Capital Project Stage Gate II:
Jen-Hsun and Lori Huang Collaborative Innovation Complex

BACKGROUND

The Jen-Hsun and Lori Huang Collaborative Innovation Complex project is included in the Ten-Year Capital Forecast. At its October 2022 meeting, the Finance and Administration Committee advanced the project to the design development phase, which the university has now completed. The following information is provided for the Finance and Administration Committee as it considers recommending to the board advancement of this project to the construction phase, pursuant to the Approval of Capital Projects policy.

PROJECT SUMMARY

COLLABORATIVE INNOVATION COMPLEX

Square Feet	**145,000**
Project budget	**$213,000,000**
State-paid Bonds	$75,000,000
OSU-paid Bonds	$47,000,000
Gifts	$75,000,000
E&G CIR	$16,000,000
Deferred maintenance reduction	**$70,000,000**
Estimated project completion	**Winter 2026**
Estimated Carbon Impact	**TBD**
Location	**NW Monroe Avenue, Corvallis**

The Jen-Hsun and Lori Huang Collaborative Innovation Complex will be a dynamic place where creative, driven faculty and students come together to conduct research to solve critical challenges facing the state, nation and world. The Huang Collaborative Innovative Complex will advance team-based, transdisciplinary research and learning, while harnessing artificial intelligence, computation and materials science to tackle grand challenges in climate science, sustainability and health.

The complex will employ a next-generation supercomputer designed to solve the world's most challenging computational problems. (The $25M private gift for the supercomputer is not included in this building project's funding plan, presented above.) The Huang Collaborative Innovation Complex will also construct a state-of-the-art clean room and other specialized signature research facilities purposely designed to facilitate team-based research. The complex will support innovation, entrepreneurship and partnerships with industry, while helping to

prepare bachelor through Ph.D. degree graduates for Oregon's workforce and beyond. The Huang Collaborative Innovation Complex also underpins OSU's research and education efforts supporting the semiconductor industry and helping propel Oregon State's mission to pursue groundbreaking solutions for the betterment of humanity, the environment and the economy. The complex will serve as a hub in a larger effort to build further on OSU's distinction for highly collaborative research and innovation, an ongoing initiative that includes complementary facilities renovations, faculty hiring, and programs accelerating and supporting team-based research.

Building and Program

The approximately 145,000 square foot (SF) building will be constructed south of NW Monroe Avenue between the Earth, Ocean and Atmospheric Sciences Administration Building and the Lonnie B. Harris Black Cultural Center. The site offers strategic adjacencies to OSU's major research districts. Weniger Hall will be demolished as part of this project after the complex building is completed. The removal of the aged, inefficient and seismically vulnerable Weniger Hall will reduce OSU's deferred maintenance backlog by $70,000,000. A district heating and cooling exchange plant, distributing the heat from the complex's supercomputer, will be added to the adjacent Kelley Engineering Center. The recovered heat is expected to serve the complex as well as Kelley, Johnson Hall and several other nearby buildings.

The Huang Collaborative Innovation Complex includes a rich program mix of highly specialized signature spaces and more flexible research facilities that allow for cross-disciplinary collaboration. With extensive faculty input, the programs have been arranged to optimize the exchange of ideas between researchers. The ground level is conceived as a public floor that opens up to the community with welcoming lobbies and meeting spaces, and showcases the signature spaces, making the complex a one-of-a-kind research facility. The signature facilities will include the following: a cyber physical playground, an extended reality theater, a water research facility, a clean room and a maker space. The ground level will also be home to the supercomputer. The building's upper floors will consist of flexible research laboratories. Collaboration spaces will be dispersed throughout the entire building at key connection points to encourage interaction between researchers, provide easy access to vertical and horizontal circulation and allow for direct view into the signature facilities.

Student Impact

Unique access to education and research assets, including the supercomputer, clean rooms, Extended Reality Theater, maker-space, cyber physical playground and laboratories will connect students with OSU research and researchers as well as our collaborative partners. The Huang Collaborative Innovation Complex is being deliberately designed for inclusivity and accessibility, to advance the success of all students, with targeted outreach to students underrepresented in STEM fields.

