

**SOUTH DAKOTA BOARD OF REGENTS**

**Budget and Finance**

**AGENDA ITEM: 6 – G**

**DATE: April 1, 2020**

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**SUBJECT**

**SDSU Transfer HEFF Funding from McFadden Biostress to Berg Hall, Phase II of Raven Precision Ag Project**

**CONTROLLING STATUTE, RULE, OR POLICY**

[BOR Policy 6:6](#) – Maintenance and Repair

**BACKGROUND / DISCUSSION**

SDSU requests authority to redirect \$5.5M of HEFF dollars from the McFadden Northern Plains Biostress Lab to the renovation of Berg Hall. Additionally, they request the authority to prepare a schematic design and estimate of the Raven Precision Ag Phase II, the renovation of the first and second floors of Berg Ag Hall. This \$5.5M would be a subset of the \$8.9M of authority SDSU has under HB1264 to complete the Berg Hall renovation. The Berg Hall renovation also has private fundraising of \$1.0M from SD Corn that must be used for this remodel. Combined, this \$6.5M in funding would be available for renovation of Berg Hall plus any savings from the Raven Precision Ag or additional private fundraising could be used to complete the renovation project up to the approved authority amount of \$8.9M.

This request involves two projects:

First, the Raven Precision Ag project was approved for \$55M in HB1264 and is composed of two parts - \$46.1M for the new construction of the Raven Precision Ag Building, and \$8.9M for the renovation of the first and second floors of Berg Hall (total project approval of \$55M). The Raven Precision Ag building bill (HB1264) passed included funding for a \$20 million bond to be funded with money from Coop Extension (\$250,000 per year), a fertilizer tax, and money from an ethanol program that is no longer needed for its original purpose. SB183 also passed, which creates the fund to pay the Precision Ag building bonds. The funding plan passed by the Legislature to fund the Raven Precision Ag building is as follows:

(Continued)

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**DRAFT MOTION 20200401\_6-G:**

I move to authorize SDSU to transfer \$5.5M in HEFF funding previously approved for use in renovations and upgrades to the McFadden Northern Plains Biostress Lab to be used in Phase II of the Raven Precision Ag Project.

- One-time General Fund Appropriation - \$2.0 million
- Private Funding - \$16.6 million
- SDSU Funding - \$7.5 million
- Bond - \$20.0 million, estimated payment of \$1,375,000 per year, from the following sources:
  - \$650,000 per year – Expiring Ethanol Fund
  - \$475,000 per year – Fertilizer Inspection Fee Increase of \$0.25 per ton
  - \$250,000 – Ongoing General Fund cut from Coop Extension

The second project, which is unrelated to Raven Precision Ag, is the McFadden Northern Plains Biostress Lab Exhaust Systems Renovation and Upgrade (approved using \$5.5M of HEFF dollars by the BOR in December 2019: Item 6-I). SDSU’s request is to cancel this project and transfer the \$5.5M funding to the Berg Hall Renovation project.

Below is a table comparing the funding for the two projects as approved on the left, and the proposed reallocation of funds on the right.

<b>Original (Precision Ag Approved 3/22/18)</b>			<b>Updated Request (2/18/20)</b>	
<b>Projects approved</b>			<b>Projects approved</b>	
Precision Ag (HB1264)	46.1		Precision Ag (HB1264)	46.1
Berg Hall (HB1264)	8.9		Berg Hall (HB1264)	8.9
Sub-Total	<b>55.0</b>		Sub-Total	<b>55.0</b>
Biostress Lab Exhaust System (funded by HEFF)	5.5		Biostress Lab Exhaust System (funded by HEFF)	-
<b>Total Approved</b>	<b>60.5</b>		<b>Total Approved</b>	<b>55.0</b>
<b>Sources</b>			<b>Sources</b>	
Bond (see sources below)	20.0		Bond (see sources below)	20.0
State General Funds	2.0		State General Funds	2.0
Private Fundraising	16.6		Private Fundraising	16.6
SDSU Funding	7.5		SDSU Funding	7.5
Other Fund Authority (Berg Hall HB1264)	8.9		HEFF (previously Biostress, now Berg)	5.5
			Berg Hall Private Fundraising	1.0
			Other Fund Authority (Berg Hall HB1264)	2.4
			<b>55.0</b>	
HEFF(for Biostress)	5.5		HEFF(for Biostress)	-
<b>Total Sources</b>	<b>60.5</b>		<b>Total Sources</b>	<b>55.0</b>

