



Office of the Chief Financial Officer and Treasurer

April 14, 2023

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

Dear Governor Holcomb:

At its meeting on April 14, 2023, the Purdue University Board of Trustees approved the planning, financing, construction and award of construction contracts for the Chilled Water Capacity Enhancement Projects on the West Lafayette campus.

This project will install a new cooling tower and supporting equipment at the Wade Utility Plant and construct an approximately 1,600 GSF auxiliary controls building. A new chilled water line will be installed from the Wade Utility Plant to the central academic campus to allow for full chilled water capacity to reach buildings currently underserved during peak times. Replacement of chiller controls and other chiller upgrades are also included to increase the reliability and efficiency of chilled water production.

This project will increase chilled water capacity, allowing the production and distribution of chilled water to keep pace with campus growth and strategic research initiatives. Reliable production and distribution of chilled water is essential to providing stable temperature and humidity controls in campus facilities, which contribute to the longevity and health of buildings.

The estimated total project cost is \$65,500,000 and is funded by Operating Funds – Reserves.

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 read 'C. Ruhl'.

Christopher A. Ruhl
Chief Financial Officer and Treasurer

Attachments

c: Seth Hinshaw, Chief Financial Officer, Indiana Commission for Higher Education
Zachary Jackson, Director, Indiana State Budget Agency
Jasmine Williams, Assistant Director, Indiana State Budget
Kathleen Thomason, Comptroller, Purdue University
Anne Hazlett, Senior Director, Government Relations, Purdue University

PROJECT COST SUMMARY
Chilled Water Capacity Enhancement Projects

Institution:	Purdue University	Budget Agency Project No.:	B-1-23-1-16
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:	1,625 GSF (1)	0 ASF (2)	0.00 ASF/GSF
Net change in overall campus space:	1,625 GSF	0 ASF	

Total cost of the project (3):	\$ 65,500,000	Cost per ASF/GSF:	N/A GSF
Total cost of the demolition:	\$ -		N/A ASF
Funding Source(s) for project (4):	Amount	Type	
	\$ 65,500,000	Operating Funds - Reserves	
Estimated annual debt payment (6):	\$0		
Are all funds for the project secured:	Yes		

Project Funding:
The project is being funded by Operating Funds - Reserves, and all project funds are secured.

Project Cost Justification
Since the project's scope is utilities-based, the cost/square foot indicators are not a good measure. This project's scope and cost are described more in the Capital Project Details section.

Estimated annual change in cost of building operations based on the project:	\$ 299,708
Estimated annual repair and rehabilitation investment (5):	\$ 982,500

(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

Chilled Water Capacity Enhancement Projects

Institution: Purdue University
Campus: West Lafayette

Budget Agency Project No.: B-1-23-1-16
Institutional Priority: N/A

Description of Project

This project will install a new cooling tower and supporting equipment at the Wade Utility Plant and construct an approximately 1,600 GSF auxiliary controls building on the West Lafayette campus. A new chilled water line will be installed from Wade Utility Plant to the central academic campus to allow for full chilled water capacity to reach buildings currently underserved during peak times. Seven smaller projects are included in this overarching project to increase the reliability and efficiency of chilled water production, including the replacement of chiller controls and other chiller upgrades.

Need and Purpose of the Program

This project will increase chilled water capacity by 3,500 tons, allowing production and distribution of chilled water to keep pace with campus growth and strategic research initiatives. From Fall 2010 to Fall 2022, there has been nearly a 30% increase in student enrollment on the West Lafayette campus. Additionally, from fiscal year 2011 to fiscal year 2022, there was a 13% increase in Purdue-owned gross square footage. This includes 30 new facilities/building additions and 10 major renovations during that time. As a result, the campus chilled water peak demand has grown 18% since 2012 and will continue to increase. The current chilled water system cannot meet peak demand without the use of rental equipment which offers a limited capacity increase, and demand is expected to surpass that in the next few years. Rental equipment is less reliable than permanent assets and is not guaranteed to be available each year. The use of rental cooling tower at the Wade Utility Plant will be eliminated following completion of this project.

Reliable production and distribution of chilled water is essential to providing stable temperature and humidity controls in campus facilities, which contribute to the longevity and health of buildings and occupant comfort. It is also critical to ongoing and future world-changing research activities and academic excellence.

Space Utilization

All planned space is classified as mechanical/utility space and has no impact on the campus ASF total.

Comparable Projects

There is not a recent comparable project.

