

**Central Michigan University
Fiscal Year 2025 Capital Project Request
Recommended Five-Year Master Plan Components**

I. Mission Statement

Central Michigan University is defined by the success of our students and alumni, and by our collective impact with the communities we serve.

– Adopted by the CMU Board of Trustees, September 28, 2023

University Vision Statement

Central Michigan University will be nationally known for preparing innovators, learners, and leaders who positively impact their local and global communities.

– Adopted by the CMU Board of Trustees, September 28, 2023

Core Values

To achieve our mission, we adhere to the core values of integrity, respect, compassion, inclusiveness, equity, social responsibility, excellence, and innovation.

– Adopted by the CMU Board of Trustees, September 28, 2023

II. Instructional Programming

A. Existing Academic Programs and Projected Changes:

Central Michigan University (CMU) has grown from a teachers' college founded in 1892 to an R2 – Doctoral Universities: High Research Activity institution. CMU offers nearly 300 academic programs at the undergraduate, masters, specialist, and doctoral levels. Its nationally acclaimed degrees include programs ranging from the health professions and biosciences to business and communications.

The proposed capital project would further the university's commitment to the pursuit of knowledge, wisdom, discovery and creativity. The renovation of Brooks Hall would assist students in fostering personal and intellectual growth through their studies in the sciences. The project would benefit all students in the College of Science and Engineering, as well as students in every major across the university as they fulfill their general education program. Specific programs that would benefit from the renovation include:

- Astronomy
- Biology
- Environmental Engineering
- Environmental Sciences
- Geology
- Meteorology
- Neuroscience

Nearly 20 percent of incoming students admitted to CMU as part of the fall 2022 first-year class indicated an interest in science. Nearly all CMU undergraduate students utilize Brooks Hall throughout their educational journey.

CMU's current degree listing is:

Bachelor of Arts
Bachelor of Applied Arts
Bachelor of Science in Electrical Engineering
Bachelor of Science in Engineering Technology
Bachelor of Science in Environmental Engineering
Bachelor of Fine Arts
Bachelor of Individualized Studies
Bachelor of Science in Mechanical Engineering
Bachelor of Music
Bachelor of Music Education
Bachelor of Science
Bachelor of Science in Athletic Training
Bachelor of Science in Business Administration
Bachelor of Science in Computer Engineering
Bachelor of Science in Education
Bachelor of Science in Nursing
Bachelor of Social Work
Master of Arts
Master of Business Administration
Master of Entrepreneurial Ventures
Master of Health Administration
Master of Music
Master of Public Administration
Master of Public Health
Master of Science
Master of Science in Administration
Master of Science in Athletic Training
Specialist in Education
Specialist in Psychological Services
Doctor of Audiology
Doctor of Education
Doctor of Educational Technology
Doctor of Health Administration
Doctor of Medicine
Doctor of Philosophy
Doctor of Physical Therapy

The university's academic planning process involves an analysis of the needs of students and the demands of public- and private-sector employment markets. Thus, the potential for new and/or revised academic programs reflects a continuous feedback cycle in the university's planning system.

B. Institutional Characteristics:

CMU was founded in 1892 to address Michigan's shortage of teachers and business leaders. In the 131 years since, we have continued to meet Michigan's workforce needs with outstanding academic programs that emphasize hands-on learning, professional skill development and career readiness. Over the past several years, we have invested in programs that directly address Michigan's current needs, especially those in high-demand fields. This includes health professions programs, such as physician assistant and nursing; teacher education, including special education and school counseling; computer science and business information systems; entrepreneurship; environmental, mechanical, and electrical engineering; accounting; and more.

CMU offers nearly 300 academic degree and certificate programs on-campus, online and in eight satellite locations, and serves over 14,000 students throughout the year (annual unduplicated headcount). CMU enrolls students from nearly every county in Michigan, and nearly 90% of on-campus undergraduate students hail from Michigan. Our students reflect the great diversity of the state and the global community; in 2023, CMU welcomed students from 70 countries to campus.

Our academic programs focus on hands-on learning, knowledge and skill-building that addresses some of the world's most pressing challenges and Michigan's greatest needs. For example, The CMU College of Medicine was established to address a shortage of physicians in rural and medically underserved communities. Programs in the medical school include primary care and pediatric specialties – among the highest demand in Michigan - and more than half of CMU College of Medicine graduates remain in Michigan. CMU graduated its 600th physician in May 2023.

Students who graduate from CMU are prepared to lead in their chosen profession and within their communities. Data from CMU's most recent First Destination survey shows that nearly 94% of CMU graduates are employed or pursuing additional education. Employers say they actively recruit CMU graduates for open positions because CMU Chippewas are knowledgeable, skilled and Fired Up to make a difference. These employers post more than 100,000 jobs and internships a year through the university's Career Development Center.

Career readiness is a core component of CMU's strategic plan, and national organizations recognize the value of our approach to hands-on learning:

- CMU is one of the nation's only Celonis Academic Centers of Excellence in recognition of excellence in process mining.
- CMU has been recognized as a National Center of Academic Excellence in Cybersecurity by the National Security Agency.
- For the fifth consecutive year, CMU received the Gold Pinnacle award for Best Event Management program from the International Festival and Events Association.
- CMU is home to the longest-standing audiology program in the country and Michigan's first entrepreneurship and leadership minors.

