

SOUTH DAKOTA BOARD OF REGENTS

Budget and Finance

REVISED
AGENDA ITEM: 7 – F
DATE: December 11-12, 2024

SUBJECT

SDSU Swine Unit, Wean to Finish Barn Addition Facility Program Plan (FPP)

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 (SDSU) requests approval of this Facility Program Plan (FPP) and formation of a building committee. The Preliminary Facility Statement (PFS) was approved at the July 30-August 1, 2024, Board of Regents meeting.

IMPACT AND RECOMMENDATIONS

To support the growing needs and success of the swine unit, a new 600-head wean-to-finish barn will be constructed. The barn will consist of two rooms, each capable of holding 300 animals. In addition to the animal holding areas, the facility will include a locker room, laundry, bagged feed storage, and load-out areas to support the swine unit’s operations. Currently, the university produces 1,200 more pigs per year than it has the capacity to finish. This expansion will provide an economic benefit to the College of Agriculture, Food, & Environmental Science (CAFES) by allowing the university to finish all pigs farrowed on the farm. The increased capacity will also create more opportunities for graduate students and expand the scope for grant-funded research. In addition to research the expanded facility will offer more hands-on learning opportunities, closely replicating the experience of a private production facility.

(Continued)

DRAFT MOTION 20241211_7-F:

I move to approve the Facility Program Plan for SDSU’s barn addition at an amount not to exceed \$1,600,000 to be funded with private donations. A building committee representative should be appointed to oversee this project.

The project involves expanding the existing wean-to-finish at the Swine Unit, located north of the SDSU main campus in Brookings. The new building will connect to the existing utilities for power, water, and sanitary sewer. The project will increase the capacity of the existing wean-to-finish barn by 50%, enabling the College of Agriculture, Food, and Environmental Sciences to operate more efficiently and expand research and educational opportunities.

The addition will connect to the existing wean-to-finish barn entry and maintain biosecurity protocols, including shower-in locker rooms and isolated access corridors leading to the animal handling areas in each barn. The new barn will be divided into two rooms, each holding up to 300 animals.

Approximately 9,500 total square feet will be added, at a cost of approximately \$1,600,000.

The project budget is as follows:

Probable Project Cost	
Description	Cost (\$)
General Construction Costs	
General Construction	\$ 1,280,000
Subtotal	1,280,000
Incidental Costs	
Equipment & Fixtures	\$ 100,000
Construction Contingency	\$ 120,000
Subtotal	220,000
Soft Costs	
Professional Services, Testing, Excise	\$ 100,000
Subtotal	100,000
PROBABLE PROJECT COST	\$ 1,600,000

Additional details of the Facility Program Plan can be reviewed in Attachment I.

ATTACHMENTS

Attachment I – SDSU Swine Wean to Finish Barn Addition FPP

**FACILITY PROGRAM PLAN
FOR
WEAN-TO-FINISH BARN ADDITION
SOUTH DAKOTA STATE UNIVERSITY
MAIN CAMPUS, BROOKINGS, SD**

DATE: October 29th, 2024

SDSU requests approval of this Facility Program Plan and formation of a building committee.

The Preliminary Facility Statement (PFS) was approved at the July 30th - August 1st, 2024, Board of Regents meeting.

a. Programmatic justification for discrete spaces

To support the growing needs and success of the swine unit, a new 600-head wean-to-finish barn will be constructed. The barn will consist of two rooms, each capable of holding 300 animals. In addition to the animal holding areas, the facility will include a locker room, laundry, bagged feed storage, and load-out areas to support the swine unit's operations. Currently, the university produces 1,200 more pigs per year than it has the capacity to finish. This expansion will provide an economic benefit to the College of Agriculture, Food, & Environmental Science (CAFES) by allowing the university to finish all pigs farrowed on the farm. The increased capacity will also create more opportunities for graduate students and expand the scope for grant-funded research. In addition to research, the expanded facility will offer more hands-on learning opportunities, closely replicating the experience of a private production facility.

