B-1-21-1-07

PURDUE UNIVERSITY

Office of the Chief Financial Officer and Treasurer

May 6, 2021

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

Dear Governor Holcomb:

At its meeting on March 4, 2021, the Purdue University Board of Trustees approved the planning, financing, construction and award of construction contracts for the Hypersonics and Applied Research Facility.

This project includes the construction of an approximately 65,000 square foot facility for research and limited office space. Two wind tunnels will be housed in the facility, along with the Hypersonics Advanced Manufacturing Technology Center and support space. Each wind tunnel will have its own supporting laser lab to allow for precise laser measuring from the tests conducted in the wind tunnels. The facility will enable research activities that are not currently possible on the West Lafayette campus.

This project is key to two of the newly announced *Purdue Next Moves* strategic initiatives designed to advance the university's competitive advantage among the world's top teaching and research institutions: National Security and Technology Initiative and the Purdue Applied Research Institution.

The estimated total project cost is $41,000,000. This includes $20,000,000 in Indirect Cost Recovery, $16,000,000 in Operating Funds-Reserves and $5,000,000 in Gift Funds.

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

Hypersonics and Applied Research Facility

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-21-1-07
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:	64,620	GSF (1)	39,323	ASF (2)	0.61 ASF/GSF
Net change in overall campus space:	64,620	GSF	39,323	ASF	

Total cost of the project (3):	$ 41,000,000	**Cost per ASF/GSF:**	$634 GSF
Total cost of the demolition:	$ -		$1,043 ASF

Funding Source(s) for project (4):	Amount	Type
	$ 20,000,000	Indirect Cost Recovery
	$ 16,000,000	Operating Funds - Reserves
	$ 5,000,000	Gift Funds

Estimated annual debt payment (6):	N/A
Are all funds for the project secured:	No

Project Funding:

The funds provided by Indirect Cost Recovery and Operating Funds-Reserves are secure. The Gift Funds are not secure but are backstopped.

Project Cost Justification

The project cost per square feet is in alignment with other specialized laboratory and research space on the West Lafayette campus. Two examples with similar costs per square feet are included in the comparable project section. As noted in the project details, this project is creating a type of research space not currently available on the West Lafayette campus.

Estimated annual change in cost of building operations based on the project:	$ 517,500
Estimated annual repair and rehabilitation investment (5):	$ 615,000

PROJECT DETAILED DESCRIPTION - ADDITIONAL INFORMATION

Hypersonics and Applied Research Facility

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-21-1-07
Campus:	West Lafayette	**Institutional Priority**:	N/A

Description of Project

This project will construct an approximately 65,000 GSF facility consisting of research and limited office space on the West Lafayette campus. The facility will provide space for two wind tunnels, the Hypersonics Advanced Manufacturing Technology Center and necessary support space. Storage space for models, a machine shop for model modifications and laser labs for sophisticated and precise laser measuring from the tests conducted will be included to support the onsite wind tunnels.

Need and Purpose of the Program

The first wind tunnel is a donation from Northrop Grumman Corp, and once installed, Purdue will be only the second university in the U.S. to offer such a hypersonics test capability. Purdue has one of the most comprehensive hypersonics research capabilities in the country, with nearly 40 world-renowned researchers in hypersonics, with expertise in navigation, aerodynamics, aerothermal effects propulsion, autonomy, system engineering, high-temperature materials, and manufacturing.

The second wind tunnel is a new technology Purdue Unviersity is developing. Purdue's capabilities add to Indiana's research in related fields, including the University of Notre Dame's research in aerodynamic effects and Indiana University's advanced computing and hypersonic modeling and simulation research.

Purdue University recently announced a set of strategic *Next Moves* initiatives designed to advance the university's competitive advantage among the world's top research and teaching institutions. This project supports two of these new initiatives: "National Security and Technology Initiative" and "Purdue Applied Research Institute." With these initiatives Purdue intends to lead national centers of excellence with cross-sector participation; deliver new, one-of-a-kind research and test facilities that are national assets and provide the advanced facilities and infrastructure to support mission critical efforts of federal agencies such as the Department of Defense, the intelligence community, USAID, as well as industry and nongovernmental organizations.

Space Utilization

The new building includes nearly 40,000 ASF of research laboratory and office space. The building will provide needed space and infrastructure to support research technologies not yet available on the Purdue campus.