CMU graduates are not only leaders in the workplace, but they are also engaged citizens active in their communities – a behavior that begins at CMU. CMU offers students opportunities to engage in more than 400 registered student organizations including student chapters of professional organizations, club sports, Greek Life and more. Many of these organizations promote civic engagement, including participating in social and political causes, and volunteer service.

For the third year in a row, CMU has been designated a Voter-Friendly Campus by the Fair Election Center’s Campus Vote Project. In addition, CMU was recognized again in 2022 as one of the nation’s most engaged campuses for college student voting by the All-In Campus Democracy Challenge. And, in late 2022, CMU was honored by MTV with two grants from its MTV Early Voting is Easier Campus Challenge, awarded in recognition of efforts to facilitate and increase student voting.

Students at CMU are passionate about making a positive difference in the communities they call home, and for people around the world. CMU’s Alternative Breaks program was rated No.1 in the nation by the 2022 BreakAway report, and in 2023 was again the No.1 among Michigan’s public universities. CMU achieved the first-place ranking for the number of participants and number of volunteer opportunities provided for student volunteers. Closer to home, CMU student volunteers contribute thousands of hours in service to local nonprofit and service organizations.

CMU is proud to serve military service members and veterans. More than 150 U.S. flag officers hold CMU degrees, and the university has been named a Gold-Level Veteran-Friendly School with the Michigan Veterans Affairs Agency for three consecutive years. In its 2022 Best for Vets survey of 311 schools, the independent magazine Military Times ranked CMU 3rd best in Michigan based on costs, programs, policies, and services that impact military-connected students. CMU offers reduced military tuition rates and in-person learning opportunities on one military base and worldwide via CMU Innovation and Online.

CMU’s exceptional students are supported by faculty who are leaders in their field and who regularly contribute to the creation and dissemination of new knowledge. CMU’s class sizes remain small, giving students the ability to interact directly with their professors. Ninety-five percent of CMU classes are taught by professional faculty rather than teaching assistants or graduate students.

CMU is an R2- Doctoral University, the Carnegie classification for High Research Activity institutions. In 2016, the Higher Learning Commission reaffirmed CMU’s accreditation through 2025, giving the university the highest marks possible in every evaluation area. In the past two years, CMU’s research and scholarly output has risen significantly, positioning CMU as the leader in among its Michigan peers in the Mid-American Conference. In addition, the university has seen substantial increases in research grants and funding, surpassing \$25 million per year for two consecutive years.

CMU's College of Science and Engineering is preparing students to lead in today's high-demand STEM fields and equipping them for a lifetime of career growth in new and emerging industries. For example, CMU recently launched an environmental engineering bachelor's degree program. The program is already producing graduates with in-demand skills, especially in water quality, waste management, and sustainability. On a national level, employment of environmental engineers is projected to grow 4 percent from 2021 to 2031. The growth rate in Michigan is currently outpacing the national average by about 50%. In addition, this program is expected to significantly increase the participation of women in engineering, a point of emphasis for the College of Science and Engineering.

In addition, CMU's College of Science and Engineering has added new majors in cybersecurity and data science. Demand for both programs is predicted to increase at least 30% during the next decade. And, among CMU chemistry, biochemistry, physics and astronomy graduates, 100 percent are engaged in research projects. Also, 100 percent of engineering and engineering technology graduates completed senior design projects — important experiential learning that equips them for the next phases of their educational and career journeys.

CMU leads the way in research to sustain and manage the world's largest supply of fresh water, with \$30 million from the U.S. Environmental Protection Agency to monitor and assess Great Lakes coastal wetlands. CMU's Institute for Great Lakes Research is led by biology professor Don Uzarski. Each year, hundreds of CMU students participate in hands-on research activities in IGLR labs and at CMU's Beaver Island Biological Station.

The College of Science and Engineering faculty has secured \$7.15M in external funding in FY22 to support their research activities over a total of 49 independent projects. Notable new external grants awarded in the last year include \$600,000 from the U.S. Department of Energy (DOE) for research in the area of nuclear astrophysics and \$355,183 for work related to novel quantum materials; \$355,000 from the Saginaw Chippewa Indian Tribe, Bureau of Indian Affairs, and U.S. Department of Interior for holistic evaluation of Chippewa River; and \$344,393 from the National Science Foundation for Nuclear Magnetic Resonance instrument. Faculty from the Department of Biology, Engineering, and the College of Medicine obtained \$1.7 million from the Michigan Department of Health and Human Services to study CoVID-19 in wastewater.

The College of Science and Engineering is home to one of thirteen Computational Chemical Sciences Centers in the U.S. funded by the Department of Energy Office of Science. The CMU center is leading a five-university partnership that received grants of \$4.8 million in 2017 and \$5 million in 2021 to develop a new computational approach to modeling the properties of molecules and solids. Students working on the project combine physics with ideas from computer science, chemistry, and materials science to spur progress in applications such as artificial photosynthesis and quantum computing.

