

Fiscal Year
Capital Outlay Project Request

Institution Name: Lansing Community College

Project Title: Health & Human Services Simulation Center and Veterans Resource Center

Project Focus: Academic

Type of Project: Renovation

Program Focus of Occupants: Health & Human Services (HHS) Simulation Education and one-stop shop for Veterans Resources for military-connected students

Approximate Square Footage: 19,500

Total Estimated Cost: \$14,000,000.

Estimated Start/Completion Dates: October 2024 – September 2026

Is the Five-Year Plan posted on the institution’s public internet site? YES

Is the requested project the top priority in the Five-Year Capital Outlay Plan? YES

Is the requested project focuses on a single, stand-alone facility? YES

Project Purpose

Renovating LCC’s 505 N. Capitol Avenue building to house a Health and Human Services (HHS) Simulation Center and the Office of Veterans and Military Affairs (OVMA) Veterans Resource Center (VRC), will meet two pressing needs. First, the Simulation Center will expand HHS’s ability to deliver high-quality, immersive learning experiences that simulate real work environments, improve patient care and safety, and advance equity within the rapidly changing healthcare industry to nursing and other healthcare students. It will also increase professional collaboration opportunities for healthcare students by allowing them to communicate and consider each other’s unique perspectives, and better prepare them to address the multiple factors that influence the health of individuals, families, and communities. The VRC’s new location will greatly extend its ability to meet the academic, support, and networking needs of veterans, active military, and their families. Both HHS and the VRC have expressed the need to relocate to a larger facility for a number of years.

Scope of Project

The 505 N. Capitol project will renovate a vacant facility owned by the college and transform what were formerly commercial offices into an academically vibrant building that includes adaptive, technology-rich classrooms designed to improve the delivery of instructional content and be flexible and responsive to the changing needs of healthcare students and the healthcare industry. The simulation center will greatly expand HHS’s capacity to provide simulated learning experiences using manikins, standardized patients, and virtual reality modeling and simulation that enable students to interact with

artificial three-dimensional (3-D) visual or other sensory environments. The building will also include tutoring, study, and counseling rooms; office and meeting spaces; debrief rooms; student lounges; and other areas to support HHS and VRC student learning and community engagement.

Program Focus of Occupants

The use of simulation education continues to grow in the healthcare industry, in part as a result of the unique challenges posed by COVID-19. Simulation-based education has since become a standard learner-centered education approach with a broad spectrum of learning activities such as task training, communication skills, role-play, objective structured clinical examinations, and teamwork, using highly sophisticated computerized manikins, standardized patients, and virtual environments that resemble or simulate actual clinical practice environments. As the use of computerized manikins and virtual learning continues to evolve, it is essential that healthcare education programs have access to the latest technology.

Lansing Community College's (LCC) Health and Human Services (HHS) Division is committed to providing high quality healthcare education and improving patient care and safety through simulation education. The ability to deliver immersive experiences that simulate the work environment is essential to meeting both the learning needs of LCC health career students and employment needs within the healthcare industry, especially our local healthcare providers. In addition, the interprofessional collaboration that occurs with simulation education allows students to communicate and consider each other's unique perspectives, and better prepare them to address the multiple factors that influence the health of the individuals, families and communities they will serve. The resulting benefits include improved patient outcomes, fewer preventable errors, reduced healthcare costs, and improved relationships with other healthcare disciplines.

A dedicated HHS Simulation Center will address the following high-priority student and college needs:

- Using high fidelity, virtual, and augmented simulation to create realistic environments that allow students to be fully immersed in clinical activities and use critical thinking skills to address various patient encounters. These immersive experiences allow students to work directly with faculty to achieve clinical outcomes and promote a realistic learning environment where they can assess and identify missteps and correct errors that may not otherwise be addressed. It also allows students to explore the margins of their practices and collaboratively share skills and knowledge.
- Addressing the different needs of diverse healthcare professionals and patients, therefore advancing LCC's commitment to diversity, equity, and inclusion. In the past, adult manikin simulators tended to be idealized representations of young pale-skinned people, mostly men unless they were birthing simulators. As the use of simulation education advances, it will increasingly add a range of populations and social characteristics to its inventory, such as skin tones, age brackets, race, ethnicity, sexual orientation, gender identity, immigrants and refugees, language, functional and learning abilities, religious beliefs, and socioeconomic status.

