

SOUTH DAKOTA BOARD OF REGENTS

Budget and Finance

AGENDA ITEM: 6 – C
DATE: July 31 – August 1, 2024

SUBJECT

SDSU Swine Unit, Wean to Finish Barn Addition Preliminary Facility Statement (PFS)

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

South Dakota State University requests approval of this Preliminary Facility Statement to engage a design-build team to complete planning and construction of an addition to the existing Wean to Finish Swine Barn located north of the main campus in Brookings, SD.

IMPACT AND RECOMMENDATIONS

The success of the 2016 Swine Unit Teaching and Research facility has created the opportunity to further expand the existing facility to support teaching and research activities related to pig performance and production. To support this increased need, a new 600 head wean to finish barn addition with two rooms holding 300 animals each would be construction. In addition to animal holding areas, the addition would include a shower, laundry, bagged feed storage, and load-out areas. The project will be funded with private funds.

ATTACHMENTS

Attachment I – SDSU Preliminary Facility Statement for Swine Unit, Wean to Finish Barn Addition

DRAFT MOTION 20240731_6-C:

I move to approve SDSU’s Preliminary Facility Statement to complete planning and construction of a new addition to the Wean and Finish Swine Unit using private donations, and to appoint a building committee.



**SOUTH DAKOTA
STATE UNIVERSITY**

Facilities and Services
Box 2150, FS 100
South Dakota State University
Brookings, SD 57007-1698
Phone 605-688-4136
Fax: 605-688-4010

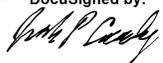
**SOUTH DAKOTA STATE UNIVERSITY
TRANSMITTAL AND APPROVAL FORM
Preliminary Facility Statement – Board of Regents Document**

Project Name: SWINE UNIT, WEAN TO FINISH BARN ADDITION

For consideration by the Board of Regents at the July 2024 meeting.

Date & Contact: 7/16/24, Facilities & Services – Jeni Kindt #5961

Recommended by:

DocuSigned by:

7/16/2024 | 20:31 PDT
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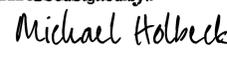
Dean, Director or Vice President Date

Department Contact Date
(As applicable)

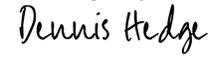
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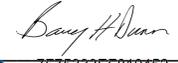
AVP, Facilities & Services Date

Endorsed by:

7/19/2024 | 13:15 PDT
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Michael Holbeck Date
Vice President for Finance & Budget

DocuSigned by:

7/19/2024 | 15:20 CDT
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Dennis Hedge Date
Provost/VP for Academic Affairs

Approved by:

7/20/2024 | 11:22 CDT
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Barry H. Dunn Date
President

Approved at the July 2024 Board of Regents Meeting

CC: Steve Erpenbach
SDSU Foundation 



**PRELIMINARY FACILITY STATEMENT
FOR
WEAN TO FINISH BARN ADDITION
SOUTH DAKOTA STATE UNIVERSITY
MAIN CAMPUS, BROOKINGS, SD
DATE: July 8th, 2024**

South Dakota State University requests approval of this Preliminary Facility Statement. Upon approval, the University and Office of the State Engineer would begin the process to engage a design-build team to complete planning and construction of an addition to the existing Wean to Finish Barn located north of the main campus in Brookings, SD. The University requests that a building committee be formed to execute the Board of Regents Design-Build Capital Improvement Process.

1. GENERAL PROGRAMMATIC NEEDS TO BE ADDRESSED:

The success of the 2016 Swine Unit Teaching & Research Facility has created the opportunity to further expand the existing facility to support teaching and research activities related to pig performance and production. Since the new Swine Unit opened on October 1, 2016, it has been one of the most productive research programs in the Animal Science Department and the College of Agriculture, Food, & Environmental Sciences. With 2.4 Research FTEs, the swine group published 97 journal articles (an average of 13.9/year) and mentored an average of 12 graduate students annually, with 2-3 of them being PhD candidates. From October 2016 to December of 2020, the Swine group received \$7.7 million in research grants & gifts, and from October 2016 to July 2024, they've received over \$12.5 million in grants & gifts from private industry, commodity groups, and the USDA. It should be noted that the entire cost of the Swine Unit in 2016 was \$7.4 million, with over 130 farm families, partners, & friends contributing significantly to the project. Currently, over 500 undergraduate students from multiple departments utilize the Swine Unit for academic, research, and a wide range of Extension/Outreach programs.

To support the increased need and success of the swine unit a new 600 head wean to finish barn addition with two rooms holding 300 animals each would be constructed. In addition to animal holding areas the addition would include a shower, laundry, bagged feed storage, and load-out areas. The expansion is critical to support the teaching, research, and outreach mission of the university and would be an economic benefit to the College of Agriculture, Food, & Environmental Science (CAFES) as it would enable the university to finish all pigs farrowed at the farm. CAFES currently produces 1200 more pigs per year than there is capacity to finish. The increased capacity would expand opportunities for graduate students and increase the capacity for grant funded research projects.

