

SOUTH DAKOTA BOARD OF REGENTS

Budget and Finance

AGENDA ITEM: 6 – F
DATE: October 5-6, 2022

SUBJECT

SDSU Research High Tunnels 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 is submitting its Preliminary Facility Statement for the construction of two pre-engineered high tunnel structures, constructed by two 30 foot by 96 foot solar-heated, passively ventilated, and plastic covered structures. SDSU requests exemption from the remainder of the Capital Improvement Project process due to the limited scope of the project and definition of new construction.

Constructing high tunnels specifically for research and teaching at SDSU would allow research, teaching, and Extension staff and faculty to expand opportunities and reduce barriers to maximizing the potential of high tunnels for South Dakota, crop producers and SDSU Students.

Additionally, high tunnel research and training would benefit specialty crop service providers including Extension agents, non-profit partner organizations, and USDA NRCS conservationists. High tunnel would allow SDSU to be competitive for state and local research dollars and expand multistate collaboration opportunities as land grant universities across the Midwest.

(Continued)

DRAFT MOTION 20221005_6-F:

I move to approve SDSU’s Preliminary Facility Statement for construction of two Research High Tunnels funded through a combination of federal grants and other institutional funds.

Proposed Funding

Based on industry cost data, the probable project cost would be \$123,000. The funding source for the project would be a combination of FY22 Department Funds (\$3,000.00), FY23 Federal Grant Funds (\$103,000.00) and FY23 Department Funds (\$17,000.00). SDSU requests that the project be exempted from the remainder of the Capital Improvement Project process.

IMPACT AND RECOMMENDATIONS

SDSU requests approval of this Preliminary Facility Statement for the construction of two pre-engineered high tunnel structures. The high tunnels would benefit the growth population of specialty crop producers across South Dakota through needed applied research and education. The tunnels would be located on the east side of the main campus approximately 1,1000 feet to the north of University Boulevard. The proximity of the high tunnels is important to both research and students.

ATTACHMENTS

Attachment I – Research High Tunnels (PFS)

**PRELIMINARY FACILITY STATEMENT
FOR
SPECIALTY CROPS, VEGETABLE, AND CUT FLOWER
RESEARCH HIGH TUNNELS
SOUTH DAKOTA STATE UNIVERSITY
PREPARED: SEPTEMBER 1, 2022**

South Dakota State University (SDSU) requests approval of this Preliminary Facility Statement for construction of two pre-engineered high tunnel structures on the east side of the main campus. SDSU requests exemption from the remainder of the Capital Improvement Project process due to the limited scope of the project and definition of new construction as contained in SDCL 5-14-32.

1. GENERAL PROGRAMMATIC NEEDS TO BE ADDRESSED:

The intent of this project is to construct two 30 foot by 96 foot solar-heated, passively ventilated, plastic-covered structures on the east side of the main campus of South Dakota State University for a total of 5,760 square feet of specialty crop research space. The main components of these structures are the galvanized tube steel frame covered with clear plastic and end walls built of clear polycarbonate sheets mounted on a steel end wall frame. The frame arch shape would be gothic, or slightly pointed, to better shed the snow loads of our climate. The tube steel arches are spaced four feet apart and extend into the ground five feet. Every-other arch would be encased in concrete below ground to help with stability over the fifteen-year average useful lifespan of these high tunnels. The overall structure height is eighteen feet from ground to top of the arch.

As indicated by the most recent Census of Agriculture, specialty crop farms are increasing in South Dakota, and the number of those farms growing crops under protection, in greenhouses and high tunnels, is also on the rise. High tunnels can serve as an important tool for the expansion of the local food economy across South Dakota as small and diversified farms use high tunnels to grow seasonal fruits and vegetables that are marketed directly to consumers. In addition to extending the growing season, research has strongly indicated that high tunnels can increase yield, enhance shelf life, and improve the quality of crops grown. However, questions remain regarding how to improve high tunnel production systems including soil health management and identifying the best producing and most profitable cultivars and crop rotations. Constructing high tunnels specifically for research and teaching at South Dakota State University would allow research, teaching, and Extension staff and faculty to expand opportunities and reduce barriers to maximizing the potential of high tunnels for South Dakota specialty crop producers and SDSU students.

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

Investing in high tunnel research at South Dakota State University would align SDSU's undergraduate and graduate training programs with other Midwest land-grant universities. Undergraduate students would have opportunities to receive hands-on high tunnel research training through paid research assistantships, class visits, and undergraduate capstone courses that include horticultural research experience. The high tunnels would be used for research projects led by graduate students who would manage research projects and receive training that is critical to stay relevant in the field of applied horticulture at a national level.

High tunnels constructed for research at South Dakota State University would benefit the growing population of specialty crop producers across South Dakota through needed applied research and education. Extension programming would include training on high tunnel construction, management, and cropping innovations. Additionally, high tunnel research and training would benefit specialty crop service providers including Extension agents, non-profit partner organizations, and USDA NRCS conservationists. Each year the NRCS EQIP High Tunnel initiative is used to support construction of high tunnels on South Dakota farms, and research and training from SDSU can support the success of specialty crop farmers who are using high tunnels for the first time. High tunnels as a research structure would allow SDSU to be competitive for state and federal research dollars and expand multistate collaboration opportunities as land grant universities across the Midwest work to support specialty crop farmers who want to expand market share in fruit and vegetable production to strengthen local economies.

3. ADDITIONAL SERVICES TO BE OFFERED:

These research high tunnels would be complimentary to the dedicated teaching high tunnel located at the Local Foods Education Center with teaching and research outcomes serving in tandem to ensure that South Dakota State University remains on the forefront of student education.

4. COMPLIANCE WITH CAMPUS MASTER PLAN:

This project complies with the fundamental planning concepts contained in the 2025 Master Plan by grouping land uses into functional districts. The area where this project is planned is currently used for crop research and there is a research support building nearby. These uses are compatible and synergistic with high tunnel crop research.

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

In 2016 the university engaged a consultant to analyze existing research space on campus and project future needs. The study identified a need of approximately 3,600 net assignable square feet of field and specialized space for plant science research. The high

tunnel structures would address the current need for research space and create opportunities for additional research and academic activities.

6. LOCATION:

The high tunnels would be located on the east side of the main campus of South Dakota State University approximately 1,000 feet to the north of University Boulevard on crop research fields that are currently at the end of, or in between research projects. This site was selected with careful attention to the history of the fields and their herbicide use, prevailing wind patterns and exposure, and access to water and electricity for crop growing activities. The proximity of the high tunnels to the main campus is important for both researchers and students.

7. REALLOCATION OF OLD SPACE, IF ANY:

The research activities in these fields would be relocated to other fields managed by the college with minimal disruption to current operations.

8. PROPOSED FUNDING SOURCE/SOURCES:

SDSU intends to procure and erect the pre-engineered high bay structure. Site grading would be procured through existing standing contracts. The following are projected sources of funding for this project contingent on grant funding. All sources are applicable to the scope identified.

FY22 – Department Funds (Planning)	\$ 3,000
FY23 – Federal Grant Funds	\$ 103,000
<u>FY23 – Department Funds</u>	<u>\$ 17,000</u>
Total potential allocated funding -	\$ 123,000

9. BUDGET FOR DEVELOPMENT OF A FACILITY PROGRAM PLAN:

SDSU requests that the project be exempted from the remainder of the Capital Improvement Project process. The project has a cost of less than one million dollars, contains less than 10,000 square feet, and does not have a heating, ventilation, or air conditioning system and therefore does not meet the criteria for “new construction” as defined by SDCL 5-14-32.