- Providing an immersive environment that will help students develop empathy, understand different beliefs and backgrounds, and create safe and welcoming environments in which every person feels invited, accepted, respected, supported, and valued to participate fully. For example, immersive learning can help develop empathetic communication, immerse students in different cultures, interact with AI avatars that speak languages different from ones they speak, and create environments from foreign countries.
- Delivering immersive education that serves the learning needs of a changing LCC healthcare student community.
- Providing innovative, high quality, simulation-based educational exercises and performance feedback activities across the continuum of healthcare education
- Developing skills in interpersonal communication, safety, assessment, critical thinking, and team- based patient care.
- Creating the opportunity to work with community health care facilities to provide licensure required continuing education courses for existing healthcare workforce.
- Serving the needs of local and regional healthcare partners through cooperative relationships.

The Simulation Center will be fluid and interchangeable, and available for use throughout HHS programs and the college. The flexibility to match students' simulation and extended reality academic needs will provide unique learning experiences across disciplines, such as:

- *Dentistry*: patient sedation techniques, patient affective behavior training, and implicit bias training scenarios.
- *Ultrasound*: Hololens augmented reality patient scanning to see image overlaid on the patient's body.
- *Fire Science*: driving simulation, practicing firefighting techniques, scene safety, and mass casualty incidents.
- *Police academy*: driving simulation, practicing Active Violence incidents, use of force and implicit bias training, mass casualty incidents, scene assessment.
- *Corrections academy*: mock prison system, prison riot training, prison emergency management exercises, cell searches, and prisoner affective behavioral learning.
- *Cybersecurity and IT programs*: training on latest technology standards for extended reality security and programming for extended reality projects.

- *Building construction*: simulating working in areas traditionally high risk like building rooftops or working at heights.
- *Computer Aided Design (CAD)*: bringing their 3D images to life and doing complete 360 walkarounds and running simulations of the design.
- *Foreign Language*: immersing students in the cultures, taking field trips to foreign countries, and interacting with AI avatars speaking the language they are learning.

HHS has discussed creating a dedicated Simulation Center for almost seven years, but questions about location, design, and funding delayed implementation. In 2023 the college identified constructing a simulation center as a high priority. The currently empty, three-floor 505 N. Capitol Avenue building is almost directly across from the college’s Health and Human Services building, where the nursing program is housed. The renovated building will not only accommodate LCC students and programs, it will also be available to other postsecondary institutions such as the University of Michigan-Flint, with whom we are developing an ADN-BSN nursing partnership, community partners such as the Sparrow and McLaren Health Systems, and other regional and statewide entities interested in using the facility. The capacity to provide learning opportunities across a large geographical region will help advance the nursing program’s reputation as a high-quality and forward-thinking education provider.

On a more pragmatic level, a dedicated simulation center will allow the HHS Division to follow best-practice standards for simulation education, as laid out in the National Council of State Boards of Nursing (NCSBN Simulation Program Preparation Checklist. These include, among others, creating a framework that provides adequate resources (fiscal, human, and material) to support the simulation; having appropriate designated physical space for education, storage, and debriefing; having adequate equipment and supplies to create a realistic patient care environment; and having a long-range plan for anticipated use of simulation in the forthcoming years.

Table 1 compares the current HHS simulation space with what could be available in a new HHS/VRC space. In addition to nursing students, the expanded space will allow students in other high-demand healthcare fields such as EMT, paramedic, and surgical technology to participate in simulation education. While there is a growing need to provide this training across all disciplines, there is no room in the current facility to do so—which underscores that a new Simulation Center will be a meaningful investment for the college.