Students in the College of Science and Engineering regularly compete for, and achieve, top national awards. Last year, student Macy Knoblock earned the prestigious Goldwater Scholarship, which supports students pursuing research careers in natural sciences, math, and engineering. The scholarship was created by the U.S. Congress in 1986 and is only given to 410 students each year. Eric Urbaniak, Department of Biology undergraduate student, received the highly competitive national Udall Scholar award. The award recognizes students who exemplify leadership, dedication to public service, and commitment to issues related to Native American nations and/or the environment. The scholarship is awarded to only 55 students each year. And Central Sustainability, a student-led organization to implement more sustainable practices across campus, has received multiple national recognitions from organizations, including the U.S. EPA and the Race to Zero Waste, for its campus-wide efforts.

C. Other Initiatives and Their Impact on Facilities Usage:

CMU has a history of investing in facilities with the goal of enhancing the student experience, maintaining building infrastructure, and elevating the human condition. CMU completed the following projects over the past five years. These projects increased safety, prolonged the useful life of the infrastructure, better utilized university resources, and/or enhanced instructional, research and student collaboration space across campus.

CMU completed two major capital building construction projects, including the Center for Integrated Health and Safety and the Bioscience facility. CMU's Biosciences Building added essential wet lab research and classroom space in the biosciences area. The four-story, 169,000 square foot building includes active-learning classrooms, a vivarium to replicate aquatic conditions for research, a molecular biology core, an isotope laboratory, an imaging center for scanning and transmission electron microscopes, an herbarium and a staging and processing storage area for ecological fieldwork. The project was completed in September 2016 and classes started in January 2017. CMU's \$26 million, 50,000-square-foot Center for Integrated Health Studies empowers students from multiple high-demand fields of study to learn and practice together, a best practice in health care education. The building opened for classes and research activity in January 2020.

To enhance safety and security, CMU has invested in interior and exterior access control initiatives. All classroom doors have a locking mechanism to secure the room from the inside. The University is in the process of adding access control systems to all academic building exterior doors to ensure the buildings can be placed in "secure mode" when necessary. The University replaced the fire alarm systems in Park Library and the Music Building. The University also constructed a parking lot to allow students to park closer to their living and learning buildings and has enhanced exterior lighting to ensure a safe and walkable campus.

Central Michigan is focused on enhancing sustainability and ensuring that University resources are being allocated appropriately. CMU demolished the Barnes Residents Hall and the Kewadin Village Apartments to reduce footprint and deferred maintenance

burden to the university. The University commits deferred maintenance resources annually to ensure facility safety, security, and effective operations. In the past five years, some of the projects that were funded and completed were:

- Replacement of the roof at Park Library and Anspach.
- Masonry repairs at Finch, Moore, and Music facilities.
- HVAC repairs at Park Library, Rowe Hall, and the Bovee University Center.
- Powerhouse investments, such as burner control upgrades.
- Cooling system repairs at Foust and Health Professions.
- Lighting control replacement at Park Library.

In addition, CMU has continued to invest in repairs and upgrades to the central utility plant to provide the necessary continuous delivery for sustainable utilities to campus. This included heating systems, electrical systems, and DDC control upgrades to support a more sustainable HVAC control system in numerous facilities.

Lastly, CMU has also invested in facilities to enhance the academic programs and the student's academic experience. Moore Hall's Bush Theater received a complete theater lighting and sound system replacement and upgrade. The Culinary Nutrition Center enhanced the learning environment for the Nutrition and Dietetics program. The center transformed the outdated food laboratory into a state-of-the-art nutrition science technology classroom. This enhances the education experience for students, faculty, and community partners via both student-led and faculty outreach programs. Over the past two years, CMU completed renovations to Pearce Hall with four data laboratories and two classrooms, created the Adobe Digital Lounge in Park Library, and created group study spaces in Park Library, Pearce Hall, and Grawn Hall.

D. Economic Development Impact: CMU and its programs directly impact economic development in Michigan.

CMU's College of Science and Engineering and its academic programs positively impact the state economy through faculty research, the work of its Institute for Great Lakes Research, and the career outcomes of its graduates. Faculty-led, student-involved research and service projects have included partnering with local service providers to expand solar energy, working to identify new sources of lithium for electric car battery production, and preserving natural resources in the Great Lakes region that promote tourism, hospitality, and other related industries.

The University's business programs (e.g., entrepreneurship) are one example of those that have a direct impact on economic development. While at CMU, students can take part in a New Venture Challenge where they develop an entrepreneurial mindset, learn business start-up techniques, and develop business ideas. Workshops assist students along the way and as they prepare proposals to be judged on innovation and viability. The New Venture Challenge typically awards between \$75,000 and \$100,000 to outstanding students so they can move their ideas forward to fruition. Over 50 student-led ventures launched into new businesses over the past nine years.

CMU is a leader in assisting entrepreneurs in bringing their ideas to fruition. The Michigan Economic Development Corporation (MEDC) has designated a Michigan SmartZone near our campus, where the City of Mount Pleasant and CMU have developed a 300-acre technology park that includes an incubator and business accelerator called the CMU Research Corporation (CMURC). It houses 17,000 square feet of wet laboratories and 13,000 square feet of offices, and it leverages CMU’s diverse capabilities to assist start-up businesses.

