



Administrative Operations

BOARD APPROVED
AUGUST 5, 2022

Cindy Ream
Corporate Secretary

TO: Members of the Board of Trustees

FR: Jay Wasson, Vice President for Physical Facilities and Chief Public Safety Officer

DATE: July 27, 2022

RE: Approval of Ten-Year Capital Plan

Attachments:

- Purdue University 2023-2025 Capital Request Narrative
- 2023-2025 Capital Request Priority Project Summaries
- 2023-2033 Ten-Year Capital Project Plan – Purdue University System-Wide Summary of Major Capital Projects

The enclosed capital planning documents summarize Purdue's 2023-2025 Capital Project Request and 2023-2033 Ten-Year Capital Plan. The final capital request will consist of a narrative and a prescribed set of tables and schedules issued jointly from the Indiana Commission for Higher Education (ICHE) and the State Budget Agency/Committee. These materials will be prepared and submitted to ICHE based on your approval of the capital plan and institutional priority rankings.

The evolution of the current draft of the Ten-Year Capital Plan is the result of a six-month capital planning process started in January with a request of the deans, vice presidents and chancellors to engage with the leadership of Physical Facilities to identify facility needs in the context of strategic initiatives, including Purdue Moves, Next Moves and various other campus planning activities currently underway. Physical Facilities, with support from administrative leaders, has evaluated the requests and conceptual funding plans for the various facility needs and have prepared the set of near-, mid-, and long-term facility project plans that will be submitted for your review on August 5, 2022.

Following approval from the Board of Trustees, this material will be submitted to ICHE and the State Budget Committee.

c: Chairman Mike Berghoff
President Mitch Daniels
Treasurer Chris Ruhl
Provost Jay Akridge
Corporate Secretary Cindy Ream
General Counsel Steve Schultz

Purdue University 2023-2025 Capital Request Narrative

Introduction

The Ten-Year Capital Plan, in conjunction with the 2023-2025 Legislative Capital Request, outlines the strategy for Physical Facilities to maintain and renew Purdue University's physical infrastructure while prioritizing university initiatives, inclusive of Purdue Moves, Next Moves and a variety of other endeavors.

As in past years, it is important that the Ten-Year Capital Plan and the 2023-2025 Legislative Capital Request make progress on the following key themes:

- **Renewal through renovation and replacement:** renovating and repurposing of existing space to allow our campuses to increase efficiency, sustainability and safety
- **Development through private, public and institutional partnerships:** leveraging resources and aligning partners to create modern and efficient facilities that support emerging scientific methods and evolving instructional techniques, and providing improved opportunities for cross-disciplinary collaboration

Process

The framework to guide the growth, development and reinvestment in Purdue's physical infrastructure is rooted in each campus's master plan and guided by the University's strategic priorities. Purdue's capital project planning and the development of the 2023-2033 capital request involves:

- A biennial (once every two years) process to establish the Ten-Year Capital Plan
- An annual process to develop a repair and rehabilitation (R&R) and infrastructure plan

Purdue's capital project approval process, including new construction, facility renovations, leases and property acquisitions, are governed by State statute and the Bylaws of the University.

This year, Physical Facilities leadership consulted university deans, vice presidents and chancellors to identify facility needs in the context of university strategic priorities. Physical Facilities, with support from administrative leaders, then evaluated the requests and funding plans for each identified need and organized them into a set of near-, mid- and long-term projects.

Balanced Capital Approach and Priority Projects

Throughout the evolution of the Ten-Year Capital Plan, Physical Facilities is mindful of the need to ensure financial viability and stewardship during challenging economic climates and to prioritize and contribute to student affordability and sustainability.

In order to achieve these goals, Purdue has adopted a balanced capital program approach for system-wide facility and infrastructure investments. This approach consists of the following core principles:

- Renovate existing facilities, where feasible
- Replace existing facilities with new, where appropriate
- Add new space only when needed

Our 2023-2025 Legislative Capital Request and Ten-Year Capital Plan are built on these fundamental core principles.