Table 1: Comparison of Proposed 505 N. Capitol Avenue and Current HHS Simulation Capacity

505 N. CAPITOL	Square feet	HHS BUILDING	Square feet
LOWER LEVEL - SIM		Nursing	
XR Suite	1,524	Control/debrief room	230
Control room	164	Patient room (sim or mannikin)	161
Storage room	185	Supplies, med cart, moulage	117
Fitting room	140	EMS	
Orientation room	226	Control room	228
Medical locked storage	1,551	Patient area	161
Laundry room	216		
GROUND LEVEL - VRC			
Lounge	1015		
Storage	1025		
3 offices	109 each		
Office consult	161		
2 tutors	115 each		
Computer lab	189		
505 GROUND LEVEL - SIM			
3 offices	108 each		
Shared office	146		
505 GROUND LEVEL - SHARED			
Pre-function market	Open space		
Reception	Open space		
Orientation/training/workshop	682		
Facility lounge	230		
Supplies	30		
505 UPPER LEVEL - SIM			
6 simulated patient sim rooms	130, 168,174, 202 (2), 214		
4 clinical sim rooms	120 (3), 94		
Nursing station	358		
OR/OB suite	497		
Moulage storage	78		
4 debrief rooms	98, 123, 173, 184		
Supply room	80		
Student lounge	166		
Standardized patient lounge	159		
Clinical control	284		

In addition to the new building's first floor will also include mechanical and custodial rooms, and each floor will contain two restrooms, an electric/tele/data room, a janitor's closet, and an elevator.

Six large high-fidelity simulation rooms will be used for Nursing courses as well as multi-patient, breakout, and interprofessional simulations exercises in a variety of medical areas including medical-surgical, OB, Pediatrics, Intensive Care Units (ICU), and Post-Anesthesia Care Units (PACU). Four smaller clinic, low fidelity, and standardized patient simulation rooms will be used for nursing courses and mental health scenarios. In addition, these rooms will provide opportunities for outpatient setting training, physical assessments, patient history interviews, and 1:1 standardized patient interactions. A large Obstetrics and Operating Room (OB/OR) suite will provide opportunities for interprofessional simulations, as well as the opportunity to offer community disaster training in a large, centralized space. Finally, the virtual reality space will provide healthcare students from multiple disciplines, and community partners, with the opportunity to engage in lifelike scenarios using augmented reality; for example, a multiple car accident scene, weather disaster, or mass causality incident.

While initially the Simulation Center will serve approximately 500 students annually in the Nursing, EMT, Paramedic, and Surgical Technology programs, in the future it can impact every student at Lansing Community College through the use of virtual reality and simulation. The Simulation Center will also have the opportunity to interact with the larger community through community training and continuing education programs.

The building will also be occupied by LCC's Office of Veterans and Military Affairs (OVMA) Veteran Resource Center (VRC), whose current space is not adequate to meet the needs of the college's Reserve, National Guard, active-duty military students, veterans, and their dependents. The expanded, state-of-the-art location will greatly increase the VCR's ability to offer services and supports that assist military-connected students with readjustment to civilian life and the academic experience, and connect them with customized learning and support systems throughout the college. Veteran-specific orientations and workshops will ease veterans' transition from soldier to student.

More specifically, the VCR will serve as a welcome center and a place for students to study, foster inclusion, and encourage and help one another. To assist with degree and certificate completion and/or transfer to four-year universities, the VRC will offer resources such as a computer lab, advisors, and counselors for academic or personal support, as well as veteran's education benefit assistance and VA healthcare assistance, all of which contribute significantly to their academic success. This success is especially important for military-connected students, since in many cases their military certifications and schooling do not correlate with civilian certifications, degrees, and employment. Without these, veterans often fare poorly in the job market compared to their civilian-educated counterparts.

In addition to significantly altering the 505 N. Capitol building's interior, exterior work will be needed to align this 1960s building with current construction requirements and best practices. The mechanical/electrical, and glass/ glazing systems will be updated for energy efficiency. Insulation throughout the building will also be replaced to remove any asbestos-containing materials and improve energy efficiency. Building accessibility and compliance with ADA regulations will be addressed at all entrances.

ADDITIONAL INFORMATION

How does the project support Michigan's talent enhancement, job creation and economic growth initiatives on a local, regional and/or statewide basis?