Among the state’s MEDC-funded business incubators, CMURC ranks first in terms of jobs created and companies formed. In the past four years, CMURC opened centers in Bay City, Midland, and Saginaw, to assist with business start-ups throughout the Great Lakes Bay region. The Saginaw location also houses CMU’s Innovation and Online learning hub.

CMURC offers hands-on expertise and CoWork opportunities. Its services include a competitive, three-phased scholarship program for early-stage entrepreneurs; industry, market, and feasibility analyses; product, manufacturing, and supply chain development; business strategy and implementation; marketing services; and investor relations and partnerships. Nearly 90 companies are active between feasibility and launch in addition to over 320 CoWork members.

CMURC also works to protect and commercialize inventions created by CMU researchers. Its scope of activities includes guiding faculty through the invention process, processing invention disclosures, assessing technologies for protection and commercialization, filing patent, copyright, and trademark protection on select technologies, marketing and licensing CMU discoveries, execution of Material Transfer and Confidentiality Agreements, and fostering CMU entrepreneurs. CMURC helps by offering supportive programs, helping with product development, conducting a market assessment, and business consulting for commercialization.

III. Staffing and Enrollment

A. Full- and Part-Time Student Enrollment (Fall 2022):

Classification of Instructional Program (CIP)	Mount Pleasant Campus		Off Campus (MI)	
	Full time	Part time	Full time	Part time
Agriculture, Agriculture Operations & Related Sciences	0	0	0	0
Area, Ethnic & Cultural & Gender Studies	1	1	0	0
Biological & Biomedical Sciences	438	90	2	4
Business Management, Marketing & Related Support Services	1484	142	274	1001
Communication, Journalism & Related Programs	384	47	6	7

Computer & Information Sciences & Support Services	780	58	11	64
Education	1055	73	70	510
Engineering	240	37	0	0
Engineering Technologies/Technicians	134	21	0	24
English Language & Literature/Letters	57	13	1	0
Family & Consumer Sciences/Human Sciences	97	23	24	132
Foreign Languages, Literatures & Linguistics	40	2	0	0
History	50	16	0	0
Legal Professions & Studies	16	4	0	1
Liberal Arts & Sciences, General Studies & Humanities	0	0	0	0
Mathematics & Statistics	65	24	0	1
Multi/Interdisciplinary Studies	13	3	0	0
Natural Resources & Conservation	88	25	1	3
Health Professions & Related Programs	1212	56	52	295
Parks, Recreation, Leisure & Fitness Studies	501	48	4	17
Philosophy & Religious Studies	10	1	0	0
Physical Sciences	87	41	0	0
Psychology	373	50	113	139
Public Administration & Social Service Professions	180	25	62	189
Security and Protective Services	0	0	2	12
Social Sciences	166	24	29	36
Visual & Performing Arts	427	40	14	34
Undecided / Unsigned	2312	129	33	95
Total	10,307	996	698	2,567

B. Future Enrollment:

In spite of projected decreases in the total number of Michigan high school graduates, CMU's overall enrollment is expected to grow gradually over the next five years, including increased enrollment in the sciences at both the graduate and undergraduate levels:

<u>Year</u>	<u>Fall Enrollment</u>
2023	14,411
2024	14,558
2025	14,760
2026	15,001
2027	15,266

CMU has completed a thorough enrollment management planning process and is implementing several strategies to recruit and retain students. In spite of increased competition from other Michigan universities, including those that lowered academic requirements for entering students, CMU has increased enrollment of new students at the undergraduate and graduate level for the past two years.

CMU is committed to enrolling students who have demonstrated an ability to be successful in college. CMU’s mean SAT is 1,090 which is the 56th percentile of SAT scores. CMU’s mean high school GPA is 3.52.

Further, CMU has implemented several measures during the past five years to support students and increase CMU’s four-year graduation rate. These efforts include an Office of Student Success, additional academic advisors, additional counselors, and an online advising tool that allows faculty and students to see how well they are progressing toward graduation.

CMU’s latest six-year graduation rate, for the fall 2016 cohort, was 62 percent. Based on the current R2 Carnegie classification, CMU outperformed the national peer average of 54.5 percent.

C. Enrollment History: (Michigan Students Only)

CMU’s total enrollment has slowly declined over the past decade, following state and national trends resulting from the 2008 recession and generational change in family size. As the data below show for Michigan-based enrollment, the range between CMU’s highest and lowest enrollments is 9,345 students - about 38 percent. Almost 90 percent of CMU’s on campus undergraduate students today are from the state of Michigan.

