B-1-22-2-04

PURDUE UNIVERSITY

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 Biochemistry Building Main Electrical Distribution Replacement.

This project will replace two transformers and two electrical distribution systems in the Biochemistry Building that are past their useful life. This includes main switches, panels and circuit breakers that support building equipment and lighting.

This project will improve service reliability, provide research laboratories with the flexibility to install more or different lab equipment and will enhance technician safety.

The estimated total project cost is $2,300,000, funded by 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,

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

Hovde Hall of Administration – 610 Purdue Mall – West Lafayette, IN 47907 – (765) 494-9705

PROJECT COST SUMMARY

Biochemistry Building Main Electrical Distribution Replacement

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-22-2-04
Campus:	West Lafayette	**Institutional Priority:**	N/A
Previously approved by General Assembly:	No	**Previously recommended by CHE:**	No
Part of the Institution's Long-term Capital Plan:	Yes		

Project Size:	N/A	GSF (1)	N/A	ASF (2)	N/A ASF/GSF
Net change in overall campus space:	N/A	GSF	N/A	ASF	

Total cost of the project (3):	$ 2,300,000	**Cost per ASF/GSF:**	N/A GSF
Total cost of the demolition:	$ -		N/A ASF

Funding Source(s) for project (4):	Amount	Type
	$ 2,300,000	Operating Funds

Estimated annual debt payment (6):	N/A
Are all funds for the project secured:	Yes

Project Funding:

This project is funded by Operating Funds, and all of the funds are secured.

Project Cost Justification

Since the project is utilities based, there is not a ASF or GSF associated with the work. This project scope and cost are similar to the projects listed in the comparable project section.

Estimated annual change in cost of building operations based on the project:	N/A
Estimated annual repair and rehabilitation investment (5):	N/A

(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

Biochemistry Building Main Electrical Distribution Replacement

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-22-2-04
Campus:	West Lafayette	**Institutional Priority**:	N/A

Description of Project

This project will replace the electrical distribution system for the Biochemistry Building on the West Lafayette campus.

Specifically, the project will replace two transformers and two electrical distribution systems, including main switches, panels and circuit breakers, with new equipment. The average life expectancy of the new transformers is 40-50 years, and the switchgear (including the main switches) is 25-30 years.

The Biochemistry Building houses the Department of Biochemistry and the Office of the Indiana State Chemist, which is a state regulatory agency that administers several agricultural laws involving animal feeds, fertilizers, pesticides and seeds. These laws ensure truth-in-labeling, food safety, user safety and the protection of our environment.

Need and Purpose of the Program

The existing transformers and electrical distribution systems, which support building equipment and lighting, are past their expected service life and are not meeting the building's needs. The electrical system was originally installed in 1937. Some upgrade work including high voltage cable replacement and updates to some of the main electrical switchgear was completed in 1981, but transformers were not included in this scope.

This project will improve reliability through the modernization of the building's electrical distribution system. Research labs will have additional flexibility to install more or different lab equipment as a result of this project. The new system will enhance technician safety and provide better access to control devices and improved identification of switches and controls.

Scientists in biochemistry perform life science research with strengths that include Bioenergy, Cancer Biology, Drug Discovery, Molecular Genetics, Plant Metabolism, Proteomics & Mass Spectroscopy, RNA Biology, and Structural and Chemical Biology. Approximately 38% of the facility is research lab space, with the remaining space divided between office, circulation/mechanical and instructional/general use space. The department has 21 faculty who secured almost $10M in funding in fiscal year 2020. Approximately 50% of this support was from NIH and nearly 30% from DOE. They have approximately 200 undergraduates enrolled in their department, and each student participates in undergraduate research. The program has 49 graduate students enrolled.

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

Agricultural Administration Building Electrical Upgrade Phase 1 – 2018
- o $1,308,700
- o Included the replacement of the existing high voltage transformers and main distribution switchboards and added arc flash circuit breakers.
- o The Biochemistry Building (103,700 SF) is significantly larger than the Agricultural Administration Building (64,800 SF) and requires larger electrical service, thus increasing the project cost. The Biochemistry Building project also includes additional scope components that increase the cost, including structural elements, the relocation of mechanical and plumbing equipment, exterior hatch opening work and extra ventilation openings in the vault.

Terminal Building Transformer Vault and Building Electrical Renovation – 2018
- o $1,039,000
- o Included the replacement of the obsolete transformer bank and installation of arc flash mitigation.
- o The main electrical system was not replaced in this project but is included in the scope of the Biochemistry Building project.

Background Materials

CAPITAL PROJECT REQUEST FORM
INDIANA PUBLIC POSTSECONDARY EDUCATION
INSTITUTION CAMPUS SPACE DETAILS FOR Biochemistry Building Main Electrical Distribution Replacement

	Current Campus Totals				Capital Request		
(INSERT PROJECT TITLE AND SBA No.)	Current Space in Use	Space Under Construction (1)	Space Planned and Funded (1)	Subtotal Current and Future Space	Space to be Terminated (1)	New Space in Capital Request (2)	Net Future Space
A. OVERALL SPACE IN ASF							
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)	37,622	**1,654,988**			**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. OTHER FACILITIES (Please list major categories)							
TOTAL SPACE	**13,364,198**	**194,095**	**54,317**	**13,612,610**	**-**	**-**	**13,612,610**

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
- Whistler Hall Mechanical Systems Replacement
- Schleman Hall, Stewart Center and Related Renovations

(2) There is no space to be added or terminated as part of this capital project.

CAPITAL PROJECT COST DETAILS

Biochemistry Building Main Electrical Distribution Replacement

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-22-2-04
Campus:	West Lafayette	**Institutional Priority:**	N/A

ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
Bid Date	January	2022
Start Construction	May	2022
Occupancy (End Date)	August	2023

ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors (2)	Project Cost
Planning Costs			
a. Engineering	$ 223,000		$ 223,000
b. Architectural			$ -
c. Consulting			$ -
Construction			
a. Structure	$ 50,000		$ 50,000
b. Mechanical (HVAC, plumbing, etc.)	$ 100,000		$ 100,000
c. Electrical	$ 1,077,000		$ 1,077,000
Movable Equipment			$ -
Fixed Equipment	$ 500,000		$ 500,000
Site Development/Land Acquisition			$ -
Other (PM fees, printing, travel, testing)	$ 350,000		$ 350,000
TOTAL ESTIMATED PROJECT COST	**$ 2,300,000**	**$ -**	**$ 2,300,000**

(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

Biochemistry Building Main Electrical Distribution Replacement

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-22-2-04
Campus:	West Lafayette	**Institutional Priority:**	N/A

GSF OF AREA AFFECTED BY PROJECT N/A

ANNUAL OPERATING COST/SAVINGS (1)

	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses
1. Operations		$ -		
2. Maintenance		$ -		
3. Fuel		$ -		
4. Utilities		$ -		
5. Other		$ -		
TOTAL ESTIMATED OPERATIONAL COST/SAVINGS	**N/A**	**$ -**	**N/A**	**N/A**

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

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