The following attachments consist of summaries of each of the prioritized projects (listed in order) that make up the 2023-2025 Legislative Capital Request:

1. Nursing and Pharmacy Education Building
2. Rhinehart Music Center Addition, Purdue University Fort Wayne
3. Chilled Water Enhancements
4. Chiller Plant Upgrade and Chilled Water Line Replacement, Purdue University Northwest
5. Krannert Center Renovation
6. Energetics Research Lab Building Phase 1

While not part of the 2023-2025 Legislative Capital Request, supplementary summaries on the following projects are included for alternative legislative consideration:

- Animal Disease Diagnostics Laboratory Renovation
- Heeke Diagnostics Laboratory Facility Replacement

2023-2025 Capital Request Priority Project Summary

Nursing and Pharmacy Education Building, Near-term priority #1

Scope

- Construct a new 201,500 GSF building that will provide a new home for the College of Pharmacy and the School of Nursing on the West Lafayette campus
 - This includes 35,000 GSF of animal holding (vivarium) space for procedural and behavioral testing
- The facility will support modern teaching pedagogy, interprofessional education and clinical learning
- The building will include multiple general use classrooms, clinical instructional spaces, study spaces, offices and common space
- Demolish the Grounds Service Building

Location

Purdue University West Lafayette

Project Cost

\$160M

- \$89M, estimated state funding
- \$71M, estimated other funding

Space Summary

	<u>ASF</u>	<u>GSF</u>
New Space to be Built	102,500	201,500
Space to be Terminated	<u>12,000</u>	<u>15,000</u>
Net Change in Campus Space	72,000	145,000

	<u>ASF</u>
Space to be Renovated	0
Space to be Repurposed	76,000*
Space to be Released	0

** This includes 49,000 GSF for facilities that are slated for future demolition: Johnson Hall of Nursing, Life Science Animal Building and Veterinary Laboratory Animal Building*

Timeline

- Construction duration: 24-30 months
- Construction initiation: Summer 2024
- Construction completion: Fall 2026

Project Need

- Current nursing and pharmacy instructional and administrative space is spread out among four buildings on north and south sections of the West Lafayette campus
- The new, centralized space supports the *Purdue Next Moves: Transformative Education 2.0* initiative
- The COVID-19 pandemic has further highlighted the need to modernize clinical educational facilities for nursing and pharmacy programs due to the critical roles that these professionals play in public health initiatives
 - The advanced clinical skills required for combating acute and long-term effects of complex diseases such as COVID-19 will be supported by the new Nursing and Pharmacy Education Building, including:
 - Patient screening and testing
 - Diagnostic and antibody testing
 - In- and out-patient care
 - Flu shot and vaccination administration
- World-changing research is one of the central pillars of *Purdue Moves*, the university’s strategic agenda. Existing vivarium space is distributed across 18 facilities and inadequately supports current animal research across six colleges. In addition, these spaces cannot accommodate future expected growth.
- Purdue’s recently completed Animal Facilities Master Plan identified 12 of the 18 current facilities as requiring renovation or replacement as they do not meet current standards for climate control and mechanical systems or holding room size.

State Biennial Request History

- Summary of this project’s inclusion in previous state biennial requests:

Biennium	Project Name	State Funding Request	System Priority	Notes
2021-2023	Active Clinical Learning Building	\$73M	Priority 1	Two separate near-term projects from the 2021-2023 biennial request were combined into one for 2023-2025.
2021-2023	Vivarium Renovations	\$20M	Priority 2	
2019-2021	Nursing and Pharmacy Building	\$80M	Medium Term	

Project Owner

Dr. Eric L. Barker, dean, College of Pharmacy
 Dr. Marion Underwood, dean, College of Health and Human Sciences
 Dr. Theresa Mayer, executive vice president for research and partnerships

2023-2025 Capital Request Priority Project Summary

Rhinehart Music Center Addition, Near-term priority #2

Scope

- Construct a 26,000 GSF/16,000 ASF addition onto the existing Rhinehart Music Center to accommodate the current programs and their expected future growth
- The addition will include large and small rehearsal rooms, several studios with control rooms, music editing suites, a critical listening laboratory, a small classroom, and associated administrative and common spaces