Fiscal Year	FYES	Fall Headcount		
		Mount Pleasant	Off Campus-MI	Unduplicated Total
2012-13	21,694	20,504	6,196	24,744
2013-14	20,891	19,634	6,618	23,875
2014-15	21,278	19,858	6,831	24,184
2015-16	20,804	19,549	6,798	23,565
2016-17	20,203	19,068	6,839	22,843
2017-18	19,546	18,155	7,398	21,912
2018-19	18,706	16,769	7,470	20,456
2019-20	17,104	14,990	7,887	19,192
2020-21	15,583	13,294	7,420	17,224
2021-22	13,953	11,801	7,274	15,399

D. Staff/Student Ratios (Fall 2022):

Classification of Instructional Program (CIP)	Student/Instr. Staff Ratio	Student/Admin. Staff Ratio
Area, Ethic & Cultural & Gender Studies	20.9	N/A
Biological & Biomedical Sciences	8.7	39.5
Business Management, Marketing & Related Support Services	21.5	187.0
Communication, Journalism & Related Programs	14.1	122.7
Computer & Information Sciences & Support Services	11.5	174.0
Education	19.9	129.1
Engineering	6.9	50.0
Engineering Technologies & Engineering-Related Fields	11.5	83.7
English Language & Literature/Letters	13.7	98.2
Family & Consumer Sciences/Human Sciences	19.8	37.6
Foreign Languages, Literatures, & Linguistics	13.9	154.5
Health Professions & Related Programs	12.4	59.0
History	12.3	168.1
Legal Professions & Studies	16.2	N/A
Liberal Arts & Sciences, General Studies & Humanities	9.9	13.0
Mathematics & Statistics	15.4	145.3
Medicine (MD)	13.3	130.8
Multi/Interdisciplinary Studies	14.8	25.1
Natural Resources & Conservation	11.7	N/A
Parks, Recreation, Leisure & Fitness Studies	12.1	140.5
Philosophy & Religious Studies	26.5	1193.4
Physical Sciences	10.8	38.9
Psychology	16.9	125.3
Public Administration & Social Service Professions	17.5	N/A
Public Health	13.5	N/A
Reserve Officer Training Corps	N/A	11.6
Social Sciences	17.8	128.9
Visual & Performing Arts	9.5	45.1
Total	14.7	90.9

E. Future Staffing Needs:

<u>Year</u>	<u>Fall Enrollment Change</u>	<u>Additional Staffing</u>
2023	-152	0
2024	147	0
2025	202	0
2026	241	0
2027	265	0

This chart reflects staffing needs with current academic programs and projected enrollments based on Michigan high school graduating class sizes only. As noted earlier, the entire CMU campus is engaged in recruitment and retention efforts that are showing success. That said, the millennial generation was large and brought a high volume of students into higher education. As each generation transitions into higher education, they have unique needs that differ from the previous generation. CMU invests significant funding into support services through our counseling center, writing center, math center, career services, advising, and student success centers.

Average Class Size:

At CMU, class sizes remain small, giving students optimal opportunity to interact directly with their professors. Ninety-five percent of CMU classes are taught by professional faculty rather than teaching assistants or graduate students. Students at CMU are more than a number; they are known by name.

According to the 2023 National Survey of Student Engagement (NSSE), 64 percent of CMU seniors say they have worked with faculty members on activities other than coursework. This would include research, creative endeavors, career-related experiences, and volunteer efforts. CMU's survey results exceed 58 percent of seniors at universities within our Carnegie class and 57 percent of all NSSE 2022 and 2023 respondents.

In many cases, even undergraduate students can do research in concert with their instructors. At larger universities, this hands-on experience often is reserved for graduate-level students.

Course Level	2022-2023 Average Class Size		
	On Campus Avg. # of Students	Off Campus-MI Avg. # of Students	Overall Avg. # of Students
<100	4	0	4
100-299	24	28	25
300-499	19	26	21
500-599	16	14	15
600 +	22	15	18

IV. Facility Assessment

A comprehensive Campus Master Plan, which addresses facilities condition, space utilization, utility infrastructure, land use, and capital planning, was approved by the Board of Trustees in December 2021. The comprehensive plan for the physical campus reflects and upholds the vision, imperatives and strategies established for CMU in its strategic plan. Included in the 2013 Master Plan was a Capital Plan which outlined 24 projects; by 2021, CMU had successfully completed 14 of the projects. A new 2021 Capital Plan was finalized, which includes Brooks Hall as a priority academic facility improvement project.

A. Building and/or Classroom Utilization Rates:

Brooks Hall contains 18 labs and 4 classroom spaces. Brooks Hall is heavily utilized in courses required for science majors. Among the four buildings with lab spaces used by the College of Science and Engineering, Brooks Hall accounts for the largest proportion of SCH (39%) and course enrollments (37%) in lab courses. The building is heavily utilized from 8 a.m. through 9 p.m. Monday through Friday. Note that lab spaces often require down time between courses, as cleanup and resetting of instruments may be necessary. Labs in Brooks are used regularly and are frequently at or near capacity.