Healthcare is a major employer in the Lansing area, with more than 12,000 jobs in 2022 and 1,100 average annual openings. The two major hospitals in this community, Sparrow and McLaren, are both in the process of solidifying partnerships with the University of Michigan and Michigan State University, respectively. As these major research institutions begin to take a more active role in hospital administration, more specialists will be introduced to the area, increasing demand for all healthcare disciplines and raising expectations for the quality of training they are provided.

LCC's nationally-accredited nursing program currently supplies over 75% of the local and regional healthcare workforce while serving as an anchor for a wide range of additional Allied Health programs at the college, including Surgical Technology, Emergency Medical Services, and Phlebotomy, among others. The college's Health and Human Services Division prides itself on training people in these professions not only to provide exceptional care but to work together with other professionals as a team of caregivers. As the healthcare landscape in Lansing demands deeper expertise and higher quality training, LCC is working to adapt its methods to meet these needs in not only Nursing but across all Allied Health professions.

The demand for registered nurses both within and outside of the greater Lansing area is evident. As of July 7, 2023, indeed.com listed 328 registered nurse jobs within a five-mile radius of Lansing and 1,595 within a fifty-mile radius. However, the need for highly trained healthcare workforce is not limited to Lansing. A 2022 Michigan Health Council Healthcare Labor Market Analysis states that the next ten years will see a growing demand for healthcare workers throughout the state, especially in behavioral health, nursing, and patient support occupations. This demand is driven in part by a number of factors. In addition to the large number of "baby boomers" retiring, many healthcare occupations face recruitment and retention challenges. Turnover continues to be a critical issue across the state, with a 2021 rate of 46 percent.

Healthcare workforce demand also extends nationally. The most recent U.S. Bureau of Labor Statistics' (BLS) *Occupational Outlook Handbook* (Nov. 2022) projects that registered nurse employment will grow six percent from 2021 to 2031, with an average of 203,200 job openings each year. As within the state of Michigan, much of this growth will result from the need to replace workers who transfer to different occupations or exit the labor force due to retirement or other factors. Demand for healthcare services will also increase as the population ages and registered nurses will need to provide increased education and care to patients with chronic conditions, whether at home, in residential care facilities, or in hospitals.

EMT workforce needs are also expected to grow. The *Occupational Outlook Handbook* projects that the need for EMTs and paramedics will increase by 7 percent over the next ten years, with approximately 20,000 job openings nationally each year.

Most of our military service members joined the military before their 21st birthday, and it is often the only job they have ever held. While it is true, they have received extensive training during their years of

service, it is often narrow in scope and not immediately translatable to civilian employment. As a result, over 1 million veterans enroll in higher education each year to become successfully employed. Lansing Community College enrolled over 270 veterans and other military connected students during the 2022-2023 academic year, including fall, spring, and summer semesters.

Our veterans are some of the most highly skilled, motivated, honest, hardworking, and experienced people in our country. It would be a disservice to our nation if we did not provide the services needed for our student veterans and military-connected students to be successful while attending school and be successful in obtaining a meaningful career once they complete their higher education journey. Part of ensuring these successes is providing a Veteran Resource Center and a Veteran Services Office to assist all our military-connected students with their needs while they attend LCC. We want to be the bridge to employment for our veterans, keeping in line with some of the veteran employment initiatives the state of Michigan has advanced since 2021 to help ensure Michigan veterans can obtain and retain meaningful careers. LCC has its own veteran programming initiatives, with academic bridge programs and credit awarded for military experience and training being a large part of helping our students succeed. Currently, the college offers and is revamping four veteran bridge programs including Radiological Technology and Military Medic to Paramedic. By offering these programs and awarding credit based on military experience, LCC is fast-tracking career obtainment in highly desirable career fields, along with economic growth within the state.

How does the project enhance the core academic, development of critical skill degrees, and/or research mission of the institution?

Creating a new Nursing Simulation Center is clearly aligned with the college's commitment to serving the learning needs of a changing community, and to fulfilling its strategic plan focus areas of:

- Engaged Learning and Student Success, where students experience an excellent, quality education using all resources available to connect their education to their career objectives.
- Diversity, Equity, and Inclusion (DEI), which embeds DEI principles into all collegewide operations, practices and procedures.