Location

Purdue University Fort Wayne

Project Cost

\$22M

- \$14M, estimated state funding
- \$8M, estimated other funding

Space Summary

	<u>ASF</u>	<u>GSF</u>
New Space to be Built	16,000	26,000
Space to be Terminated	<u>0</u>	<u>0</u>
Net Change in Campus Space	16,000	26,000

	<u>ASF</u>
Space to be Renovated	0
Space to be Repurposed	0
Campus Space to be Released	6,640

Timeline

- Construction duration: 18-24 months
- Construction initiation: Spring 2025
- Construction completion: Fall/Winter 2027

Project Need

- The Purdue University Fort Wayne School of Music opened a remote learning facility on the Sweetwater Sound campus in 2018, and the approximately 8,200 GSF of leased space provided newly remodeled facilities for the school's Popular Music and Music Industry programs. The initial lease term was six years, ending in November 2023, with three one-year mutual extensions available until November 2026. When completed, the addition will replace the leased space.

- Program enrollment has approximately doubled since the remote leased facility opened, requiring more space and amenities than is present in the current location. The leased facility is currently operating at nearly full capacity.

State Biennial Request History

- This project was listed as a medium-term request in the 2021-2023 biennial submittals and a long-term request in the 2019-2021 biennial submittals.

Project Owner

Dr. Ronald L. Elsenbaumer, Chancellor, Purdue University Fort Wayne

2023-2025 Capital Request Priority Project Summary

Chilled Water Enhancements, Near-term priority #3

Scope

- Construct a new cooling tower and supporting equipment
- Install new chilled water lines along Grant Street from Wade Utility Plant to Central Drive
- Replace existing chilled water lines from the Northwest Chiller Plant to First Street and Stadium Avenue
- Install an above-ground thermal chilled water storage tank and supporting equipment

Location

Purdue University West Lafayette

Project Cost

\$77M

- No state funding is requested

Timeline

- Construction duration: 18-24 months
- Construction initiation: Spring 2023
- Construction completion: Spring 2025

Project Need

- The current chilled water production and distribution infrastructure is incapable of meeting the campus demand for chilled water during a portion of the peak cooling season. Temporary equipment is rented to supplement existing systems to meet current demand. The projected cost to rent, install and operate this equipment for the 2022 cooling season is approximately \$1.5M. These costs will continue to escalate in future years, and there is a limit to the amount of temporary cooling that can be implemented and supported by current infrastructure.
- Failure to meet the campus cooling demand means building temperatures and humidity levels will increase. This jeopardizes research, building health and occupant comfort.

State Biennial Request History

- This project has not been included in previous state biennial requests

Project Owner

Jay Wasson, vice president for Physical Facilities and chief public safety officer

2023-2025 Capital Request Priority Project Summary

Chiller Plant Upgrade and Chilled Water Line Replacement, Near-term priority #4

Scope

- Replace the existing cooling tower and provide an additional chiller for increased capacity on the Westville campus
- Replace the existing chilled water main on the Hammond campus

Location

Purdue University Northwest

Project Cost

\$12M

- \$12M, estimated state funding

Timeline

- Construction duration: 12-18 months
- Construction initiation: Spring 2024
- Construction completion: Summer 2025

Project Need

- Current infrastructure, on both campuses, has been in service for over 50 years and has exceeded its life expectancy
- The addition of the James B. Dworkin Student Services and Activities Complex on the Westville campus in 2016 resulted in the loss of chilled water redundancy

State Biennial Request History

- Summary of this project's inclusion in previous state biennial requests:

Biennium	Project Name	State Funding Request	System Priority
2021-2023	Chiller Plant Upgrade and Chilled Water Line Replacement	\$9M	Priority 4
2019-2021	Chiller Plant Upgrade and Chilled Water Line Replacement	\$10M	Priority 3
2015-2017	Chiller Plant Upgrade and Chilled Water Line Replacement	\$9M	Medium Term
2013-2015	Chiller Plant Upgrade and Chilled Water Line Replacement	\$8M	Medium Term

