMPACT AND RECOMMENDATIONS**

Due to the maintenance and repair aspect of this project, BHSU is requesting exemption from the remaining Capital Improvement Process. If approved, the Facility Program Plan and Facility Design Plan as defined in Board of Regents policy 6:4 are not required, nor is a State building committee. The Office of the State Engineer and TSP Architecture have been involved in the initial planning of this project.

**ATTACHMENTS**

Attachment I – BHSU Central Chiller Plant Upgrade Preliminary Facility Statement

# Black Hills State University
# Central Chiller Plant Upgrade

***Preliminary Facility Statement***

*A. General Programmatic Needs to be Addressed*

Black Hills State University is requesting approval to upgrade and expand the central chiller plant. The central chilled water system currently serves Woodburn Hall, E.Y. Berry Library, Bordeaux Hall, Jonas Academic, Jonas Science, Meier Hall, and David B. Miller Student Union. The Young Center currently has a stand-alone chiller that is beyond its life expectancy. The current central chiller system has a total cooling capacity of 825 tons with approximately 125 tons of future cooling capacity. The peak demand cooling load for new and existing air conditioning in the Young Center is 300 tons leaving the current system 175 tons short of serving the Young Center.

The project will accomplish the following:

- Expand the current central chiller plant with a 200 ton chilled water system coupled with a thermal storage system, which will provide up to an additional 50 tons of chilling capacity. The thermal storage will reduce the peak electrical demand for the BHSU campus due to load shifting of the chiller operating times.
- Provide air conditioning to unconditioned space in the Donald E. Young Center including:
    - First and second floor common/circulation areas
    - Gymnasium
    - Fitness Center
- Connect the existing chilled water piping system that serves the Young Center to the central plant with direct buried piping. This will include the Young Center in BHSU's automated building controls system allowing for better energy efficiency across the campus. It will also allow the campus to manage the central chiller system across a broader base, reducing peak demand loads and energy usage.
- Provide future chilled water connection locations and for a Wellness Center addition.

The total project cost is estimated at $1,700,000. Due to the maintenance and repair aspect of this project, BHSU is requesting exemption from the remaining capital improvement process. If approved, the Facility Program Plan and Facility Design Plan as defined in Board of Regents policy 6:4 are not required, nor is a State building committee. The Office of the State Engineer and TSP Architecture have been involved in the initial planning of this project.

*B. Analysis of the Student Body or Constituents to Be Served*

All BHSU faculty, staff, and students will benefit from this project with added air conditioning in the Young Center and a more efficient chiller system resulting in improved energy management for the university.

*C. Additional Services to Be Offered*

Air conditioning will be added to the gym, common areas, and fitness center in the Donald E. Young Center.

*D. Compliance with Master Plan*

NA

*E. Analysis of Needs Assessment Based on the Facilities Utilization Report*

NA

*F. Location*

The new chiller and thermal storage system will be located behind the facilities services building with the current central chiller plant.

*G. Reallocation of Old Space, if any*

NA

*H. Proposed Funding Source/Sources*

Funding for this project will come from HEFF and General funded M&R projects including $466,625 of general fund M&R approved at the May 2018 Board of Regents meeting. Reallocation of previously approved HEFF M&R projects will fund $1.2 million. The only project that delayed due to the reallocation of funding is replacement of Young Center doors and windows.

*I. Budget for Development of a Facility Program Plan*

NA