**IMPACT AND RECOMMENDATIONS**

None

**ATTACHMENTS**

Attachment I – HB1264

Attachment II – SB183

Attachment III – Agenda Item: 6 – I; Date: December 11-12, 2019

## AN ACT

ENTITLED, An Act to authorize the construction of the precision agriculture building and certain renovations at South Dakota State University, to make an appropriation therefor, and to declare an emergency.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF SOUTH DAKOTA:

Section 1. The Board of Regents is hereby authorized to contract for the demolition of existing facilities, removal of rubbish, site preparation, construction, furnishing, and equipping of a precision agriculture classroom and laboratory building and renovation of the first and second floors of Berg Agriculture Hall at South Dakota State University, together with furnishings and equipment, including heating, air conditioning, plumbing, water, sewer, electric facilities, sidewalks, parking, landscaping, architectural and engineering services, asbestos abatement, and such other services or actions as may be required to accomplish the project for an estimated cost of fifty-five million dollars, subject to permitted adjustments pursuant to section 3 of this Act.

Section 2. There is hereby appropriated for the purposes authorized in this Act the sum of fifty-five million dollars (\$55,000,000), or so much thereof as may be necessary, in other fund expenditure authority and two million dollars (\$2,000,000), or so much thereof as may be necessary, from the general fund, together with any additional sums received pursuant to section 5 of this Act, and permitted adjustments pursuant to section 3 of this Act. Two hundred fifty thousand dollars in the General Appropriations Act was reduced from the cooperative extension service at South Dakota State University to be applied for the purposes authorized in this Act. Any general funds appropriated in this section shall be transferred to the precision agriculture fund.

Section 3. The cost estimates contained in this Act have been stated in terms of 2017 values. The Board of Regents may adjust such cost estimates to reflect the inflation as measured by the Building Cost Index, reported by the Engineering News Record, and additional expenditures required to

comply with regulations adopted after the effective date of this Act, or additional sums received pursuant to section 5 of this Act. However, any adjustments to construction cost estimates for the project may not exceed one hundred twenty-five percent of the estimated project construction cost stated in section 1 of this Act.

Section 4. The South Dakota Building Authority may finance the precision agriculture classroom and laboratory building, including the issuance of revenue bonds not to exceed twenty million dollars, in accordance with this Act and chapter 5-12.

Section 5. The Board of Regents may accept, transfer, and expend any funds obtained for the projects authorized in this Act from federal sources, South Dakota State University, donations, or any other sources, all of which comprise a special fund for the benefitted project. All moneys deposited into that precision agriculture fund are hereby appropriated to the projects authorized by this Act, subject to limitations stated in sections 1 to 3, inclusive, of this Act.

Section 6. The administration of the design and construction of the project authorized in this Act shall be under the general charge and supervision of the Bureau of Administration as provided in chapter 5-14.

Section 7. The executive director of the Board of Regents shall approve vouchers and the state auditor shall draw warrants to pay expenditures authorized by this Act.

Section 8. There is hereby created the precision agriculture fund. Money in the fund may be used for the construction and renovation of the precision agriculture classroom and laboratory building and Berg Agriculture Hall; bond redemption; and the annual maintenance, operations, and repair of the buildings. Interest earned on money in the fund shall be deposited in the fund. The fund shall be administered by the Board of Regents.

Section 9. That chapter 38-19 be amended by adding a NEW SECTION to read:

In addition to the fee imposed by § 38-19-10, each licensed distributor of commercial fertilizer shall pay to the secretary of agriculture for all commercial fertilizer distributed in this state an inspection fee of twenty-five cents per ton in accordance with the provisions of § 38-19-12. Notwithstanding the provisions of § 38-19-14, the fee imposed by this section shall be deposited in the precision agriculture fund created pursuant to section 8 of this Act.