Project Owner

Dr. Thomas Keon, chancellor, Purdue University Northwest

2023-2025 Capital Request Priority Project Summary

Krannert Center Renovation, Near-term priority #5

Scope

- Renovate and reconfigure approximately 12,000 GSF of space on the second floor to increase student project space
- Update approximately 7,600 GSF of finishes on the lower, first and second floor levels
- Address previously identified repair and rehabilitation deficiencies with the HVAC and electrical systems

Location

Purdue University West Lafayette

Project Cost

\$11M

- No state funding is requested

Space Summary

	<u>ASF</u>	<u>GSF</u>
New Space to be Built	0	0
Space to be Terminated	0	0
Net Change in Campus Space	0	0

	<u>ASF</u>
Space to be Renovated	19,820
Space to be Repurposed	0
Space to be Released	0

Timeline

- Construction duration: 12 months
- Construction initiation: Summer 2023
- Construction completion: Summer 2024

Project Need

- The Krannert School of Management has developed an enrollment growth plan, with current enrollment of approximately 450 students expected to increase to roughly 3,900 students by 2028. Recent enrollment numbers have been higher than anticipated, requiring a near-term solution for additional faculty and staff offices and student support space.
- The renovated space will support the new Integrated Business and Engineering degree program. It will also create space for the Krenicki Center for Business Analytics & Machine Learning, Dauch Center for Management of Manufacturing Enterprises and Dean V. White Real Estate Finance Program, where

funded student research is conducted and collaboration between students, faculty and industry partners takes place. Real estate finance will be added as an academic minor program in the 2022-23 school year.

- The building was constructed in 1983 and has not been updated to support modern teaching and learning methods or program needs. The renovation will support the *Purdue Next Moves: Transformative Education 2.0* initiative with experiential education opportunities and reconfigured, more efficient space utilization.

State Biennial Request History

- This project has not been included in previous state biennial requests

Project Owner

Dr. David Hummels, Dr. Samuel R. Allen Dean of the Krannert School of Management, Distinguished Professor of Economics

2023-2025 Capital Request Priority Project Summary

Energetics Research Lab Building Phase 1, Near-term priority #6

Scope

- Construct a building to fabricate, test, detect, deploy and defeat next-generation energetic materials.
- This new facility will be comprised of research lab space, conference and support rooms and a surrounding corridor.

Location

Purdue University West Lafayette

Project Cost

\$15M

- No state funding is requested

Space Summary

	<u>ASF</u>	<u>GSF</u>
New Space to be Built	3,645	6,927
Space to be Terminated	0	0
Net Change in Campus Space	3,645	6,927

	<u>ASF</u>
Space to be Renovated	0
Space to be Repurposed	0
Space to be Released	0

Timeline

- Construction duration: 12-18 months
- Construction initiation: Spring 2024
- Construction completion: Summer 2025

Project Need

- Purdue University is a national and global leader in discovery and innovation, ranking in the top research institutions in North America. As energetic research endeavors expand, unique facilities for synthesis and fabrication, diagnostics and characterization, and detection and defeat are required.
- Existing facilities are not designed or constructed to safely handle and test energetic material types and quantities proposed by Purdue Energetics Research Center (PERC), an interdisciplinary team with a focus on energetic materials.
- The construction of this facility will support the *Purdue Next Moves: Purdue Applied Research Institute (PARI)* initiative.

State Biennial Request History

- This project has not been included in previous state biennial requests

Project Owner

Dr. Mark Lundstrom, interim dean of the College of Engineering and the Don and Carol Scifres Distinguished Professor of Electrical and Computer Engineering
Dr. Theresa Mayer, executive vice president for research and partnerships

2023-2025 Capital Request Priority Project Summary – Alternative Legislative Consideration

Animal Disease Diagnostics Laboratory Renovation, Near-term priority

Scope

- Modernize the laboratory facility to enhance biosecurity, staff safety and regulatory compliance

Location

Purdue University West Lafayette

Project Cost

\$7M

- \$7M, estimated state funding

Space Summary

	<u>ASF</u>	<u>GSF</u>
Space to be Built Out	0	0
Space to be Demolished	<u>0</u>	<u>0</u>
Net Change in Campus Space	0	0

	<u>ASF</u>
Space to be Renovated	1,537
Space to be Repurposed	0
Campus Space to be Released	0

Timeline

- Construction duration: 12-15 months
- Construction initiation: Spring 2024
- Construction completion: Summer 2025

Project Need

- Purdue’s Animal Disease Diagnostic Laboratory (ADDL) is a state-of-the-art facility with a strong multidisciplinary team of professionals who provide state-wide veterinary diagnostic testing of diseases including those that may affect the human population.
- The Animal Disease Diagnostic Laboratory is fully accredited by the American Association of Veterinary Laboratory Diagnosticians, but some of the current equipment needs to be replaced in order to remain regulatory and code compliant.

