

**Fiscal Year 2027
Capital Outlay Project Request**

Institution Name: Lansing Community College

Project Title: Energy and Utility Training Center

Project Focus: Academic

Type of Project: New Construction

Program Focus of Occupants: Training students to meet Michigan's industry demand for utility and energy system workers

Approximate Square Footage: 11,000

Total Estimated Cost: \$8,850,000

Estimated Start/Completion Dates: October 2027/December 2028

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 focused on a single, stand-alone facility? Yes

Project Purpose

Lansing Community College's (LCC) Technical Careers (TC) Division is requesting funding to create a new Energy and Utility Training Center for our electrical department in our pole yard area, as well as increasing the power supply to West Campus. The demand for training in the Utility and Energy Systems Department has surpassed the capacity of our current training facility and classroom/lab space. In the past five years, the number of students enrolled in the Lineworker Program has increased by 29.27% and the number of classrooms available in our current space is not able to accommodate the current demand by potential and current students for our high wage high demand technical career programs.

Using a design process that involves program faculty, LCC's Facilities Department, and an architectural design company, the newly constructed building will not only provide a significant infrastructure upgrade for our lineworker program but also will relieve some space constraints in the main building on the west campus. The new building will allow some of the electrical classes currently housed in the main building to be shifted to the new building, thus opening up space for future enrollment growth and innovation in commercial and residential energy industries. This new building will allow not only the expansion of our electrical program but also growth in underground wire splicing and alternative energy. The newly open space in the main west campus building will allow for growth in high-demand fields such as clean energy, power generation, electric vehicles, and avionics.

Due to current space and electrical constraints at the West Campus, LCC is unable to meet the expanding workforce demands for our Electrical Apprenticeship, Utility Linework, and Electrical Technology programs. This limitation will be exacerbated when we introduce new clean energy certificates such as Power Generation, Electrical Vehicle (EV), and Avionics, which are essential to align with Michigan's state goals and workforce needs. Moreover, if insufficient seating and sections prevent

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students from enrolling in required classes, we jeopardize our partnership with Consumer's Energy's school-to-work program, a shortfall that could mean not adequately preparing enough students to meet Consumer's Energy's workforce requirements.

Scope of Project

To enhance the training capabilities of the LCC TC Division, we propose establishing a dedicated Utility Energy Training Center. This center will feature four specialized labs for power generation, underground splicing, and both indoor and outdoor pole climbing arenas, providing hands-on experience crucial for our students. The facility will include four classrooms to accommodate academic instruction, as well as office spaces for faculty and staff to support educational and administrative functions. Meeting spaces will be available for collaborative discussions and professional gatherings. Essential amenities will include restrooms, a robust electricity and power supply, a carport for two digger derricks and four bucket trucks, and cold storage for equipment and supplies. Safety will be a top priority in the climbing area. This comprehensive setup will ensure that our students receive the highest quality training and practical experience in the utility energy field.

The Energy and Utility Training Center represents a significant advancement for the Utility and Energy Systems Department, which is poised to enhance its educational offerings across various pathways, including important new programs. Expanded lab facilities will cater to a growing student body each semester, bolstering education in power generation, automation, manufacturing, solar panel installation technology, electric vehicles, avionics, and pre-apprentice lineworkers. Located at LCC's West Campus, the new facility is designed to meet current program and ever-changing energy workforce demands.

Program Focus of Occupants

A dedicated electrical department facility and additional power supply will address the following high-priority student and college needs:

- **Expand Existing Programs:** Support the growth of energy-intensive programs like Electrical Technology and Utility Linework by providing additional power for equipment and tools.
- **Introduce New Programs:** Develop and launch new clean energy programs such as Renewable Energy, Power Generation, Electric Vehicle (EV) technology, and Avionics, which require substantial power resources.
- **Enhance Facilities:** Upgrade and expand laboratory and workshop spaces, ensuring they have adequate power to support advanced machinery and technology.
- **Improve Infrastructure:** Enhance campus infrastructure by powering new buildings or upgrading existing ones to be more energy-efficient and capable of supporting future growth.

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- **Sustainability Initiatives:** Implement sustainable practices such as installing electric vehicle charging stations, creating a smart grid for energy management, and supporting renewable energy projects like solar panels or wind turbines.
- **Increase Community Partnerships:** Collaborate with local industries and community partners to provide training and development programs that require substantial power, thereby fostering stronger community relations and workforce development.
- **Increase Innovation:** Establish a center focused on energy technology and innovation, providing students and faculty with the resources to conduct cutting-edge research.
- **Backup Power Supply:** Ensure reliable backup power for critical facilities and operations, minimizing disruptions during power outages and enhancing overall campus resilience.