Section 10. Section 9 of this Act is effective on July 1, 2018.

Section 11. Section 9 of this Act is repealed on the first day of the fiscal year following a determination by the Board of Regents that the bonds authorized pursuant to section 4 of this Act are satisfied and paid in full.

Section 12. Whereas, this Act is necessary for the support of the state government and its existing public institutions, an emergency is hereby declared to exist, and this Act shall be in full force and effect from and after its passage and approval.

An Act to authorize the construction of the precision agriculture building and certain renovations at South Dakota State University, to make an appropriation therefor, and to declare an emergency.

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I certify that the attached Act originated in the

HOUSE as Bill No. 1264

\_\_\_\_\_  
Chief Clerk

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\_\_\_\_\_  
Speaker of the House

Attest:

\_\_\_\_\_  
Chief Clerk

\_\_\_\_\_  
President of the Senate

Attest:

\_\_\_\_\_  
Secretary of the Senate

House Bill No. 1264  
File No. \_\_\_\_\_  
Chapter No. \_\_\_\_\_

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Received at this Executive Office this \_\_\_\_ day of \_\_\_\_\_ ,

20\_\_ at \_\_\_\_\_ M.

By \_\_\_\_\_  
for the Governor

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The attached Act is hereby approved this \_\_\_\_ day of \_\_\_\_\_ , A.D., 20\_\_

\_\_\_\_\_  
Governor

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STATE OF SOUTH DAKOTA,  
ss.

Office of the Secretary of State

Filed \_\_\_\_\_ , 20\_\_  
at \_\_\_\_\_ o'clock \_\_ M.

\_\_\_\_\_  
Secretary of State

By \_\_\_\_\_  
Asst. Secretary of State

## AN ACT

ENTITLED, An Act to provide funds to the precision agriculture fund by revising the allocation of petroleum release compensation and inspection fee revenues and online lottery revenues and to repeal the ethanol fuel fund.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF SOUTH DAKOTA:

Section 1. That § 34A-13-20 be amended to read:

34A-13-20. A petroleum release compensation and tank inspection fee is imposed upon any petroleum products upon which the fuel excise tax is imposed by §§ 10-47B-5 to 10-47B-10, inclusive, 10-47B-9.1, and 10-47B-13. None of the exemptions from fuel excise tax allowed in § 10-47B-19 apply to this fee. The parties required to pay the fuel excise tax pursuant to the provisions of §§ 10-47B-21 to 10-47B-26, inclusive, and 10-47B-29 and 10-47B-31 are liable for payment of the petroleum release and tank inspection fee. In cases where the fuel is exempt from the fuel excise tax under the provisions of subdivisions 10-47B-19(1), (3), and (5), the supplier shall pay the fee. Responsibility for payment of the fee ceases if the petroleum product is sold and delivered by a licensed exporter outside of the state. The amount of the fee imposed is twenty dollars per one thousand gallons of petroleum. The revenue collected pursuant to this section shall be distributed monthly in the following manner:

- (1) In fiscal year 2019, fifty-five percent shall be deposited in the state capital construction fund, twenty-five percent shall be deposited in the ethanol fuel fund, and twenty percent shall be deposited in the petroleum release compensation fund;
- (2) In fiscal year 2020, sixty percent shall be deposited in the state capital construction fund, twenty percent shall be deposited in the ethanol fuel fund, nineteen percent shall be deposited in the petroleum release compensation fund, and one percent shall be deposited in the ethanol infrastructure incentive fund as created in § 10-47B-164.1;

- (3) In fiscal year 2021, sixty-six percent shall be deposited in the state capital construction fund, fifteen percent shall be deposited in the ethanol fuel fund, eighteen percent shall be deposited in the petroleum release compensation fund, and one percent shall be deposited in the ethanol infrastructure incentive fund;
- (4) In fiscal year 2022, seventy-two percent shall be deposited in the state capital construction fund, ten percent shall be deposited in the ethanol fuel fund, seventeen percent shall be deposited in the petroleum release compensation fund, and one percent shall be deposited in the ethanol infrastructure incentive fund; and
- (5) Beginning in fiscal year 2023, eighty-one and one-half percent shall be deposited in the state capital construction fund, seventeen percent shall be deposited in the petroleum release compensation fund, and one and one-half percent shall be deposited in the ethanol infrastructure incentive fund.