State Biennial Request History

- This project has not been included in previous state biennial requests

Project Owner

Dr. Willie Reed, dean, College of Veterinary Medicine

2023-2025 Capital Request Priority Project Summary – Alternative Legislative Consideration

Heeke Diagnostics Laboratory Facility Replacement, Near-term priority

Scope

- Construct a new approximately 12,500 GSF animal disease diagnostic laboratory facility that would provide services to assist in the eradication of diseases that affect humans and animals
- The project will create a biosafety level 2 (BSL-2) diagnostic necropsy lab, seven modular labs and a media prep lab for serology, virology, microbiology and molecular biology
 - Administrative space is also included
- Provide access on all sides of the building to facilitate biocontainment and improve traffic flow

Location

Southern Indiana Purdue Agriculture Center – Dubois, Indiana

Project Cost

\$14M

- \$14M, estimated state funding

Space Summary

	<u>ASF</u>	<u>GSF</u>
New Space to be Built	7,504	12,500
Space to be Demolished	<u>0</u>	<u>0</u>
Net Change in Campus Space	7,504	12,500

	<u>ASF</u>
Space to be Renovated	0
Space to be Repurposed	4,700
Space to be Released	0

Timeline

- Construction duration: 12-18 months
- Construction initiation: Spring 2024
- Construction completion: Summer 2025

Project Need

- The existing Heeke Animal Disease Diagnostic Laboratory facility was constructed in 1969 to support the poultry industry, and a later laboratory addition made it possible to extend services to other animals

- The facility is outdated and would require significant and costly renovations and upgrades that would be difficult to complete, including but not limited to sanitation measures, ventilation, mechanical systems, electrical systems and layout/traffic flow
- The current facility is not a BSL-2 lab; lacks sufficient lab, cooler and animal holding space; and is subpar compared to other state diagnostic laboratories in the United States
- As a BSL-2 lab, the new facility will allow for increased and more efficient testing
 - Automated equipment will reduce error and contamination, and automated building systems will allow for greater monitoring and adjusting of controls to maintain safety, biosafety, biocontainment and biosecurity programs

State Biennial Request History

- This project was listed as a near-term project for alternative legislative consideration in the 2021-2023 biennial submittals

