

2021-23 Engineering NC's Future Capital Improvement Projects

ISSUE OVERVIEW

The 2021 Appropriations Act (S.L. 2021-180) authorized \$45 million for each fiscal year of the biennium specifically for the capital improvements to support key engineering programs at North Carolina Agricultural and Technical State University, North Carolina State University, and the University of North Carolina at Charlotte. The funds are to be equally divided between the three constituent institutions and are to be used for "capital improvements to existing buildings on that institution's campus that will allow for expanded offerings and enrollments related to that campus' engineering program." The priority and timing of the allocation of the funds will be determined by the Board of Governors.

The University of North Carolina System, pursuant to the request of the General Assembly, conducted a 2019 STEM program Needs Assessment which highlighted the importance of STEM programs as economic drivers for the State. Significant investments into health science programs have previously been authorized for the University of North Carolina at Chapel Hill, The University of North Carolina at Pembroke, and East Carolina University. The allocation of \$90 million for capital improvements at North Carolina A&T, NC State, and UNC Charlotte is a significant investment into engineering programs. The \$90 million for capital improvements is in addition to the \$35 million provided for curriculum improvements, research equipment, and administration.

N.C A&T, NC State, and UNC Charlotte were asked to identify the proposed capital projects and project costs for their Engineering NC's Future capital projects. The composite list of the specific capital projects for each campus is provided below:

Project	Total Estimated Project Cost	Total 2021-23 SCIF Allocation	Other Available Funding	Source of Additional Funds
North Carolina A&T State University				
Renovate and Modernize Engineering Labs and Offices	\$20,000,000	\$20,000,000	-	N/A
Create Two New Interdisciplinary Engineering Labs	\$10,000,000	\$10,000,000	-	N/A
<i>N.C. A&T Subtotal</i>	<i>\$30,000,000</i>	<i>\$30,000,000</i>	-	
North Carolina State University				
Renovate Research Buildings II and IV and Engineering Buildings I, II, and III	\$18,000,000	\$18,000,000	-	N/A
Renovate Mann Hall	\$12,000,000	\$12,000,000	-	N/A
<i>NC State Subtotal</i>	<i>\$30,000,000</i>	<i>\$30,000,000</i>	-	
University of North Carolina at Charlotte				
Burson Building Expansion	\$55,900,000	\$30,000,000	\$25,900,000	SCIF R&R
<i>UNC Charlotte Subtotal</i>	<i>\$55,900,000</i>	<i>\$30,000,000</i>	<i>\$25,900,000</i>	
Grand Total	\$115,900,000	\$90,000,000	\$25,900,000	

ADDITIONAL DETAIL

North Carolina A&T University

Project: Renovate and Modernize Engineering Labs

Total Estimated Project Cost: \$20,000,000

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Additional Funding Available: \$0

Description: The project includes the upgrade and renovation of various engineering labs to provide more modern, updated facilities for all engineering disciplines. The lab renovation will include approximately 5,000 GSF in McNair Hall, Monroe Hall, Cherry Hall, and Webb Hall. Specific projects include the following:

Educational Lab Upgrades (Engineering and Applied Engineering)	\$ 7,000,000
Research Lab Modernizations (Engineering and Nanoengineering)	\$ 6,000,000
HVAC and Ventilation Renovations (Engineering)	\$ 2,000,000
Building and Office Renovations (Engineering and Nanoengineering)	\$ 3,000,000
High Tech Greenhouse Lab (Bioengineering)	<u>\$ 2,000,000</u>
TOTAL	\$20,000,000

Project: Create Two New Interdisciplinary Engineering Labs

Total Estimated Project Cost: \$10,000,000

Additional Funding Available: \$0

Description: The project includes creating two new interdisciplinary engineering labs of approximately 3,000 GSF, located in the Martin Building and the Fort Interdisciplinary Building. Specific projects include the following:

Metaverse Engineering Lab	\$ 2,000,000
Interdisciplinary Engineering Core Research Labs	<u>\$ 2,000,000</u>
TOTAL	\$10,000,000

Proposed Benefit: The projects will expand the capabilities of the university to prepare talented and highly competitive students in engineering, computer science, and related disciplines. The projects particularly emphasize expansion in the engineering and nanoscience joint school. The projects will also support NC A&T's goal of enhancing their standing as a research institution.

North Carolina State University

Project: Renovate Research Buildings II and IV and Engineering Buildings I, II, and III

Total Estimated Project Cost: \$18,000,000

Additional Funding Available: \$0

Description: The project includes partial renovation of multiple buildings on Centennial Campus to provide growth in multiple engineering disciplines. The renovation of Research Buildings II and IV will include approximately 37,000 square footage (SF) and the renovation of Engineering Buildings I, II, and III will include approximately 5,000 SF. The renovations include relocating engineering and non-engineering units to address engineering programs' adjacency requirements.

Project: Renovate Mann Hall

Total Estimated Project Cost: \$12,000,000

Additional Funding Available: \$0

Description: The project includes the partial renovation of Mann Hall to accommodate COE student advising, first and second-year computer science, engineering science and computing engineering courses, faculty offices and associated research space. The project includes comprehensive renovation, including building systems, of about 18,000 SF of the 80,000

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SF building. The building is located on North Campus and was constructed in 1964.

Proposed Benefit: The College of Engineering (COE) will significantly increase the number of undergraduate and graduate students in engineering and computer science disciplines in a phased implementation over the next several years. The target is an increase of about 4,000 students and will require at least 100 new COE tenure/tenure track teaching/research faculty positions and associated staff. This initial growth phase will allow renovation of existing space in multiple buildings to provide new or upgraded instruction spaces (classrooms and teaching labs), research laboratories (computational and intensive), and office space.

University of North Carolina at Charlotte

Project: Burson Building Expansion

Total Estimated Project Cost: \$30,000,000

Additional Funding Available: \$25,900,000 (SCIF R&R for comprehensive renovation)

Description: This project includes a 48,000 SF expansion of the original 1985 building to include experiential, project-based engineering labs, active learning classrooms, collaborative space for students, and specialized data visualization and simulation labs. The expansion will complement the planned comprehensive renovation of the existing building which will be funded from SCIF R&R funds. The expansion will provide additional space that presents a high-tech physical environment, by transforming the curriculum to integrate artificial intelligence into all engineering curricula, and by centralizing specialty engineering labs and classroom space. The University will also invest in faculty to drive top-tier research in artificial intelligence, visualization, and simulation.

Proposed Benefit: The building expansion will enable engineering and related disciplines to grow enrollment to a projected 9,400 students by 2026, a 33 percent increase over 2021, and increase degrees to a projected 3,007 by 2025, an increase of 50 percent from 2021.

RECOMMENDATION

It is recommended that the Board of Governors approve the allocation of the Engineering NC's Future SCIF funds for FY 2021-23 to the three constituent institutions for these specific capital projects.