Section 2. That chapter 34A-13 be amended by adding a NEW SECTION to read:

If the balance of the petroleum release compensation fund falls below two million dollars and has additional accounts payable that exceed projected monthly deposits pursuant to section 1 of this Act, a transfer shall be made from the state highway fund to the petroleum release compensation fund in an amount that brings the balance of the petroleum release compensation fund to five million dollars.

Any balance in the petroleum release compensation fund in excess of six million dollars, after any monthly deposit made pursuant to § 34A-13-20, shall be transferred to the state highway fund.

Section 3. That § 10-47B-164.1 be amended to read:

10-47B-164.1. There is hereby established the ethanol infrastructure incentive fund to receive funds pursuant to § 34A-13-20. Any money in the ethanol infrastructure incentive fund is continuously appropriated for the following purposes:



- (1) To award incentive grants to motor fuel retail dealers as defined in § 10-47B-3 for the purpose of entering into contracts for the purchase or installation, or for the purchase and installation, of ethanol blender pumps and associated piping and storage systems and related equipment to be used at facilities operated by the motor fuel retail dealers for the sale of motor fuel to the public;
- (2) To award incentive grants to motor fuel retail dealers as defined in § 10-47B-3 for the purpose of entering into contracts for the purchase, or the purchase, of pumps and pump equipment authorized to dispense gasoline containing up to and including eighty-five percent ethanol;
- (3) To award incentive grants to encourage the purchase of flex fuel vehicles;
- (4) To encourage the increased use of ethanol in South Dakota; and
- (5) To otherwise encourage the installation of infrastructure related to sale and distribution of ethanol.

The Governor's Office of Economic Development shall establish, by rules promulgated pursuant to chapter 1-26, such regulations and procedures as are necessary to implement this section. For the purposes of this section, the term, ethanol blender pump, refers to a mechanism provided by the retail dealer for the dispensing at retail as defined in § 10-47B-3 of ethanol blend so that the end user may choose a particular grade of ethanol to gasoline to be dispensed. The Governor's Office of Economic Development may use up to five percent of any amount appropriated to the ethanol infrastructure incentive fund for administration of the fund or any incentive programs established by this section.

Section 4. That chapter 10-47B be amended by adding a NEW SECTION to read:

Any balance in the ethanol infrastructure incentive fund in excess of one million dollars, after the monthly deposit made pursuant to § 34A-13-20, shall be transferred to the state highway fund.

Section 5. That § 42-7A-24 be amended to read:

42-7A-24. Net proceeds from the sale of instant lottery tickets shall be transferred to the state general fund on an annual basis after July first each year. The commission shall maximize the net proceeds to the state from the sale of instant and on-line lottery tickets. In no event may yearly lottery expenses for the sale of lottery tickets, excluding expenditures from retained earnings, exceed the amount of combined net proceeds transferred to the state general fund and the state capital construction fund. Net machine income from video lottery games shall be directly deposited in the general fund upon receipt. Net proceeds are funds in the lottery operating fund which are not needed for the payment of prizes, lottery expenses, and total retained earnings up to one and one-half million dollars cash deemed necessary by the executive director and commission for replacement, maintenance, and upgrade of business systems, product development, legal, and operating contingencies of the lottery.