What is a Lineworker's job responsibilities?	
Lineworkers are essential workers in the electrical utility industry responsible for installing, maintaining, and repairing electrical power systems.	
Examples of primary tasks and responsibilities are:	
✓ <i>Install and maintain electrical power systems, including power lines, poles, towers, and underground systems.</i>	✓ <i>Repair power outages caused by storms, accidents, or other issues. Lineworkers respond quickly to identify and repair faults in the power distribution system.</i>
✓ <i>Upgrading infrastructure</i>	✓ <i>Troubleshooting</i>
✓ <i>Ensuring Safety</i>	✓ <i>Emergency response</i>
Overall, utility lineworkers play a vital role in ensuring that homes, businesses, and communities have access to reliable electrical power. Their work requires technical expertise, physical stamina, and a commitment to safety and service.	

LCC is only one of four schools in Michigan that offers programs in pre-apprentice linework. Students complete core classes in worksite safety, energy industry fundamentals I & II, practical electricity concepts, electrical mathematics basics, and utility prints and diagrams. They are held to exceptionally high standards regarding their work ethic, attitude, and punctuality and work closely with staff to develop their soft skills. At LCC, fostering the character of a lineworker is just as important as developing their technical skills.

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In addition to the classroom instruction, line worker students at LCC receive hands-on training in Basic Electric Line Climbing to learn how to be a Ground/Utility Worker or an Energized Secondary Worker. Key practices in each work include freestyle and buck climbing techniques, understanding all fall restraint equipment, and tying basic knots. Students must also perform secondary “Hurtman Rescue” operations on injured workers.

Training includes the operation and maintenance of forestry equipment such as chain saws, pole saws, and hand saws, as well as the operation and setup of digger derricks. Students also learn to prepare transformers for installation and to use proper techniques to rescue an incapacitated worker from an aerial lift device. By the end of the program, they will be proficient in grounding and barricading techniques for aerial lifts and digger derricks and understand proper line construction principles, including correctly installing equipment and completing quality splices, terminations, and supports. Additionally, they can demonstrate industry-accepted safe work procedures while working on energized 120/240-volt secondary lines with rubber personal protective equipment.

Upon completion of the 13-month program, students earn their OSHA 30 Certificate, CPR/First Aid Training Certificate, Energy Industry Fundamentals Certificate, Aerial Bucket Operation Certificate, and Digger Derrick Operation Certificate. They also complete 300 lab hours climbing, performing groundworker duties, installing and labeling primary and secondary URD cables, and working energized lines. Lansing Community College’s pre-apprentice program is approved by the American Line Builders Apprenticeship Training Center (ALBAT).

The demand for line work apprentices and journey workers contributes significantly to the high level of interest in the college’s program. Prospective students recognize the substantial employment opportunities in the industry and understand that successfully completing the program is essential for securing employment. In recent years, the number of individuals seeking tours and pre-admission interviews has markedly increased.

Throughout 2024, we received several hundred inquiries about our linework program, resulting in 80 accepted applicants for the 2025 class. At full capacity, we can offer 98 seats for Practical Electricity (ELTE 110) in the fall semester, with fewer seats available in the spring. With the majority of the seats held for the lineworker program, there is limited seat availability for students in other programs to take this key required course. The end result of this capacity issue is the loss of students entering into any electrical profession and the loss of potential workers needed to meet regional workforce needs.

The high demand for classes and labs for lineworker students and apprentices does not account for the classroom and lab space needed for our electrical technology students. On average, 117 students are enrolled in our various pathways and degrees and use these electrical classes. Other programs also use electrical courses in the foundation of their programs. These programs are Welding, HVAC, Mechatronics, and Construction Management, some of which are going through expansion. Our electrical courses are stretched to the maximum resources, equipment, and staff to accommodate our growing program. For this reason, we are limited in how many classes are offered and have waiting lists

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for multiple electrical courses. We are also seeing a demand for summer classes to keep up with student needs.

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?

Michigan is making significant strides in clean energy investments and job creation with initiatives like the MI Healthy Climate Plan signed by Governor Gretchen Whitmer and newly enacted clean energy legislation. These efforts position the state as a frontrunner in clean energy, aiming to achieve 100% clean energy by 2040. The initiatives are projected to generate thousands of jobs and reduce costs for families and businesses. Clean energy employment in Michigan grew nearly twice as fast as the overall economy in 2022, a trend expected to continue with federal programs promoting clean energy and vehicle advancements. By 2040, Michigan could potentially create 41,000 new jobs through advancements in electric vehicle manufacturing and expansion of renewable energy sources such as solar and wind, according to the World Resource Institute.