Brooks Hall Room Utilization

	Monday		Tuesday		Wednesday		Thursday		Friday	
	Rooms in Use	% in Use								
8:00 AM	0	0.0%	2	9.5%	0	0.0%	1	4.8%	1	4.8%
9:00 AM	5	23.8%	9	42.9%	10	47.6%	9	42.9%	3	14.3%
10:00 AM	7	33.3%	13	61.9%	13	61.9%	12	57.1%	4	19.0%
11:00 AM	6	28.6%	12	57.1%	13	61.9%	11	52.4%	5	23.8%
12:00 PM	6	28.6%	13	61.9%	12	57.1%	10	47.6%	1	4.8%
1:00 PM	8	38.1%	14	66.7%	15	71.4%	11	52.4%	2	9.5%
2:00 PM	7	33.3%	14	66.7%	14	66.7%	11	52.4%	1	4.8%
3:00 PM	6	28.6%	13	61.9%	12	57.1%	11	52.4%	0	0.0%
4:00 PM	4	19.0%	7	33.3%	8	38.1%	5	23.8%	0	0.0%
5:00 PM	3	14.3%	5	23.8%	7	33.3%	3	14.3%	0	0.0%
6:00 PM	1	4.8%	4	19.0%	4	19.0%	2	9.5%	0	0.0%
7:00 PM	0	0.0%	4	19.0%	4	19.0%	1	4.8%	0	0.0%
8:00 PM	1	4.8%	4	19.0%	3	14.3%	1	4.8%	0	0.0%
9:00 PM	1	4.8%	1	4.8%	1	4.8%	1	4.8%	0	0.0%
Average Daily Use	28.0%		51.8%		53.4%		45.5%		16.0%	
Average Use 9 to 5	30.2%		58.8%		59.5%		49.6%		16.7%	

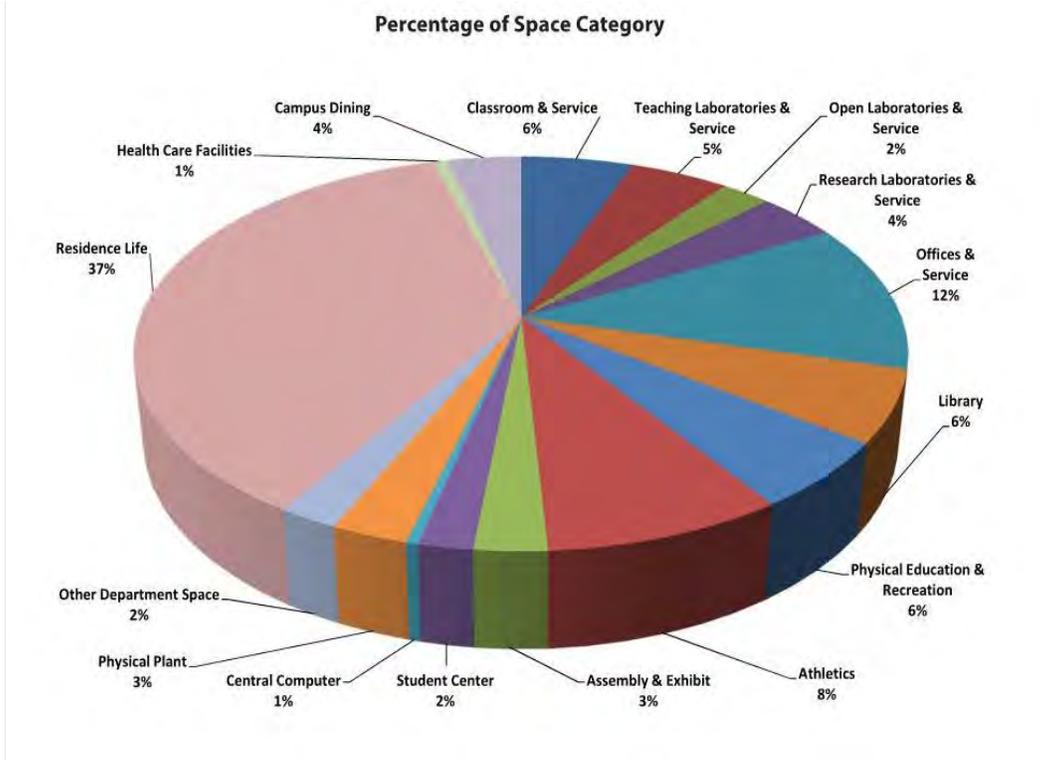
Classroom Utilization

Time of Day	Monday		Tuesday		Wednesday		Thursday		Friday		Average M-Th	
	Rooms in Use	% in Use										
8:00 AM	17	10.9%	43	27.6%	14	9.0%	39	25.0%	7	4.5%	28	18.1%
9:00 AM	81	51.9%	129	82.7%	79	50.6%	124	79.5%	47	30.1%	103	66.2%
10:00 AM	96	61.5%	126	80.8%	95	60.9%	125	80.1%	60	38.5%	111	70.8%
11:00 AM	102	65.4%	132	84.6%	98	62.8%	126	80.8%	71	45.5%	115	73.4%
12:00 PM	90	57.7%	139	89.1%	87	55.8%	136	87.2%	57	36.5%	113	72.4%
1:00 PM	67	42.9%	127	81.4%	69	44.2%	126	80.8%	44	28.2%	97	62.3%
2:00 PM	125	80.1%	127	81.4%	127	81.4%	124	79.5%	10	6.4%	126	80.6%
3:00 PM	127	81.4%	133	85.3%	125	80.1%	129	82.7%	2	1.3%	129	82.4%
4:00 PM	116	74.4%	109	69.9%	109	69.9%	98	62.8%	3	1.9%	108	69.2%
5:00 PM	74	47.4%	70	44.9%	75	48.1%	58	37.2%	1	0.6%	69	44.4%
6:00 PM	75	48.1%	75	48.1%	75	48.1%	56	35.9%	6	3.8%	70	45.0%
7:00 PM	43	27.6%	44	28.2%	46	29.5%	16	10.3%	6	3.8%	37	23.9%
8:00 PM	36	23.1%	34	21.8%	38	24.4%	9	5.8%	6	3.8%	29	18.8%
9:00 PM	9	5.8%	8	5.1%	8	5.1%	3	1.9%	4	2.6%	7	4.5%