2. ANALYSIS OF THE STUDENT BODY OR CONSTITUENTS TO BE SERVED:

Undergraduate enrollment in the Animal Science Department has averaged 452 students over the past five years, with an additional 113 students pursuing an Animal Science minor. Swine Production is one of the senior Capstone classes in the department with 30 students enrolled every spring, and those students utilize the Swine Unit extensively for labs. Also, students enrolled in Intro to Animal Science and Reproductive Physiology get hands-on experiences at the Swine Unit, as well as students from Ag & Biosystems Engineering. Besides providing research opportunities for Graduate students, there are 11+ undergraduate students annually involved in undergraduate research, and 12+ students/year work at the Swine Unit. Also, there are approximately 15 undergraduate students enrolled in the national Swine Science Online program annually, and the swine industry is one of the top employers of the students not returning home to the farm or ranch.

3. ADDITIONAL SERVICES TO BE OFFERED:

The needs identified above constitute a response to opportunities that would allow the university to operate more efficiently and expand educational and research opportunities. The new addition would support research in nutrition, physiology, meats science, veterinary science, human nutrition, and Pharmacy. The expansion would increase opportunities to model varying environments and conditions for raising swine and the impact on profitability of environmental conditions, allow for expanded human nutrition, and pharmaceutical research. The expansion would also serve as a demonstration facility for extension programs for producers, industry, and the public.

4. COMPLIANCE WITH COMPREHENSIVE CAMPUS PLAN:

This project is an extension of the self-study identifying potential educational offerings, research opportunities, and production capabilities of the Animal Science Department. The need is centered around the success of the 2016 Swine Teaching & Research capital improvement project. It has been endorsed by the South Dakota Corn Growers Association and swine industry representatives. As this is an off-campus location, the facility planning is not related directly to the campus masterplan guidelines but follows the university's goals to improve existing facilities in support of academic and research goals.

5. ANALYSIS OF NEEDS ASSESSMENT BASED ON THE FACILITIES UTILIZATION REPORT:

With the current inventory of 150 sows (5 groups of 30 sows/group), the Swine Unit weans 300+ piglets/group monthly, and each four of the groups go to one of the four wean-to-finish rooms for nursery & finishing pig research. Currently, we are booked 6 months out on research in these four rooms. However, the university must sell the next two groups on the open market since there is not capacity for them, and that happens twice a year. This results in a significant loss in research productivity (4 nursery and 4 finishing trials annually for a minimum of \$270,000). Also, it is very difficult to find buyers for small groups of weaned pigs so the university receives a discounted price for the 4 groups of weaned pigs sold each year. The typical loss is around \$30/pig or a total of lost revenue for the Livestock Revolving Fund of \$36,000 a year. With the

addition of the two new rooms, the Animal Science Department would be able to increase nursery & finishing pig research by 50%, and sell all pigs at market weight, which would alleviate the loss to the Livestock Revolving Account, and in most years would enhance it. Also, due to a vacancy and upcoming retirement, two new swine faculty will be hired in the next 3 years. To attract top candidates for these positions and maintain the current trajectory of the program, it is essential that they have excellent facilities to allow them to succeed.

6. LOCATION:

The new barn would be an addition to the existing Wean-to-Finish Barn located at the SDSU Swine Unit one mile North of the main campus on Medary Avenue. The Swine Unit is one of the SDSU Agricultural Experiment Station sites.

7. REALLOCATION OF OLD SPACE, IF ANY:

The project would not impact existing space. The existing barn, office, and support facilities would remain operational. The new addition would leverage existing program space and utilities to reduce the economic impact and space need requirements of the additional wean-to-finish barn.

8. PROPOSED FUNDING SOURCE/SOURCES:

The project would be funded with private donations.

9. BUDGET FOR DEVELOPMENT OF A FACILITY PROGRAM PLAN:

The University would engage a design-build team to plan, design, and construct the addition. The university has determined the design-build delivery method would be the most beneficial method for this type and scope of project. This method of delivery would streamline the design process, provide timely cost-estimating services, and specialized agricultural building construction expertise. The cost for preliminary planning services is estimated to be around \$30,000.

10. BUILDING DESIGN CONCEPTS AND ELEMENTS INCLUDED:

The project would include an addition to the existing Swine Teaching & Research Wean-to-Finish Barn. The programmatic space would include a 650-head wean-to-finish barn, shower expansion, laundry, bagged feed storage, and load-out areas. The barn would be planned as a deep pit barn, accommodating 52 to 56 pens, two groups of 325 animals, and turnover twice per year. The construction would be a combination of concrete substructure and wood frame superstructure with metal cladding to match the existing Wean-to-Finish Barn.

End of Report