In fiscal year 2019, the commission shall transfer twenty-five percent of the net proceeds from the sale of on-line lottery tickets collected pursuant to § 42-7A-24 to the general fund and seventy-five percent of the net proceeds from the sale of on-line lottery tickets shall be transferred to the state capital construction fund created in § 5-27-1. In fiscal year 2020, the commission shall transfer thirty-five percent of the net proceeds from the sale of on-line lottery tickets collected pursuant to § 42-7A-24 to the general fund and sixty-five percent of the net proceeds from the sale of on-line lottery tickets shall be transferred to the state capital construction fund created in § 5-27-1. In fiscal year 2021, the commission shall transfer thirty-five percent of the net proceeds from the sale of on-line lottery tickets collected pursuant to § 42-7A-24 to the general fund and sixty-five percent of the net proceeds from the sale of on-line lottery tickets shall be transferred to the state capital construction fund created in § 5-27-1. In fiscal year 2022, the commission shall transfer fifty percent of the net proceeds from the sale of on-line lottery tickets collected pursuant to § 42-7A-24 to the general fund and fifty percent of the net proceeds from the sale of on-line lottery tickets shall be

transferred to the state capital construction fund created in § 5-27-1. In fiscal year 2023 and each year thereafter, the commission shall transfer seventy percent of the net proceeds from the sale of on-line lottery tickets collected pursuant to § 42-7A-24 to the general fund and thirty percent of the net proceeds from the sale of on-line lottery tickets shall be transferred to the state capital construction fund created in § 5-27-1.

Section 6. That § 5-27-1 be amended to read:

5-27-1. There is hereby established within the state treasury the state capital construction fund into which shall be deposited the net proceeds to the state from the sale of on-line lottery tickets pursuant to § 42-7A-24, and such other revenues as the Legislature may designate. The fund shall be a participating fund and shall be credited for all interest earned on fund balances. Expenditures from the fund shall be made only upon approval by the Legislature.

Section 7. That § 5-27-4 be amended to read:

5-27-4. In fiscal year 2019, the Bureau of Finance and Management shall transfer each month twenty-one and one-half percent of the monthly state capital construction fund revenues from the state capital construction fund to the ethanol fuel fund. In fiscal year 2020, the Bureau of Finance and Management shall transfer each month fifteen percent of the monthly state capital construction fund revenues for the state capital construction fund to the ethanol fuel fund. In fiscal year 2021, the Bureau of Finance and Management shall transfer each month ten percent of the monthly state capital construction fund revenues for the state capital construction fund to the ethanol fuel fund. In fiscal year 2022, the Bureau of Finance and Management shall transfer each month five percent of the monthly state capital construction fund revenues for the state capital construction fund to the ethanol fuel fund.

Section 8. That § 5-27-5 be amended to read:

5-27-5. In fiscal year 2019, the Bureau of Finance and Management shall transfer each month

fourteen and one-half percent of the monthly state capital construction fund revenues from the state capital construction fund to the state highway fund. In fiscal year 2020, the Bureau of Finance and Management shall transfer each month twenty-three percent of the monthly state capital construction fund revenues for the state capital construction fund to the state highway fund. In fiscal year 2021, the Bureau of Finance and Management shall transfer each month twenty-nine percent of the monthly state capital construction fund revenues for the state capital construction fund to the state highway fund. In fiscal year 2022, the Bureau of Finance and Management shall transfer each month thirty-four percent of the monthly state capital construction fund revenues for the state capital construction fund to the state highway fund. Beginning in fiscal year 2023 and each year thereafter, the Bureau of Finance and Management shall transfer each month thirty-six percent of the monthly state capital construction fund revenues from the state capital construction fund to the state highway fund.

Section 9. That § 5-27-6 be amended to read:

5-27-6. During fiscal year 2019, the Bureau of Finance and Management shall transfer each month sixty-four percent of the monthly state capital construction fund revenues from the state capital construction fund to the water and environment fund. In fiscal year 2020, the Bureau of Finance and Management shall transfer each month sixty-two percent of the monthly state capital construction fund revenues from the state capital construction fund to the water and environment fund. In fiscal year 2021, the Bureau of Finance and Management shall transfer each month sixty-one percent of the monthly state capital construction fund revenues from the state capital construction fund to the water and environment fund. In fiscal year 2022, the Bureau of Finance and Management shall transfer each month sixty-one percent of the monthly state capital construction fund revenues from the state capital construction fund to the water and environment fund. Beginning in fiscal year 2023 and each year thereafter, the Bureau of Finance and Management shall transfer each month

sixty-four percent of the monthly state capital construction fund revenues from the state capital construction fund to the water and environment fund.