ADVANCING OSU'S STRATEGIC GOALS

Goal 1 **Preeminence in Research, Scholarship and Innovation**	***Goal 2*** **Transformative Education That is Accessible to All Learners**	***Goal 3*** **Significant and Visible Impact in Oregon and Beyond**	***Goal 4*** **A Culture of Belonging, Collaboration and Innovation**
The next-generation supercomputer designed to solve the world's most challenging computational problems, a state-of-the-art clean room and other specialized research facilities purposely designed to facilitate team-based research will promote OSU as the place to teach and conduct research, collaboratively solve the world's greatest problems and address impactful 21st-century opportunities.	The complex's focus on climate science, sustainability and health will promote OSU as the place to enroll among students interested in the world's greatest problems. The open, inclusive and collaborative nature embedded in the research and education programs that the complex will host will engage both graduate and undergraduate students.	The CIC's supercomputer will be among the most powerful in the country, enabling deep modelling and massive computational power. Combined with clean rooms, signature research facilities and laboratories, it will be an invaluable asset to not only OSU but also to research collaborators from throughout the state, region, country and world.	An important and prominent mission of the complex is to advance learning, career opportunities, teaching and research among students and faculty for all, identifying qualities that will make all people feel seen and welcome within the building. The complex will serve as a focal point for OSU to advance diversity, equity and inclusion in STEM education and research.

IDENTIFICATION OF RISKS AND MITIGATION STRATEGIES

The following risks have been identified for the project. Given these risks, the owner, design, and construction contingencies have been set at 4%, 9% and 3%, respectively.

Risks	Likelihood	Severity	Consequences	Mitigation Strategy
Higher than expected material availability and construction market escalation	High	High	Market and fuel disruptions and significant inflation continue to impact the construction market.	The project has been estimated by both the General Contractor and a third-party estimator based on market conditions including escalation to the midpoint of construction.

Labor availability	Medium	Medium	The local construction market is currently saturated and the shortage of skilled labor could affect the cost and schedule of construction.	This risk is mitigated by the contingencies stated above. Also, the General Contractors have estimates and commitments from trade partners for the most significant and vulnerable trades.
State Funding	Low	High	The State Legislature will determine higher education capital funding in May or June. The complex project is likely to be funded; however, the risk exists that it may not.	No construction will take place until after the legislature approves the requested state bond funding for this project.
Unforeseen site conditions	Low	Low	Variances in soil conditions or utilities could be discovered during excavation.	Studies were conducted by consultants to assess existing conditions. The contingencies noted above will be in place to cover unexpected costs.
Project delay	Low	Low	Delays in funding, permitting, logistics, or contract disputes present a risk to schedule and the costs associated with an extended construction period.	This risk is mitigated by having a team in place that considers critical activities, appropriate timelines, and measures to avoid and accommodate delays.

TOTAL COST OF OWNERSHIP

The estimated life cycle ownership costs for the Huang Collaborative Innovation Complex project are summarized in the following table. A *pro forma* is not included as the project is not utilizing revenue financing. The debt service related to the OSU-paid bonds, along with projected material impacts to utilities and maintenance costs, are included in E&G budget projections in the Ten-year Business Forecast.

Forecasted Total Cost of Ownership Collaborative Innovation Complex	
ITEM	COST
Total Project Cost	**$213,000,000**
Capital Improvement and Renewal (CIR) Funds – Weniger Demolition	$16,000,000
State-paid Bonds	$75,000,000
OSU-paid Bonds	$47,000,000
Gifts	$75,000,000
Total Cost Avoidance	**($70,000,000)**
Removal of Deferred Maintenance (Demolition of Weniger Hall)	($70,000,000)
Annual Operating Cost (non-program/academic)	**$3,500,000**
Additional annual operations staff, energy, maintenance cost	$3,500,000

The Higher Education Coordinating Commission (HECC) ranked the Huang Collaborative Innovation Complex project as the number two priority for capital funding in the 2023-2025 biennium. The request will be considered during this 2023 legislative session.

RECOMMENDATION

Staff recommend that the Finance and Administration Committee recommend to the board approval of a capital project budget of $213M for the Jen-Hsun and Lori Huang Collaborative Innovation Complex project and advancing of the project to the construction phase.