Comparable Projects

• Biochemistry Building Annex Third Floor Renovation (2015)
o 5,686 GSF
o $4,000,000
o Cost/GSF: $703
o Renovated existing lab and office space on the third floor
o While slightly smaller in size, both the Biochemistry project and the Hypersonics project deal with the creation of specialized research lab space and supporting office space

• Bechtel Innovation Design Center (2015)
o 28,800 GSF
o $18,500,000
o Cost/SF: $642
o This project constructed a new project facility for collaborative learning.

Background Materials

CAPITAL PROJECT REQUEST FORM
INDIANA PUBLIC POSTSECONDARY EDUCATION
INSTITUTION CAMPUS SPACE DETAILS FOR Hypersonics and Applied Research Facility

	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)	334,724	-	-	**334,724**			**334,724**
Class Lab (210,215,220,225,230,235)	745,787	82,254	11,900	**839,941**			**839,941**
Non-class Lab (250 & 255)	1,639,353	(17,963)	7,537	**1,628,927**		35,142	**1,664,069**
Office Facilities (300)	2,405,399	29,971	28,000	**2,463,370**		4,181	**2,467,551**
Study Facilities (400)	355,087	7,003	-	**362,090**			**362,090**
Special Use Facilities (500)	1,209,313	-	-	**1,209,313**			**1,209,313**
General Use Facilities (600)	978,743	2,808	12,685	**994,236**			**994,236**
Support Facilities (700)	2,884,793	121	(57)	**2,884,857**			**2,884,857**
Health Care Facilities (800)	113,929	89,901	-	**203,830**			**203,830**
Resident Facilities (900)	2,693,201	-	-	**2,693,201**			**2,693,201**
Unclassified (000)	27,567	-	-	**27,567**			**27,567**
B. OTHER FACILITIES (Please list major categories)							
TOTAL SPACE	**13,387,896**	**194,095**	**60,065**	**13,642,056**		**39,323**	**13,681,379**

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:

- Data Science Building
- Child Care Center Building

Space to be terminated includes:

N/A

CAPITAL PROJECT COST DETAILS

Hypersonics and Applied Research Facility

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-21-1-07
Campus:	West Lafayette	**Institutional Priority:**	N/A

ANTICIPATED CONSTRUCTION SCHEDULE

	Month	Year
Bid Date (GMP delivery)	July	2021
Start Construction	December	2021
Occupancy (End Date)	March	2023

ESTIMATED CONSTRUCTION COST FOR PROJECT

	Cost Basis (1)	Estimated Escalation Factors (2)	Project Cost
Planning Costs			
a. Engineering	$ 1,760,000		$ 1,760,000
b. Architectural	$ 1,140,000		$ 1,140,000
c. Consulting	$ 330,000		$ 330,000
Construction			
a. Structure	$ 12,500,000		$ 12,500,000
b. Mechanical (HVAC, plumbing, etc.)	$ 6,870,000		$ 6,870,000
c. Electrical	$ 10,200,000		$ 10,200,000
Movable Equipment	$ 300,000		$ 300,000
Fixed Equipment	$ 400,000		$ 400,000
Site Development/Land Acquisition	$ 4,000,000		$ 4,000,000
Other (PM fee, contingencies)	$ 3,500,000		$ 3,500,000
TOTAL ESTIMATED PROJECT COST	**$ 41,000,000**		**$ 41,000,000**

CAPITAL PROJECT OPERATING COST DETAILS

Hypersonics and Applied Research Facility

Institution:	Purdue University	**Budget Agency Project No.:**	B-1-21-1-07
Campus:	West Lafayette	**Institutional Priority:**	N/A

GSF OF AREA AFFECTED BY PROJECT 64,620

ANNUAL OPERATING COST/SAVINGS (1)

	Cost per GSF	Total Operating Cost	Personal Services	Supplies and Expenses
1. Operations	$ -			
2. Maintenance	$ 1.47	**$ 95,000**		
3. Fuel	$ -	**$ -**		
4. Utilities	$ 5.43	**$ 351,000**		
5. Other	$ 1.11	**$ 71,500**		
TOTAL ESTIMATED OPERATIONAL COST/SAVINGS	**N/A**	**$ 517,500**	**N/A**	**N/A**

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

N/A