



Office of the Chief Financial Officer and Treasurer

September 9, 2021

The Honorable Eric J. Holcomb  
Governor of the State of Indiana  
Statehouse  
Indianapolis, IN 46204

Dear Governor Holcomb:

At its meeting on August 6, 2021, the Purdue University Board of Trustees approved the planning, financing, construction and award of construction contracts for Whistler Hall of Agricultural Research Mechanical Systems Replacement.

As part of this mechanical system replacement project, the steam heating system will be replaced, along with the installation of three new air handling units and replacement of 100 individual exhaust fans with a new central manifold system. The project also includes changes to associated plumbing and electrical systems. The existing mechanical systems are past their useful life.

This project will improve service reliability, provide research laboratories with the flexibility to install more or different lab equipment and will improve performance, energy efficiency and indoor air quality. The new systems will meet updated laboratory standards for temperature control and ventilation.

The estimated total project cost is \$12,500,000. This includes \$10,059,617 of Repair and Rehabilitation Appropriations and \$2,440,383 of Operating Funds. This project is included in Purdue's approved FY22 Repair and Rehabilitation budget.

Subject to review by the Commission for Higher Education and recommendation by the State Budget Committee and the Budget Agency, we request your approval to proceed with this project. Attached are the completed forms that the Commission has prescribed for its review of such projects. We will be happy to answer any questions you or your staff may have or to provide any additional information that is needed.

Sincerely,

A handwritten signature in black ink, appearing to be 'C. Ruhl', written over a horizontal line.

Christopher A. Ruhl  
Chief Financial Officer and Treasurer

Attachments

- c: Alexa Deaton, Chief Financial Officer, Indiana Commission for Higher Education
- Jasmine Williams, Director of Finance, Indiana Commission for Higher Education
- Zachary Jackson, Director, Indiana State Budget Agency
- Andy Cummings, Assistant Director, Indiana State Budget
- Kathleen Thomason, Comptroller, Purdue University
- Anne Hazlett, Senior Director, Government Relations, Purdue University

## PROJECT COST SUMMARY

### Whistler Hall of Agricultural Research Mechanical Systems Replacement

<b>Institution:</b> <input type="text" value="Purdue University"/>	<b>Budget Agency Project No.:</b> <input type="text" value="B-1-22-2-05"/>
<b>Campus:</b> <input type="text" value="West Lafayette"/>	<b>Institutional Priority:</b> <input type="text" value="N/A"/>
<b>Previously approved by General Assembly:</b> <input type="text" value="No"/>	<b>Previously recommended by CHE:</b> <input type="text" value="No"/>
<b>Part of the Institution's Long-term Capital Plan:</b> <input type="text" value="Yes"/>	

<b>Project Size:</b> <input type="text" value="N/A"/> GSF (1) <input type="text" value="N/A"/> ASF (2) <input type="text" value="N/A"/> ASF/GSF
<b>Net change in overall campus space:</b> <input type="text" value="N/A"/> GSF <input type="text" value="N/A"/> ASF

<b>Total cost of the project (3):</b>	<input type="text" value="\$ 12,500,000"/>	<b>Cost per ASF/GSF:</b>	<input type="text" value="N/A"/> GSF
<b>Total cost of the demolition:</b>	<input type="text" value="\$ -"/>		<input type="text" value="N/A"/> ASF
<b>Funding Source(s) for project (4):</b>	Amount	Type	
	<input type="text" value="\$ 10,059,617"/>	<input type="text" value="R&amp;R Appropriation"/>	
	<input type="text" value="\$ 2,440,383"/>	<input type="text" value="Operating Funds"/>	
	<input type="text" value=""/>	<input type="text" value=""/>	
	<input type="text" value=""/>	<input type="text" value=""/>	
<b>Estimated annual debt payment (6):</b>	<input type="text" value="N/A"/>		
<b>Are all funds for the project secured:</b>	<input type="text" value="Yes"/>		

**Project Funding:**  
 This project is funded by R&R Appropriation and Operating Funds, and all of the funds are authorized/secured.

**Project Cost Justification**  
 Since the project is utilities based, there is no significant space impact associated with the work. This project scope and cost are similar to the projects listed in the comparable project section.

