

## Capital Project Stage Gate II: Cordley Hall

### BACKGROUND

The Cordley Hall renovation project is included in the Ten-Year Capital Forecast. On April 4, 2019, the Finance & Administrative Committee advanced the project to the design development phase, which the university has now completed. The following information is provided for consideration of advancing this project to the construction phase, pursuant to the Board's [Approval of Capital Projects Policy](#).

### PROJECT DESCRIPTION, SCOPE AND PROGRAM

Cordley Hall is a 235,914 square foot research and education building constructed in two phases in the late 1950s and early 1960s. The building currently houses the departments of Integrative Biology (IB) and Botany and Plant Pathology (BPP). These two programs serve more than 1,100 students and in FY2018 obtained over \$10.5M in new grant funding. The natural history collections of the OSU Herbarium and the Oregon State Arthropod Collection (OSAC) contain over 3.5 million specimens; they are the premiere Pacific Northwest collections in their fields and serve as a rich resource for all aspects of OSU's mission.

Cordley Hall has served long past its expected life and now faces failure or obsolescence of nearly every system. Capital improvements will include fire sprinklers and alarms, seismic safety, accessibility, modern mechanical and electrical systems, standby power, lighting, windows and entries, and interior finishes. The building's functional arrangement will be updated to meet new research space guidelines, including modular designs of laboratories that are adaptable for future research. Collaborative and shared laboratory and support spaces and shared services (e.g. freezer farms and growth chamber rooms) are a priority. This design will result in a more resilient building that is responsive to current and projected research needs.

The project includes building an additional district chiller within an existing chiller loop in order to obtain adequate cooling capacity for Cordley Hall. This new district chiller would also remove the need to replace aging chillers in two other research-intensive buildings, which are currently scheduled for 2017-19 state bond funded capital improvement and renewal funds. A new district chiller in Cordley Hall would provide increased system reliability and reduced maintenance costs. It also offers the potential for future expansion, which would allow for the eventual replacement of a second building's chiller and provide cooling capacity for two more existing research buildings (both are forecasted for renovation and have no central cooling). Thus, this work in Cordley provides a foundation for ultimately serving six buildings with two improved systems.

### ESTIMATED TOTAL PROJECT BUDGET, FUNDING AND TIMELINE

The renovation will be accomplished through three funding phases. An outline of funding strategies and design and construction phases follows.

Phase & Biennium	Sources of funds				
	State-paid bonds	State-paid CIR	OSU-paid bonds	E&G CIR	Total
Phase 1: 2017 - 2019	\$15.00	\$6.10	-	-	\$21.10
Phase 2: 2019 - 2021	\$28.00	\$3.70	-	\$28.00	\$59.70
Phase 3: 2021 - 2023	\$30.00	\$8.00	\$25.00	\$15.00	\$78.00
Total 3 Phases	\$73.00	\$17.80	\$25.00	\$43.00	\$158.80

**Phase 1 (2017-2019)**

A comprehensive design will be developed and improvements to fire and life safety and HVAC systems will begin on one-half of the building, and the entire roof will be replaced.

**Phase 2 (2019-2022)**

The west side of the building will be completely renovated. Estimated completion date is summer 2022.

**Phase 3 (2021-2024)**

The east half of the building will be renovated. Estimated completion date is summer 2024.

**IDENTIFICATION OF RISKS AND PROPOSED CONTINGENCY**

The following risks have been identified for the Cordley Hall project. Given these risks, the project contingencies for design, construction, and owner are 6%, 5%, and 6%. The lower design contingency reflects that the project design is well established with cost estimates confirmed by sub-contractor specialists.

Risks	Consequences	Mitigation Strategy
<i>Funding</i>	The project relies on yet-to-be-approved state funding for the 2019-2021 and 2021-2023 biennia. The project is also dependent on OSU Revenue Bond and Education and General Fund (E&G CIR) availability.	A decrease in funding would require a change in scope, the delay in the renovation of one of the sides, or the cancellation of the project. For example, if the project were limited to the funds already approved (\$15M XI-Q bonds and \$6.1M in state bond funded capital improvement and renewal funds), the scope could be reduced to adding safety systems (sprinkler/alarms), HVAC component replacements, and limited air conditioning to the unconditioned side.
<i>Undiscovered conditions</i>	Renovations carry an inherent risk of the actual construction or conditions	This risk is mitigated by construction contingency.