Based on 156 on campus classrooms with at least one course scheduled - Data from Fall 2018 Utilization Analysis

- B. Mandated Facility Standards: CMU meets general and minimum space requirements as noted in federal accreditation standards. This includes successfully meeting higher levels of space and equipment standards for specialized programs such as biology and chemistry laboratories, performance spaces, library collections, and art exhibit spaces. Programs also meet the stringent, mandated facility standards of the National Association of Industrial Technology.
- C. Functionality and Space Allocation:

Found in the Campus Master Plan, the following chart depicts the percentage of space on campus by category:



<i>Average age of buildings:</i>	General Fund	44.2 years
	Auxiliary	45.0 years
	All buildings	<u>44.6 years</u>

D. Replacement Value of Existing Facilities:

General Fund	\$1,542,839,235
Auxiliary	672,045,247
Total	<u>\$2,214,884,482</u>

E. Utility System Condition:

The campus master plan includes a facilities infrastructure assessment of the HVAC, electrical and domestic hot water systems in all of the buildings on CMU’s main campus.

The majority of CMU buildings have served the campus for more than 40 years. The buildings have been well maintained, are structurally sound and functioning well. In some cases, mechanical and electrical systems are functioning successfully beyond their projected useful lives. The Facilities Condition Index for the campus is 0.166.

The deferred maintenance needs identified as part of the Facilities Condition Assessment for general fund buildings total \$192.9 million and for auxiliary buildings, \$175.6 million, in repair, upgrade and replacement costs for building assets valued at \$2.2 billion.

CMU has campus utility distribution system assets totaling approximately \$134 million.

1. City Water: CMU works closely with the city of Mount Pleasant to coordinate the expansion of water system requirements on campus and to maintain documentation of the existing system.
2. Sanitary Sewage System: The 12.7 miles of sanitary sewer collection system, which is integrated with the city of Mount Pleasant system, is sufficient for the existing and future needs of CMU in Mount Pleasant.
3. Storm Sewer System: The 22.6 miles of storm sewer on CMU's campus are in generally good condition. CMU works closely with the city of Mount Pleasant and Isabella County to coordinate the expansion of storm sewer systems on campus and to ensure proper inspection and maintenance of the infrastructure.
4. Electrical Distribution System: Scheduled assessments during planned electrical outages allow our skilled trades to identify immediate and long-term repair requirements; this also allows for planned system repairs with minimal impact on campus operations. The campus electric distribution system is in good condition. The main campus has redundant primary feeds from Consumers Energy.
5. Steam and Condensate System: The campus has 7.8 miles of steam and condensate lines located both within our 3.5 miles of utility tunnels and directly buried. These lines are in good condition.
6. Chilled Water System: The 10.4 miles of chilled water lines, supply, and return are in good condition.
7. Central and Satellite Energy Facilities: These facilities house 1 gas/wood boiler, 3 gas boilers, 1 steam turbine, 1 gas turbine, 6 electric chillers and 1 steam absorption chiller and are in good condition. The Central Energy Facility has a Facilities Condition Index of 0.03 and the Satellite Energy Facility, which was built in 2006, has a Facilities Condition Index of 0.01.

F. Facility Infrastructure Condition:

1. Roads: Roads are generally adequate. Repairs are made on a planned basis, with annual inspections by CMU personnel. Several campus roads, particularly West Campus Drive, serve significant city and county/state traffic.
2. Parking lots: Central Michigan University has 102 acres of parking lots with 11,032 spaces. Parking lots were inspected, and condition rated in 2022; all parking lots are on a specific schedule for crack filling, repair, and reconstruction.
3. Parking structures: None

4. Sidewalks: Central Michigan University has 33.2 miles of sidewalks, and work occurs every year to replace and repair designated portions.
5. Bridges: None
6. IT Infrastructure: There are two infrastructure components:
 - a. CMU has a stand-alone, secured data center with backup generators and uninterruptable power systems.
 - b. The university network continues to be enhanced to support current technological demands. The university voice telephone system has been converted to Voice and Video over Internet Protocol (VOIP). Voice, video, cable TV, and data are systems that use the university network to operate. The university network has the capacity for worldwide interconnections.

G. Adequacy of existing utilities and infrastructure systems to current and 5-year projected programmatic needs:

As part of our campus master plan, the overall facilities condition assessment, utility infrastructure assessment, land use and capital planning work products have identified the following utility and infrastructure upgrades that are required to support current and 5-year project programmatic needs.