<b>Estimated annual change in cost of building operations based on the project:</b>	<input type="text" value="\$ (70,000)"/>
<b>Estimated annual repair and rehabilitation investment (5):</b>	<input type="text" value="\$ 187,500"/>

(1) Gross Square Feet (GSF)- Sum of all area within the exterior envelope of the structure.  
 (2) Assignable Square Feet (ASF)- Amount of space that can be used by people or programs within the interior walls of a structure. Assignable square feet is the sum of the 10 major assignable space use categories: classrooms, laboratories, offices, study facilities, special use facilities, general use facilities, support facilities, health care facilities, residential facilities and unclassified facilities. For information on assignable space use categories, see Space-Room Codes tab.  
 (3) Projects should include all costs associated with the project (structure, A&E, infrastructure, consulting, FF&E, etc.)  
 (4) Be consistent in the naming of funds to be used for projects. If bonding, note Bonding Authority Year (1965, 1929, 1927, etc.)  
 (5) Estimate the amount of funding the institution would need to set aside annually to address R&R needs for the project. CHE suggests 1.5% of total construction cost  
 (6) If issuing debt, determine annual payment based on 20 years at 4.75% interest rate  
 - If project is a lease-purchase or lease, adjust accordingly. Note the total cost of the lease in the project cost, and annual payments in project description

**PROJECT DETAILED DESCRIPTION - ADDITIONAL INFORMATION**  
**Whistler Hall of Agricultural Research Mechanical Systems Replacement**

<b>Institution:</b>	Purdue University	<b>Budget Agency Project No.:</b>	B-1-22-2-05
<b>Campus:</b>	West Lafayette	<b>Institutional Priority:</b>	N/A

**Description of Project**

This project will replace mechanical systems in Whistler Hall of Agricultural Research on the West Lafayette campus.

Specifically, the project will replace the steam heating system, install three new air handling units, and replace 100 individual exhaust fans with a new central manifold system. Changes to associated plumbing and electrical systems are included in the project scope. The life expectancy of the new equipment being installed is approximately 40 years.

Whistler Hall houses researchers for Agronomy, Biochemistry, Botany and Plant Pathology, Entomology, and Horticulture and Landscape Architecture. Having varied disciplines in one dedicated research facility fosters collaboration across life sciences disciplines and makes the Whistler Building a center for agricultural research that impacts Indiana, the nation and the world.

**Need and Purpose of the Program**

The existing heating, cooling, and ventilation systems are past their useful lives and are not meeting the needs of the areas they serve. This project will improve reliability through the modernization of the building's mechanical systems.

This project will support the efforts of researchers in 33 laboratory spaces that account for nearly 50% of the 90,700 ASF facility. Upon completion of this project, researchers will have additional flexibility to install more or different lab equipment. Faculty in Whistler secured \$8M in support of their research in fiscal year 2020. More than 50% of this support was from NSF and 27% from USDA.

The new systems will meet updated temperature control and ventilation laboratory standards and will improve performance, energy efficiency, and indoor air quality. This project is expected to result in approximately \$60,000 of energy savings per year, along with approximately \$10,000 annual savings related to HVAC maintenance.

A portion of the *Plant Growth Center* is located in the Whistler Agricultural Research Building with plant growth chambers, light racks, and greenhouse tables supporting faculty within the College of Agriculture and the College of Science.

The *Life Science Microscopy Facility*, situated in the basement, serves the entire campus, as it is a core facility within the Purdue Electron Microscopy Consortium.

- o The facility supports research on microscopic and submicroscopic structure of biological and physical systems with 5 electron microscopes.
- o Each microscope requires ultra-stable environmental conditions including humidity, room temperature and clean stable temperature of cooling water.
- o The facility is available to students, faculty, postdoctoral staff, and service staff. In the past 3 years it has supported the work of 551 unique users from 36 departments.

This project is included in Purdue's approved FY22 Repair and Rehabilitation budget.

**Space Utilization**

Since this is a utilities project, there will be no significant space impact.

**Comparable Projects**

Wetherill Laboratory of Chemistry projects:

- o WTHR Air Handler Units Replacement Phase I – 2009; \$5,733,000
- o WTHR Manifold Hood Exhaust Roof System Replacement – 2011; \$733,000
- o WTHR Air Handler Units Replacement Phase II – 2012; \$5,185,000
- o WTHR Manifold Hood Exhaust 5-7 Installation – 2019; \$3,135,000

The total of the four comparable projects is \$14,786,000.

Wetherill Laboratory of Chemistry is a similar laboratory facility, and these four projects reflect the main scope of the Whistler Hall mechanical system renovation project.

The scope of the Whistler Hall project includes additional heating hot water systems and modifications to the process control loop, which cools specialized equipment and microscopes and provides water for growth chambers.

The Whistler Hall project achieves cost savings as compared to the sum of the Wetherill projects by having one project instead of multiple. This is because there is only one project mobilization and de-mobilization cost, and labor and material costs are condensed. Additionally, since the system is so integrally connected, doing all of the work at one time minimizes the impact to occupants of this heavily used research facility.