	being different from archived documents or even explorative inspection and testing, especially in older buildings. Conditions beyond what is expected would present a risk to final cost, schedule, and/or the quality and scope of the project.	
<i>City Public Improvement by Private Contractor (PIPC) requirements</i>	Public improvement(s) and infrastructure may need to be constructed in accordance with the latest edition of the <i>City of Corvallis Standard Construction Specifications</i> . This would increase the cost and scope of the project.	This risk is mitigated by construction contingency or the scope could be revisited to fit within the expected budget.
<i>Labor and materials availability</i>	Availability of resources beyond what contingency can mitigate presents risk to cost, schedule, and possible scope.	This risk is mitigated by construction contingency.
<i>Higher than expected construction market escalation</i>	This risk is based more on national/regional economics than labor availability (above), but risks are similar.	This risk is mitigated by escalation at 7% for the first year and 5% thereafter and design contingencies.
<i>Project delay</i>	Funding, permitting, logistical, contractual, or any reason for substantial delays in construction present not only schedule vulnerability, but also subject the project to further escalation in materials and labor costs. Stretching the construction period would likely increase the cost for the contractor to manage the project and pay for general logistics (general conditions).	This risk is mitigated by having a team in place early that considers critical activities, appropriate timelines, and measures to avoid and accommodate delays.
<i>Lack of relocation space for occupants</i>	OSU's best practice is to temporarily relocate building occupants during a major renovation. Construction work around occupied spaces creates schedule and logistical liabilities that can add significant costs and can be detrimental to the occupants' health and productivity. If relocation space planned in the Research Way Laboratory were not available, it is very unlikely that this project could proceed within the proposed timeline; costs would also likely increase.	The design process for renovations to the Research Way Laboratory building are underway and are planned to be completed before the vacation of one side of Cordley Hall.

<p><i>Future legislative approval</i></p>	<p>Phase 2 of the Cordley Hall project has requested \$28M to be funded by state paid bonds. The 2018 request was ranked second by the Higher Education Coordinating Commission (HECC) behind the capital improvement and renewal funding. The Governor’s Recommended Budget did not list this project (nor any other major capital request submitted to the HECC). If funding is not obtained in this legislative session, OSU will seek funding in the next session.</p>	<p>A request will be made to the HECC in spring 2020 to recommend \$30M in state bond funding for Phase 3 of the Cordley Hall renovation. A lack of legislative approval for funding would require a change in scope and/or delay in the renovation of one of the two sides of the building. The design for the building enables us to renovate one half of the building, then wait until funding for the other half is secured. The construction contract will be executed by project phase, allowing changes in scope or termination if funding for phase 3 is not as anticipated. We will not execute either phase until after legislative approval of funding for that phase.</p> <p>If funding is delayed, costs will likely increase and would necessitate adjustments in scope.</p>
---	--	--

**TOTAL COST OF OWNERSHIP**

Total cost of ownership is a summary of estimated financial obligations for an asset, including initial design and construction expenses, operations and maintenance, debt service and renewal costs. It is a more useful way of considering the total impacts of E&G projects than the standard project pro forma the university uses for self-support projects, which have a revenue component.

The estimated total cost of ownership over a 50-year life cycle for Cordley Hall is summarized in the following table, which includes total project cost, debt service, operations and maintenance (O&M), and capital renewal funding based on depreciation.

<b>Education and General Fund – Forecasted Total Cost of Ownership Cordley Hall - All Phases</b>	
<b>ITEM</b>	<b>COST</b>
<b>Total project cost</b>	<b>\$158,800,000</b>
Total debt service (30 years – 5.25%)	\$49,921,163
Operations and maintenance (50 years, \$2,654,033 - escalated 3% annually)	\$293,726,708
Capital renewal (50 years – escalated 3%) <sup>1</sup>	\$309,669,685
<b>Total cost of ownership</b>	<b>\$812,117,556</b>

<sup>1</sup>Capital renewal is calculated based on each building's estimated lifespan and associated depreciation, with a 3% annual escalation

**RECOMMENDATION**

Staff recommend that the Finance & Administration Committee recommend to the Board approval of a total capital project budget of \$158.8M for the Cordley Hall Renovation project and advancing of the project to construction phase