1. Central Energy Facility Improvements: CMU has completed three major system improvements at the central plant totaling \$4M. These projects included projects to upgrade controls for four boilers and the gas turbine, the installation of a new absorption chiller plus heavy maintenance of the gas turbine.
2. Storm System Upgrades: The Federal Emergency Management Agency, through the Michigan State Police, Homeland Security Division, has awarded CMU a nationally competitive Pre-Disaster Mitigation grant for a project valued at \$497K. A storm water pump station was installed at the Student Activities Center, and additional storm water storage projects were completed as part of the Center for Integrated Health Studies.
3. Although the campus network is currently running well and is reliable, IT strategic planning has determined a need for approximately \$14 million in deferred maintenance investment across the CMU network by FY24.

H. Enterprise-wide energy plan:

Central Michigan University continues executing a formal energy reduction effort since 2009, to include an ongoing Direct Digital Controls upgrade program. The overall effort has resulted in numerous energy reductions projects focused on individual buildings, optimizing like systems that were operational in multiple buildings, and improving its central utilities infrastructure.

I. Land Owned by the University:

Improved (landscaped)	579.58 acres
Unimproved	1,171.68 acres
Total	<u>1,751.26 acres</u>

There is sufficient land to support the university's needs for the foreseeable future. CMU's long-term land use plan allows CMU to make short-term building decisions with the confidence that we are doing what is right for the future of CMU.

- J. State Building Authority: CMU has five buildings obligated to the State Building Authority. The buildings include Park Library, the Health Professions building, Education and Human Services Building, the Biosciences Building, and the Center for Integrated Health Studies. The expiration dates of the State Building Authority leases are shown in the table below:

Building	Proposed Lease Expiration Date
Park Library	04/01/2037
Health Professions	11/01/2040
Education and Human Services	12/01/2044
Biosciences	08/31/2052
Center for Integrated Health Studies	11/07/2054

V. **Implementation Plan**

A. Prioritized Major Capital Projects Requested:

As part of the campus master plan, a 10-year capital plan project list was approved by the CMU Board of Trustees in July 2013; an updated list was approved in June 2017 and the current list was approved in December 2021. These lists were developed by a cross-campus team of faculty and staff based on input from thousands of on-campus and community stakeholders. The Brooks Hall renovation continues to be CMU's top priority academic facility project and will remain so until it is completed. Student demand for programs housed in Brooks Hall is high, and renovated facilities will better serve students going into the sciences and all taking general education science classes. We look forward to partnering with the state soon on this project.

Brooks Hall opened in 1964 and serves students with courses and programs in biology, biomedical science, earth and atmospheric sciences, astronomy, chemistry, biochemistry, and geology.

B. Impact of Addressing Deferred Maintenance and Structural Repairs:

The 2021 Facilities Condition Assessment of buildings on CMU's main campus identified \$368 million in projected repair, upgrade and replacement costs for building assets valued at \$2.2 billion. In addition, deferred maintenance funds will be required to maintain the utility distribution systems valued at \$134 million and site infrastructure valued at \$46 million. The projected upgrade and replacement cost for the university data systems is estimated at \$35 million.

C. Status of Ongoing SBA Projects:

CMU does not have any ongoing SBA projects.

D. Rate of Return on Planned Capital Expenditures:

Brooks Hall has significant deferred maintenance needs. If the Brooks Hall project is approved, the deferred maintenance funds otherwise slated for the building will be moved to other projects. Also, a modernized Brooks Hall with innovative technology will assist the university in recruiting and retaining students, many of whom will go on to serve Michigan communities and businesses in high-demand STEM career fields. While it is hard to quantify a specific rate of return, approval of this project would greatly assist the university in addressing deferred maintenance issues and provide additional classroom and laboratory space to alleviate scheduling challenges on campus, as previously illustrated in the room utilization schedule. The additional, modern laboratory space would allow for more research to be performed with enhanced safety. Funded research provides a direct return on the capital expenditures.

E. Alternatives to New Infrastructure:

Science courses are some of the most difficult to deliver in a virtual environment, as the active learning and lab components are harder to recreate online. Traditional face-to-face instruction is the preferred method for subjects taught in Brooks Hall. During the last decade, a few science courses became available in an online format, yet these offerings are limited by the course content and need for hands-on, face-to-face experiences.

F. Maintenance Schedule for Major Items:

As defined in the 2021 facilities condition assessment, priority areas for major maintenance are:

- Building envelopes
- Mechanical, electrical, plumbing systems, including HVAC
- Utility infrastructure

CMU annually funds a minimum of \$5.7 million in deferred maintenance projects. Allocations among the various types of maintenance will depend on priority rankings and most urgent needs.

G. Non-Routine Maintenance:

CMU has consistently focused on deferred maintenance of buildings and grounds. Funding levels for deferred maintenance totaled \$5.7 million annually since 2010. In fiscal year 2014, an additional \$1.3 million in one-time funds was budgeted for roof replacement. Funding for deferred maintenance comes from the capital budget, which is funded by Auxiliary Services, Parking Services, and an annual general fund allocation of \$2.8 million. Since 2008, CMU has also invested about \$9.3 million in the renovation and upgrading of individual classrooms and auditoriums.