b. Gross Square Footage

Wean-to-Finish Barn Addition Space Program

Program Function	Space Use Code*	Gross Square Footage (GSF)	Notes
Animal Facilities**	570	8,400	Animal handling area, 600 head wean-to-finish barn, load-out, feed storage
Building Service	XXX	950	Restrooms, Custodial, Vending, IT, Electrical and Mechanical
Circulation Space	WWW	150	General Building Circulation and Entrance Lobby
Total GSF		9,500	

**Space use codes as defined by the National Center for Education Statistics Facilities Inventory and Classification Manual (FICM)*

***All spaces will be heated and ventilated. Animal facilities will not be mechanically cooled.*

c. Site Analysis

The project involves expanding the existing wean-to-finish at the Swine Unit, located north of the SDSU main campus in Brookings. The new building will connect to the existing utilities for power, water, and sanitary sewer. Excavation will be necessary for footings, top-soil removal, the barn's deep-pit manure collection system, and the expansion of access drives. The current access drives will be extended to the east to facilitate access to feed bins, manure pump-out ports, and the animal load-out chute in the new barn.

Animal waste from the new barn will be stored in a deep-pit structure constructed designed in compliance with the South Dakota Department of Agriculture and Natural Resources (DANR) regulations. These regulations are outlined in SD DANR's general water pollution control permit for Concentrated Animal Feeding Operations (CAFO). The facilities must provide a minimum of 270 calendar days of storage, but the design objective is to provide 365 days of storage. This additional capacity offers greater flexibility in implementing nutrient management activities.

The project will increase the capacity of the existing wean-to-finish barn by 50%, enabling the College of Agriculture, Food, and Environmental Sciences to operate more efficiently and expand research and educational opportunities.

d. Description of key building features

The addition will connect to the existing wean-to-finish barn entry and maintain biosecurity protocols, including shower-in locker rooms and isolated access corridors leading to the animal handling areas in each barn. The new barn will be divided into two rooms, each holding up to 300 animals. The pens within the animal handling areas will be designed for flexibility to accommodate various research group sizes. The barn will feature a side wall and soffit ventilation system to cool the animals and maintain healthy air quality, along with a suspended rail feeder system and automated waterers for hydration and cooling.

The facility will be constructed with a concrete footing and foundation system, deep-pit manure collection, precast floor slats, an insulated wood frame superstructure, and metal panel exterior cladding to match the existing structure. The interior will be finished with industrial grade materials commonly used in agricultural facilities. The barn will be designed to allow access for agricultural machinery and will provide adequate space for animal handling, storage, and equipment servicing.

e. Illustrative floor plans

A conceptual floor plan and sections of the barn addition and support spaces are attached.

f. Initial cost estimates

The probable construction cost is \$1,200,000. The project is currently in the schematic design phase. Updated cost estimates will be developed with the design build contractor as the project progresses through design development and construction documentation.

Probable Project Cost

Description	Cost (\$)
General Construction Costs	
General Construction	\$ 1,280,000
Subtotal	1,280,000
Incidental Costs	
Equipment & Fixtures	\$ 100,000
Construction Contingency	\$ 120,000
Subtotal	220,000
Soft Costs	
Professional Services, Testing, Excise	\$ 100,000
Subtotal	100,000
PROBABLE PROJECT COST	\$ 1,600,000

g. Impact to M&R

Estimated annual funding for maintenance, repair, and capital renewal for this type of agricultural production facility would be equal to 1% to 1.5% of the construction costs or the building replacement value. The annual M&R allocation is estimated to be between \$12,000 and \$18,000 to support the lifecycle maintenance and repairs of the facilities.

h. Budget for ongoing operational expenses

The entry and locker rooms will be ventilated and heated. Annual utility expenses for the addition are estimated to be \$2,000 and routine maintenance expenses are estimated to be approximately \$1,200 based on similar facility types. The simplicity of the facility, connection to the existing wean-to-finish barn, and basic mechanical systems may reduce these estimated operational expenses.