**Background Materials**

**CAPITAL PROJECT REQUEST FORM**  
**INDIANA PUBLIC POSTSECONDARY EDUCATION**  
**INSTITUTION CAMPUS SPACE DETAILS FOR Whistler Hall of Agricultural Research Mechanical Systems Replacement**

(INSERT PROJECT TITLE AND SBA No.)	Current Campus Totals			Subtotal Current and Future Space	Capital Request		Net Future Space
	Current Space in Use	Space Under Construction (1)	Space Planned and Funded (1)		Space to be Terminated (1)	New Space in Capital Request (2)	
<b><u>A. OVERALL SPACE IN ASF</u></b>							
Classroom (110 & 115)	337,643	-	-	337,643			337,643
Class Lab (210,215,220,225,230,235)	756,826	82,254	4,425	843,505			843,505
Non-class Lab (250 & 255)	1,635,329	(17,963)	38,119	1,655,485	(497)		1,654,988
Office Facilities (300)	2,371,673	29,971	(9,433)	2,392,211			2,392,211
Study Facilities (400)	351,988	7,003	8,166	367,157			367,157
Special Use Facilities (500)	1,222,756	-	-	1,222,756			1,222,756
General Use Facilities (600)	1,001,822	2,808	14,320	1,018,950			1,018,950
Support Facilities (700)	2,852,514	121	(783)	2,851,852			2,851,852
Health Care Facilities (800)	112,112	89,901	-	202,013			202,013
Resident Facilities (900)	2,697,529	-	-	2,697,529			2,697,529
Unclassified (000)	24,007	-	-	24,007			24,007
<b><u>B. OTHER FACILITIES</u></b> (Please list major categories)							
<b>TOTAL SPACE</b>	<b>13,364,198</b>	<b>194,095</b>	<b>54,814</b>	<b>13,613,107</b>	<b>(497)</b>		<b>13,612,610</b>

Notes:

- Space/Room codes based on Postsecondary Ed Facilities Inventory and Classification Manual (2006)

(1) Identify in a footnote the specific facilities that are included in the data in these columns. Do not include pending approval, non-submitted projects or non-funded projects

Space under construction includes:

- Vet Med Teaching Hospital
- Gateway Complex
- PMU Renovations
- Purdue Bands & Orchestra Building

Space planned and funded includes:

- Child Care Center Building
- Hypersonics Building
- Secure Research Center
- Schleman Hall, Stewart Center and Related Renovations

(2) Space terminated as part of this project includes research space that is being repurposed into mechanical (non-assignable) space.

## CAPITAL PROJECT COST DETAILS

### Whistler Hall of Agricultural Research Mechanical Systems Replacement

<b>Institution:</b>	Purdue University	<b>Budget Agency Project No.:</b>	B-1-22-2-05
<b>Campus:</b>	West Lafayette	<b>Institutional Priority:</b>	N/A

#### ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
<b>Bid Date</b>	January	2022
<b>Start Construction</b>	April	2022
<b>Occupancy (End Date)</b>	October	2023

#### ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors (2)	Project Cost
<b><u>Planning Costs</u></b>			
a. Engineering	\$ 600,000		\$ 600,000
b. Architectural	\$ 70,000		\$ 70,000
c. Consulting	\$ 130,000		\$ 130,000
<b><u>Construction</u></b>			
a. Structure	\$ 750,000		\$ 750,000
b. Mechanical (HVAC, plumbing, etc.)	\$ 7,000,000		\$ 7,000,000
c. Electrical	\$ 750,000		\$ 750,000
<b><u>Movable Equipment</u></b>			\$ -
<b><u>Fixed Equipment</u></b>			\$ -
<b><u>Site Development/Land Acquisition</u></b>			\$ -
<b><u>Other (PM fees, printing, travel, testing)</u></b>	\$ 3,200,000		\$ 3,200,000
<b>TOTAL ESTIMATED PROJECT COST</b>	<b>\$ 12,500,000</b>	<b>\$ -</b>	<b>\$ 12,500,000</b>

(1) Cost Basis is based on current cost prevailing as of: (INSERT MONTH AND YEAR)

(2) Explain in the Description of Project Section of the "Cap Proj Details" schedule the reasoning for estimated escalation factors

**CAPITAL PROJECT OPERATING COST DETAILS**  
**Whistler Hall of Agricultural Research Mechanical Systems Replacement**

<b>Institution:</b>	Purdue University	<b>Budget Agency Project No.:</b>	B-1-22-2-05
<b>Campus:</b>	West Lafayette	<b>Institutional Priority:</b>	N/A

<u>ANNUAL OPERATING COST/SAVINGS (1)</u>		<u>GSF OF AREA AFFECTED BY PROJECT</u>		
	<b>Cost per GSF</b>	<b>Total Operating Cost</b>	<b>Personal Services</b>	<b>Supplies and Expenses</b>
1. Operations		\$ -		
2. Maintenance		\$ (10,000)		
3. Fuel		\$ -		
4. Utilities		\$ (60,000)	(\$10,000)	(\$50,000)
5. Other		\$ -		
<b>TOTAL ESTIMATED OPERATIONAL COST/SAVINGS</b>	N/A	\$ (70,000)	N/A	N/A

**Description of any unusual factors affecting operating and maintenance costs/savings.**

The project is expected to result in approximately \$60,000 of annual energy costs and \$10,000 of current HVAC maintenance.

(1) Based on figures from "Individual Cap Proj Desc" schedule