Section 10. That § 10-47B-162 to 10-47B-164, inclusive, be repealed.

Section 11. That §§ 10-47B-165 and 10-47B-166 be repealed.

Section 12. Sections 10 and 11 of this Act are effective on July 1, 2022.

Section 13. Pursuant to the General Appropriations Act, six hundred fifty thousand dollars will be annually transferred to the precision agriculture fund from the revenues generated by this Act until the first day of the fiscal year following a determination by the Board of Regents that the bonds financing the precision agriculture classroom and laboratory building are satisfied and paid in full.

An Act to provide funds to the precision agriculture fund by revising the allocation of petroleum release compensation and inspection fee revenues and online lottery revenues and to repeal the ethanol fuel fund.

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I certify that the attached Act
originated in the
SENATE as Bill No. 183

\_\_\_\_\_  
Secretary of the Senate
=====

\_\_\_\_\_  
President of the Senate

Attest:

\_\_\_\_\_  
Secretary of the Senate

\_\_\_\_\_  
Speaker of the House

Attest:

\_\_\_\_\_  
Chief Clerk

Senate Bill No. 183  
File No. \_\_\_\_\_  
Chapter No. \_\_\_\_\_

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Received at this Executive Office
this \_\_\_\_ day of \_\_\_\_\_ ,
20\_\_ at \_\_\_\_\_ M.

By \_\_\_\_\_  
for the Governor
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The attached Act is hereby
approved this \_\_\_\_\_ day of
\_\_\_\_\_, A.D., 20\_\_

\_\_\_\_\_  
Governor

=====
STATE OF SOUTH DAKOTA,
ss.
Office of the Secretary of State

Filed \_\_\_\_\_, 20\_\_
at \_\_\_\_\_ o'clock \_\_ M.

\_\_\_\_\_  
Secretary of State

By \_\_\_\_\_  
Asst. Secretary of State

**SOUTH DAKOTA BOARD OF REGENTS**

**Budget and Finance**

**AGENDA ITEM: 6 – I**  
**DATE: December 11-12, 2019**

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**SUBJECT**

**SDSU McFadden Biostress 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 its Preliminary Facility Statement (PFS) to plan a multiphase maintenance and repair project for upgrades to the lab exhaust systems of the McFadden Biostress building on campus.

As one of the largest facilities on campus, the McFadden Biostress buildings is also one of SDSU’s largest consumers of energy. The current lab spaces have constant volume exhaust fans for each lab space and fume hood, with no energy recovery system currently in place. The proposed upgrades to the building’s exhaust system will provide significant energy savings and operational improvements.

The basis of this project is to address M&R needs and upgrade the system to perform more efficiently and effectively like a modern lab system. This requires the replacement of the lab controls and exhaust system along with the addition of a heat recovery system. The building is 27 years old so the original equipment serving it is at the end of its useful life. There are two air handling units from the original phase of construction that serve lab

(Continued)

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**DRAFT MOTION 20191211\_6-I:**

I move to approve SDSU’s Preliminary Facility Statement for the upgrade and renovation of the lab exhaust systems in the McFadden Biostress building at an estimated cost of \$5,000,000 to be funded by HEFF funds. A building committee representative should be appointed to oversee this project.

SDSU McFadden Biostress Preliminary Facility Statement

December 11-12, 2019

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spaces with these individual exhaust fans. The project will consolidate these into a single lab exhaust system for each air handling unit that will include energy recovery that will transfer energy from the exhausted air into the incoming outside air supplied to the space.

### **IMPACT AND RECOMMENDATIONS**

In addition to the reducing energy consumption on campus, faculty and students will have a modern and consistent indoor environment to support their teaching, learning, and research needs.

SDSU requests that the building committee approve the continuation of West Plains Engineering design services through the remainder of the project. They were selected through a competitive selection process under statutory requirements and have completed conceptual design services.