- Competitiveness and Innovation, where ideas are evaluated, prioritized, and transformed into new or improved programs, services, or processes.
- Community Engagement, which builds and enhances mutually beneficial relationships with community partners.

The Simulation Center also fulfills the aspirational values of the Healthcare Simulationist Code of Ethics, including Integrity, Transparency, Mutual Respect, Professionalism, Accountability, and Results Orientation

Current research and evaluation of best practices confirm the need to expand our simulated training capacity. Simulation is increasingly being used in healthcare education because it serves as a bridge between theory and clinical practice, creates realistic learning environments where students can be fully immersed in clinical activities and use critical thinking to address various patient encounters, practice new skills, and learn from mistakes without harming patient safety.

An NCSBN National Simulation Study showed that up to 50% of simulation can be effectively substituted for traditional clinical experience in all prelicensure core nursing courses, and that simulation education is as effective as traditional clinical education when structure and adequately prepared faculty with appropriate resources are incorporated into the prelicensure nursing program.

The HHS Division recognizes and is committed to the value of incorporating simulation into healthcare courses. In 2014, LCC's Nursing program was the first community college in the State of Michigan to receive approved accreditation by the Society for Simulation in Healthcare (SSH). In 2019, the program's simulation accreditation was reapproved by the SSH. HHS has a responsibility and commitment to train, educate, and prepare the future healthcare workforce. Our current facilities are limiting the division's ability to keep up with the rapidly expanding field of simulation education. Having a multifaceted simulation facility will better prepare students for the ever-changing workforce demands.

Is the requested project focused on a single, stand-alone facility? If no, please explain. Yes

How does the project support investment in or adaptive re-purposing of existing facilities and infrastructure?

When the building was vacated in October 2012, LCC committed to incorporating the facility into its campus. This means a renovation and upgrade project is required to bring the building in line with LCC's campus operation. LCC designs and builds using LEED principles and is committed to building to LEED Silver standards. The repurposing of the facility will incorporate the use of sustainable building systems to improve the energy efficiency of the building and provide a comfortable learning environment for our students. Innovative and energy-conserving systems will be incorporated, bringing this building in line with the campus utility standards and minimizing operating costs.

This project also supports the College's mission regarding the strategic focus area of Resource Management and Fiscal Responsibility by investing thoughtfully in an existing facility instead of tearing it down and building an entirely new one, which would require far more fiscal and natural resources.

Resource Management and Fiscal Responsibility: By upholding the values of the college through good stewardship of resources, Resource Management and Fiscal Responsibility addresses the collaborative process of planning and implementing activities that support our ability to make data-informed and transparent decisions. This impacts the financial, human and physical resources, ensuring the health and sustainability of the college” (LCC Strategic Plan 2021 – 2024).

Does the project address or mitigate any current life/safety deficiencies relative to existing facilities? If yes, please explain.

Yes, the building was built in the mid-1960s. LCC will be requesting a change of zoning for this property to match the rest of the campus. The re-zoning will put the building in an educational status so that any architectural/construction changes will include code updates such as fire systems (monitoring, alarms, and suppression). In addition, all ADA-accessible elements would be included in the scope of work.

Typical of 1960s construction, the building has insulation made of potentially hazardous materials. These materials will be properly removed and disposed of. They will be replaced with modern insulation that will improve energy efficiency and provide a safe and comfortable environment for our students. Like the other facilities on campus, the exterior doors will card access to gain entry into the facility and will be capable of being secured from the LCC Police Department Dispatch.

How does the institution measure utilization of its existing facilities, and how does it compare relative to established benchmarks for educational facilities? How does the project help to improve the utilization of existing space and infrastructure, or conversely how does current utilization support the need for additional space and infrastructure?

During academic program development, the utilization of existing facilities is a major consideration. The importance of this assessment is demonstrated by the Campus Master Plan and is discussed in the Facilities, Uses, Needs, and Challenges section for each Academic Division. The Enrollment and Staffing Section, Student Enrollment Trends by Discipline Area, demonstrates the academic use of facilities. Also, LCC uses the Michigan Postsecondary Data Inventory (MPDI) and Michigan Community College Data Inventory (MCCDI) to compare relevant measures to other similar-sized institutions within the state of Michigan.