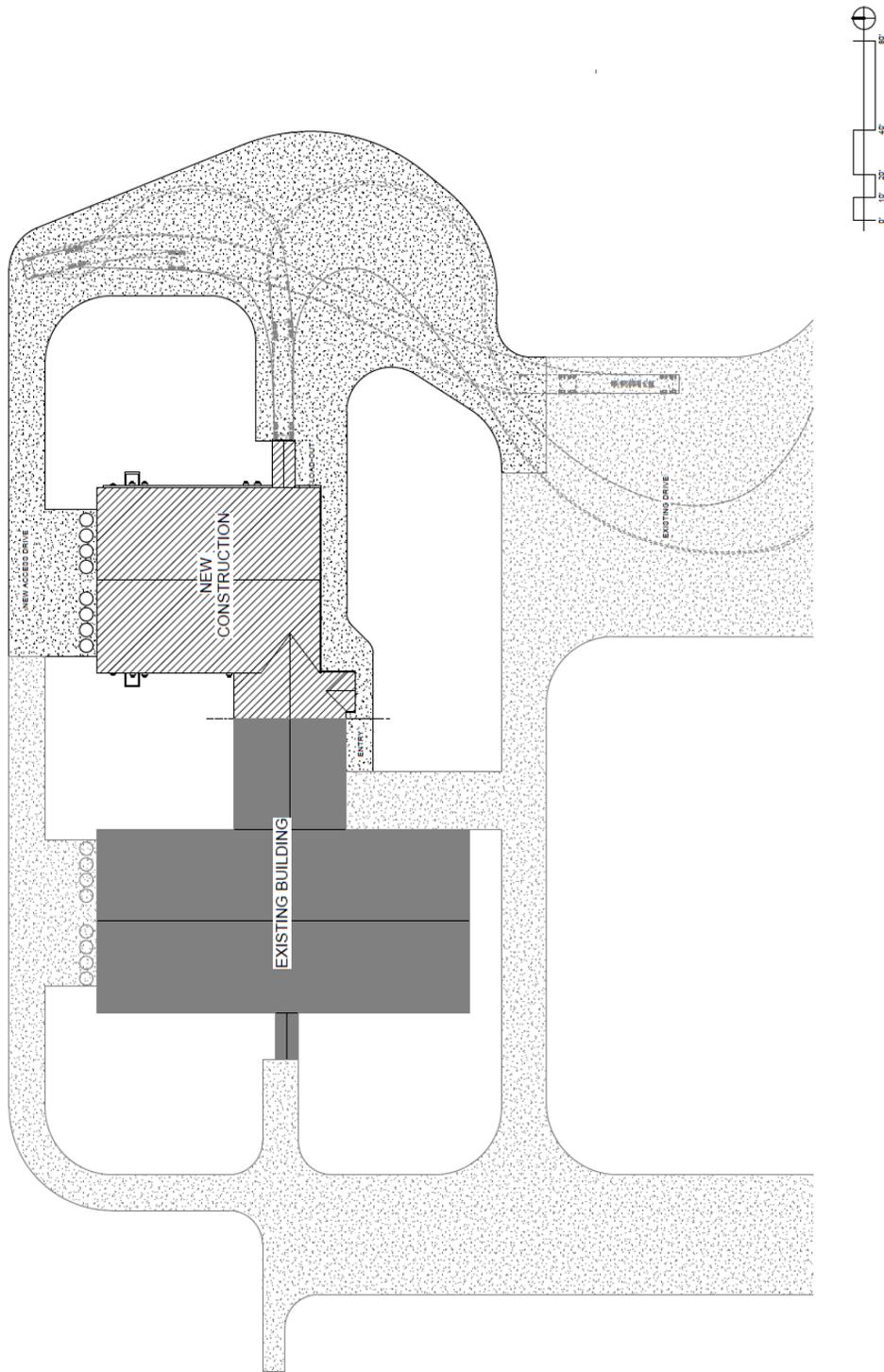
i. Proposed funding sources

Funding Sources

Construction	
Private Donations	\$ 1,600,000
Total	\$ 1,600,000
Utilities, Operations, Maintenance & Repairs	
Agriculture Experiment Station & Production Revenue	\$ 15,000
Total	\$ 15,000

End of report

SITE PLAN



BUILDING SECTIONS