Background Materials

CAPITAL PROJECT REQUEST FORM
INDIANA PUBLIC POSTSECONDARY EDUCATION
INSTITUTION CAMPUS SPACE DETAILS FOR Chilled Water Capacity Enhancement Projects

(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)	
A. OVERALL SPACE IN ASF							
Classroom (110 & 115)	336,770	-	(2,758)	334,012			334,012
Class Lab (210,215,220,225,230,235)	821,564	4,425	(17,763)	808,226			808,226
Non-class Lab (250 & 255)	1,689,952	28,557	(4,970)	1,713,539			1,713,539
Office Facilities (300)	2,327,144	(3,312)	(47,907)	2,275,925			2,275,925
Study Facilities (400)	397,274	8,166	48,926	454,366			454,366
Special Use Facilities (500)	1,206,038	8,796	3,603	1,218,437			1,218,437
General Use Facilities (600)	1,018,077	6,056	(31,581)	992,552			992,552
Support Facilities (700)	2,934,774	(726)	(2,505)	2,931,543			2,931,543
Health Care Facilities (800)	217,205	-	-	217,205			217,205
Resident Facilities (900)	2,427,355	-	-	2,427,355			2,427,355
Unclassified (000)	115,749	-	-	115,749			115,749
B. OTHER FACILITIES							
(Please list major categories)							
TOTAL SPACE	13,491,902	51,962	(54,955)	13,488,909	-	-	13,488,909

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:

- Schleman/Stewart Renovation
- Whistler Mechanical Project
- Ross-Ade Stadium Renovation
- Zucrow High Speed Propulsion Lab
- Mackey Locker Rooms Renovation

Space planned and funded includes:

- Life Sciences Phenotyping Greenhouse Building
- Northwest Chiller Plant System Improvements
- Vawter Hall Electrical Enhancements and Replacement
- Brown Family Hall Renovation
- PMU 2nd Floor Hospitality Renovation
- Libraries Study Space Renovation
- University Hall and Related Renovations
- Mechanical Engineering Building Renovation
- Birck Nanotechnology Center Clean Room Modernization and Related Renovations

(2) This project has no impact to assignable space.

CAPITAL PROJECT COST DETAILS
Chilled Water Capacity Enhancement Projects

Institution:	Purdue University	Budget Agency Project No.:	B-1-23-1-16
Campus:	West Lafayette	Institutional Priority:	N/A

ANTICIPATED CONSTRUCTION SCHEDULE

	<u>Month</u>	<u>Year</u>
Bid Date	September	2023
Start Construction	February	2024
Occupancy (End Date)	June	2026

ESTIMATED CONSTRUCTION COST FOR PROJECT

	<u>Cost Basis (1)</u>	<u>Estimated Escalation Factors (2)</u>	<u>Project Cost</u>
<u>Planning Costs</u>			
a. Engineering	\$ 4,000,000		N/A
b. Architectural	\$ 308,000		N/A
c. Consulting	\$ 850,000		N/A
<u>Construction</u>			
a. Structure	\$ 3,300,000		N/A
b. Mechanical (chilled water piping)	\$ 26,250,000		N/A
c. Electrical	\$ 3,800,000		N/A
<u>Movable Equipment</u>	\$ -		N/A
<u>Fixed Equipment</u>	\$ 11,500,000		N/A
<u>Site Development/Land Acquisition</u>	\$ -		N/A
<u>Other (PM fee, contingencies, permitting)</u>	\$ 15,492,000		N/A
TOTAL ESTIMATED PROJECT COST	\$ 65,500,000	\$ -	N/A

(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
Chilled Water Capacity Enhancement Projects

Institution:	<u>Purdue University</u>	Budget Agency Project No.:	<u>B-1-23-1-16</u>
Campus:	<u>West Lafayette</u>	Institutional Priority:	<u>N/A</u>

					<u>GSF OF AREA AFFECTED BY PROJECT</u>	1,625
<u>ANNUAL OPERATING COST/SAVINGS (1)</u>						
	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses		
1. Operations	\$ 251.08	\$ 408,000	\$ -	\$ 408,000		
2. Maintenance	\$ 36.92	\$ 60,000	\$ -	\$ 60,000		
3. Fuel	\$ -	\$ -	\$ -	\$ -		
4. Utilities	\$ 266.30	\$ 432,737	\$ -	\$ 432,737		
5. Other	\$ (369.86)	\$ (601,029)	\$ -	\$ (601,029)		
TOTAL ESTIMATED OPERATIONAL COST/SAVINGS	\$ 184.44	\$ 299,708	\$ -	\$ 299,708		

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

The "Other" savings reflected above are the total operating costs associated with rental cooling towers at Wade Utility Plant. This rental equipment will be eliminated with the completion of this project. The savings include rental fees, start-up and winterization of the equipment, chemicals and electricity to run the rentals. The new cooling tower capacity is larger than the rental capacity that is being replaced, leading to higher annual operating costs.

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