Room utilization for all classrooms and labs is tracked on a semester basis. Data is reported to academic areas to assist in program offerings and filling wait-listed classes. Student credit hours per semester, full vs. part-time seats, and student count on a semester basis are used as a benchmark by the academic disciplines to determine additional facility needs.

In regards to the new HHS Simulation space, working with programming and space planning consultants from Hobbs & Black Architects, the college determined that none of the other spaces in consideration met the space requirements needed. The location, access, and layout of the 505 N. Capitol Building appear to be ideal for the college’s instructional and student support needs defined herein.

LCC is committed to the occupational training of our returning military veterans and is recognized by Military Times Magazine as a Best for Vets Institution (2022) and a Veteran Friendly Institution by the Michigan Veteran Affairs Agency (2023). The VRC was created and located in the Huron Building to

comply with the national trend for non-academic space to meet the many needs of veterans, such as VA benefit guidance and processing, general liaison services throughout an academic career and dedicated, confidential counseling. The VRC initiated programs and activities for our veteran students, but the current space is materially inadequate for their needs. The completion of this renovation project will provide the proper spaces needed for student success. The goal is to be a leading example for higher education institutions in creating a veteran and military-connected student-safe space on campus and for our VRC to be the benchmark that other institutions strive toward.

How does the Institution intend to integrate sustainable design principles to enhance the efficiency and operations of the facility?

The College will design to LEED (Leadership in Energy and Environmental Design) Silver Green Building certification for this project by applying sustainable principles throughout the design, construction, and operation of the facility. Specifically, the design of the building will incorporate low-flow water fixtures, high-efficiency heating and cooling systems, LED lighting fixtures inside and out, and optimize the use of natural light. Operationally, the facility's energy efficiency will be enhanced using occupancy sensors throughout the building, reducing utility demand whenever rooms are not in use. In addition, this facility will be incorporated into the College's green cleaning and recycling programs.

Are match resources currently available for the project? If yes, what is the source of the match resources? If no, identify the intended source and the estimated timeline for securing said resources.

Yes, LCC currently has \$7,000,000 allocated in LCC's Plant Fund immediately available for this project.

If authorized for construction, the state typically provides a maximum of 75% of the total cost for university projects and 50% of the total cost for community college projects. Does the institution intend to commit additional resources that would reduce the state share from the amounts indicated? If so, by what amount?

Yes, however, the \$14,000,000 capital project request does include a 10% contingency. The College uses multiple methods to control construction costs, for example, value engineering and integrated building design. In addition, the College has a process for the Board of Trustees to approve additional funds for the project if deemed necessary. The specific amount would depend upon the rationale presented to the Board of Trustees for their approval.

Will the completed project increase operating costs to the institution? If yes, please provide an estimated cost (annually, and over a five-year period) and indicate whether the institution has identified available funds to support the additional cost.

No. As a part of the relocation of the Veteran's Resource Center, the Huron Building will be closed until it can be renovated or raised at some point in the future. The College will then transfer the operating budget for the Huron building to the newly renovated building at 505 N. Capitol Avenue.

What impact, if any, will the project have on tuition costs?

None. The operation of the building would have no direct impact on tuition costs. Tuition at LCC remains in the lowest quartile of Michigan's 28 community colleges.

If this project is not authorized, what are the impacts to the institution and its students?

Getting access to clinical sites for LCC Health and Human Services students requires them to drive farther and farther to get their required hours in, and the current facilities are limiting the ability of the HHS Division to keep up with the rapidly expanding field of simulation education.

What alternatives to this project were considered? Why is the requested project preferable to those alternatives?

The team considered the use of 6,000 square feet of undeveloped space within the current Health and Human Services Building and the renovation of the Huron Building. However, after working with programming and space planning consultants from Hobbs & Black Architects, the college determined that neither of these spaces possessed the space requirements needed. The location, access, and layout of the 505 N. Capitol Building appear to be ideal for the college's instructional and student support needs.