The Michigan Economic Development Corporation states that clean energy is one of the fastest-growing industries in the U.S. Michigan is poised to become a major force, leading the nation for climate change and for energy-sector job growth, with over 167,000 new clean energy jobs projected nationwide over the next decade. LCC is helping to meet this demand by providing skilled pre-apprentice training, expanding the power generation program, and adding Avionics and Electrical Vehicle programs. These jobs require specialized knowledge and training that is just becoming available as the industry evolves rapidly.

According to Lightcast, a nationally recognized labor analytics firm, the employment of solar panel installers is specifically seeing an increase in job availability. While currently lower than the national average, the employment for power generation careers such as solar panel installers is projected to grow by 48% in the Michigan area in the next ten years. In the past 18 months, the hiring in this field exceeded the jobs that are posted. Companies such as DTE Energy, which is one of our industry partners, are looking for employees who can be solar technicians and solar installers.

In addition, Lightcast reports that the need for electric lineworkers and installers will see a steady upward trajectory in the next ten years. This field will see a projected increase of 10.7%, exceeding the national average by 4%. Michigan has a median starting wage of \$ 44.50/hr. Here at LCC, with growth predicted at 12% in the next ten years, the educational instruction pathway has already started to include and implement the skills listed as rapidly growing, as mentioned by Lightcast, as future industry needs. Instruction in working with capacitors, telecommunications, and especially pole climbing will ensure our students have the skills to be employable in these rapidly growing and changing careers.

The need for clean energy and utility jobs has continued to grow over the last 18 months. The average monthly hires for lineworkers, telecommunications installers, solar panel installers, and wind turbine

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service technicians have exceeded job postings by 50%. According to the Bureau of Labor Statistics, projections over the next ten years for power generation jobs alone will increase by over 60%

Continuing to support energy and utility programs and careers is crucial due to anticipated attrition from retirements. In the next ten years, 40-50% of the workforce in these fields is expected to retire, creating a significant employment gap that may greatly surpass current projections.

LCC's Utility and Energy Systems Department offers four associate degrees and nine certificate programs. With the addition of Electrical Vehicle and Avionics Programs and Underground Splicing Training, LCC would be able to help train students to send into the growing energy careers in Michigan. Until this project is approved and completed, we are limited in the number of students we can serve and, therefore, the number of students entering the workforce.

LCC Degree/Certificate	Potential Jobs/Careers
Electrical Technology, AAS	Industrial and Commercial Electricians Machine Controls Technicians and Engineers Electrical Machine Designers and Builders Industrial Shop Maintenance Robotics and Automation Technicians Solar Panel Installation Alternative Energy Installation Installation/Maintenance of Traditional Electrical Systems
Control Panel Wiring, CC	
Electrical Machine Controls, CC	
Electrical Tech, Construction, CA	
Electrical Technology, Control/Maintenance, CA	
Electrical Wiring, CC	
Energy Industry Fundamentals, CC	
Utility Lineworker, AAS	Line Apprenticeship, Substation Apprenticeship, Groundman Lineman, Cable Installation, Fiber Optic Splicing, Tree Trimming
Utility Lineworker, C.A.	
Customer Energy Specialist, AAS	Electrical Utilities Customer Service, Office Operations/Management, Project Planning, Community Outreach

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Customer Energy Specialist, CA	
Inside Wireman Apprenticeship, AAS	Commercial and Industrial Electricians
Electrical Apprenticeship, CA	

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

The Utility Lineworker Program does not yet possess the operational instructional amenities vital for effective training delivery. Constructing a robust, electrically equipped facility with an indoor pole yard, energized lines, and lab/classroom space is aligned with Lansing Community College's Strategic Plan 2025-2027 emphasizing:

Achieving Academic Excellence with Purpose and Equity - At the heart of our mission is the commitment to foster academic excellence and to ensure workplace readiness for our students. This dual focus is essential in preparing our students for both immediate success and long-term career sustainability.

Foster Student Enrollment, Retention and Completion - This commitment is operationalized through strategic initiatives focused on streamlining onboarding processes, ensuring a supportive and engaging educational journey that empowers every student, and strengthens student retention.

Strengthening Community Engagement and Partnerships - Through strategic alignment with workforce needs and the development of responsive, community-focused programming, we aim to contribute significantly to the educational and economic development of our region and diverse population we serve.

Establishing LCC as a Premier Workplace through Empowerment Engagement, and Inclusion - This goal seeks to cultivate a supportive and inclusive environment where every employee has the opportunity to thrive.