Project Owner

Dr. Willie Reed, dean, College of Veterinary Medicine

**2023-2033 TEN-YEAR CAPITAL PROJECT PLAN
PURDUE UNIVERSITY SYSTEM-WIDE SUMMARY OF MAJOR CAPITAL PROJECTS**

Proposed Projects	Near Term 2023-25 (\$, Millions)			Medium Term 2025-27 (\$, Millions)		Long Term 2027-33 (\$, Millions)		Total Project Cost
	Near Term Priority Ranking	Est. State Funding	Est. Other Funding	Est. State Funding	Est. Other Funding	Est. State Funding	Est. Other Funding	
MAJOR RENOVATIONS								
West Lafayette Campus								
Hansen Life Sciences Research Building Renovation		-	-	-	-	-	95	95
Krannert Center Renovation	⑤	-	11	-	-	-	-	11
Physics Building Renovation, Phase I		-	-	35	5	-	-	40
<i>West Lafayette Campus Subtotal</i>		-	11	35	5	-	95	146
Fort Wayne Campus								
Building Envelope and Infrastructure Renovation, Phase I		-	-	-	-	14	-	14
HVAC Control Systems Replacement and Upgrade		-	-	9	-	-	-	9
South Campus Renovations, Phase II		-	-	17	-	-	-	17
<i>Fort Wayne Campus Subtotal</i>		-	-	26	-	14	-	40
Northwest Campus								
Chiller Plant Upgrade (W) and Chilled Water Line Replacement (H)	④	12	-	-	-	-	-	12
Fitness Recreation Center Renovation (H)		-	-	-	-	7	3	10
Library Student Library Building Lab Renovation and Expansion (W)		-	-	6	-	-	-	6
Porter Demolition (W)		-	-	5	-	-	-	5
Schwarz Hall Demolition (W)		-	-	9	-	-	-	9
Student Union & Library Renovation, Phase I (H)		-	-	20	-	-	-	20
<i>Northwest Campus Subtotal</i>		12	-	40	-	7	3	62
<i>Major Renovations Subtotal</i>		12	11	101	5	21	98	248
NEW CONSTRUCTION								
West Lafayette Campus								
Aviation Technology Facility Upgrades		-	-	38	6	-	-	44
Energetics Research Lab Building, Phase I	⑥	-	15	-	-	-	-	15
Forestry and Natural Resources Building Replacement		-	-	93	19	-	-	112
Indiana Corn and Soybean Center Soil Handling Facility Addition		-	-	-	-	-	12	12
Nursing and Pharmacy Education Building	①	89	71	-	-	-	-	160
Chilled Water Enhancements	③	-	77	-	-	-	-	77
Chiller 1, 2 & 8 Replacements		-	-	-	-	-	48	48
<i>West Lafayette Campus Subtotal</i>		89	163	131	25	-	60	468
Fort Wayne Campus								
Chiller Plant Expansion and Utility Infrastructure Replacement		-	-	-	-	16	-	16
Engineering, Technology and Computer Science Building Addition		-	-	64	-	-	-	64
Gates Athletic Center Addition		-	-	-	-	-	20	20
Rhinehart Music Center Addition	②	14	8	-	-	-	-	22
<i>Fort Wayne Campus Subtotal</i>		14	8	64	-	16	20	122
Northwest Campus								
Impact Lab (H)		-	-	9	-	-	-	9
<i>Northwest Campus Subtotal</i>		-	-	9	-	-	-	9
<i>New Construction Subtotal</i>		103	171	204	25	16	80	599
TOTAL PROGRAM								
TOTAL ESTIMATED FUNDING BY SOURCE		\$115M	\$182M	\$305M	\$30M	\$37M	\$178M	
TOTAL ESTIMATED FUNDING BY TERM			\$297M		\$335M		\$215M	\$847M

Projects Separated for Alternative Legislative Consideration	Near Term 2023-25 (\$, Millions)			Medium Term 2025-27 (\$, Millions)		Long Term 2027-33 (\$, Millions)		Total Project Cost
	Near Term Priority Ranking	Est. State Funding	Est. Other Funding	Est. State Funding	Est. Other Funding	Est. State Funding	Est. Other Funding	
NEW CONSTRUCTION & MAJOR RENOVATIONS								
Animal Disease Diagnostics Laboratory Renovation		7	-	-	-	-	-	7
Heeke Diagnostics Laboratory Facility Replacement		14	-	-	-	-	-	14
<i>West Lafayette Campus Subtotal</i>		21	-	-	-	-	-	21

Projects for Innovative Project Delivery Public Private Partnerships	Near Term 2023-25 (\$, Millions)			Medium Term 2025-27 (\$, Millions)		Long Term 2027-33 (\$, Millions)		Total Project Cost
	Near Term Priority Ranking	Est. State Funding	Est. Other Funding	Est. State Funding	Est. Other Funding	Est. State Funding	Est. Other Funding	
NEW CONSTRUCTION (P3)								
West Lafayette Campus								
Health and Life Sciences Interdisciplinary Research Building		-	120	-	-	-	-	120
Student Housing - Meredith Redevelopment, Phase III		-	-	-	150	-	-	150
<i>West Lafayette Campus Subtotal</i>		-	120	-	150	-	-	270
Fort Wayne Campus								
Student Housing, Phase IV		-	50	-	-	-	-	50
<i>Fort Wayne Campus Subtotal</i>		-	50	-	-	-	-	50