### **ATTACHMENTS**

Attachment I –SDSU McFadden Biostress Preliminary Facility Statement



**PRELIMINARY FACILITY STATEMENT  
FOR  
MCFADDEN BIOSTRESS LAB EXHAUST UPGRADES  
SOUTH DAKOTA STATE UNIVERSITY**

**10-31-19**

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SDSU requests appointment of a building committee as this multiphase maintenance and repair project for upgrades to the lab exhaust systems at McFadden Biostress is expected to exceed \$5,000,000. We request that the building committee approve the continuation of West Plains Engineering design services through the remainder of the project. They were selected through a competitive selection process under statutory requirements and have completed conceptual design services.

**A. GENERAL PROGRAMMATIC NEEDS TO BE ADDRESSED:**

McFadden Biostress is one of SDSU's largest consumers of energy as it is one of the largest facilities on campus and includes a significant amount of lab space. The current lab spaces have constant volume, individual exhaust fans for each lab space and fume hood, with no energy recovery system. The combination of these creates an opportunity for significant energy savings and operational improvements through an exhaust upgrade project.

The basis of this project is to address M&R needs and upgrade the system to perform more efficiently and effectively like a modern lab system. This requires the replacement of the lab controls and exhaust system along with the addition of heat recovery. The building is 27 years old so the original equipment serving it is at the end of its useful life. There are two air handling units from the original phase of construction that serve lab spaces with these individual exhaust fans. The project will consolidate these into a single lab exhaust system for each air handling unit that will include energy recovery that will transfer energy from the exhausted air into the incoming outside air supplied to the space. Incorporating an energy recovery system into a 100% outside air lab ventilation system typically results in space conditioning energy savings of 35-45%. This will result in significant energy savings for the building and in turn the entire campus. The existing systems also do not have any remote monitoring or control, so maintenance personnel are not able to easily and quickly diagnose issues with the lab systems. This project will also replace the lab air valves which control the airflow in and out of the space. New valves will have better controls, providing a more comfortable and safer environment for occupants. An upgraded, modern system will have direct communication with the building automation system, allowing maintenance personnel to monitor and control

these spaces remotely to ensure temperatures and ventilation rates are being maintained.

A third air handling unit currently serves the office and classroom spaces in the building. This unit has a large ventilation load with no energy recovery so an energy recovery system will be explored for this unit as well. Though not as great as a lab ventilation system, there is potential for significant energy savings with this unit as well. The variable air volume boxes and controls of this system were upgraded during a previous phase so the needs in this area have been met.

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

Faculty and students will have more consistent indoor environments to support their teaching, learning, and research needs. They will also experience improved service from maintenance personnel due to the upgraded controls.

**C. ADDITIONAL SERVICES TO BE OFFERED:**

Various other control-type upgrades will be implemented where feasible with this project as well. Replacing pneumatic controls with electronic controls and incorporating modern energy-saving control sequences will all be explored with this project.

**D. COMPLIANCE WITH CAMPUS MASTER PLAN:**

The lab exhaust upgrades project at McFadden Biostress aligns with the campus master plan by reducing campus energy consumption and in turn lowering the average energy consumption per square foot across campus.

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

Facilities Utilization Report is not applicable to a lab exhaust upgrade project.

**F. LOCATION:**

The lab exhaust upgrades are located within the existing McFadden Biostress facility on the SDSU campus.

**G. REALLOCATION OF OLD SPACE, IF ANY:**

No reallocation of space will occur during this project.

**H. PROPOSED FUNDING SOURCE/SOURCES:**

As this is a maintenance and repair project for an academic facility, the project would be funded from Higher Education Facility Funds. The conceptual

estimates from West Plains Engineering indicate that this project will exceed \$5,000,000 in total project costs. The University is submitting the project as a capital improvement per requirements of BOR Policy 6.4. The scope and priorities noted above will be matched to the funding. The University requests the West Plains Engineering be retained for full design services.

**I. BUDGET FOR DEVELOPMENT OF A FACILITY PROGRAM PLAN:**

West Plains Engineering, an engineering firm which specializes in lab exhaust systems, has been selected to develop the schematic design for the project. The estimated cost for schematic design and design development services for this project is approximately \$200,000. The funding source for these services provided to date and future services is HEFF #3H1903.

End of Preliminary Facility Statement