LCC is dedicated to supporting its students in successfully achieving their academic goals. Establishing a comprehensive facility with integrated electrical and plumbing systems will:

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- Provide a safe year-round instructional environment, offering consistent lab/classroom space and uninterrupted training at the pole yard, thus eliminating the need to return to the main building.
- Remove barriers and enhance support systems for students throughout their academic journey, from admission to graduation.
- Ensure ongoing quality enhancement of programs and courses.

By establishing a fully operational building in the pole yard, the energy and utility programs can showcase their offerings beyond traditional fieldwork, ensuring that LCC is positioned as a leading community college for energy and utility careers statewide.

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? N/A

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

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 newly developed ten-year Campus Master Plan was approved by the LCC Board of Trustees in the fall of 2024. This plan used a consultant to review educational benchmarks for classroom and office space, enrollment trends, studied our space and building utilization, and investigated space needs for key programming opportunities for future growth. The Energy and Utility Center was included in the plan. 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.

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In regards to the new Energy and Utility Center, working with programming and space planning consultants, the college will design a building that maximizes the student space to allow additional programming from the main West Campus building to move into this space. This reorganization will allow other areas that are ready to grow new technologies the space they need.

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

The College intends to apply LEED (Leadership in Energy and Environmental Design) sustainability 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.

If the project is funded, the college will identify, within 30 days, existing financial resources to provide the required 50% match.

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?

The college will provide the required 50% match for the project. It is the college's intention to keep the total project costs within the approved project budget, with the college and the state each providing 50% of the total project costs.

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.

The college estimates annual operating expenses to be \$30,000, with five-year costs of \$150,000 funded from the institution's General Fund.

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

Since it is the college's intention to provide the 50% match from existing financial resources, there should be no impact on the college's tuition rates. Also, as stated above, any additional operating expenses will be accommodated in the college's General Fund annual budget.

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

If the approval for a new Energy and Utility Training Center is not authorized, the institution and its students will face several significant impacts:

Limited Capacity: Due to physical space constraints, the number of classes and labs available will remain insufficient to meet the growing demand. This will result in longer waiting lists and fewer opportunities for students to enroll in necessary courses.

Resource Strain: Existing resources, equipment, and staff will continue to be stretched to their limits, potentially compromising the quality of education and training provided.

Reduced Enrollment: Potential students may seek training elsewhere due to limited availability, leading to a decrease in overall enrollment and a potential loss of revenue for the institution.

Delayed Graduations: Current students may experience delays in completing their programs due to the inability to enroll in required classes on time, impacting their career timelines and job prospects.

Unmet Industry Needs: The local energy and utility sectors will face a shortfall of skilled workers, as the institution will be unable to produce graduates at the necessary rate to fill the employment gaps created by retirements and industry growth.

Stagnant Program Development: The institution will struggle to expand and develop its programs to stay current with industry advancements, potentially leading to outdated training and less competitive graduates.

Increased Pressure on Other Programs: As electrical technology classes are also utilized by other expanding programs like Welding, HVAC, Mechatronics, and Construction Management, the strain on these programs will intensify, further limiting the institution's ability to meet the educational needs of its students.

Electrical Apprenticeship Program

The restricted availability of our lab/classrooms is placing a strain on our apprenticeship program, which will inevitably negatively impact our relationship with industry partners. Currently, we have at least one active apprentice with 54 Michigan companies and 209 total active apprentices. Over 75% of our active apprentices are required to take the Practical Electricity class and lab. If we continue to have to push the apprentice class options to later semesters, we will lose the relationships we have with companies like the Lansing Board of Water and Light (BWL), General Motors (GM), Bekum, Mahle Engine Components, Meridian Magnesium, and Tenneco.

Lineworker Program

Without electricity in our current outdoor training facility and approval for this project, we will be unable to meet the workforce demand for the State of Michigan, jeopardizing our school-to-work

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program with Consumers Energy and all industry partner relationships. Without electricity, our students cannot be exposed to live and energized 120/240-volt scenarios they will encounter in the initial stages of their apprenticeship.

As our program continues to grow, we will not be able to meet our physical space needs and, therefore, will be forced to cut the number of students accepted into the program by half. This reduction will also lead to a 50% decrease in revenue for the college from tuition and fees. Consequently, we face the risk of losing potential students to other community colleges offering school-to-work programs. To maintain our position as the preferred choice for pre-apprentice training, it is crucial that we provide facilities such as an indoor climb yard, substation, underground splicing training areas, and additional lab and classroom space.

With the approval of this project, LCC's Energy Center can provide the competitiveness and engaged learning that the Strategic Plan is committed to providing. A plan that will offer hands-on training and real-world experience to prepare our students for immediate employment successfully.

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

Solar panels, initially considered a temporary solution funded by Perkins, have now become an unavailable option.