State of Michigan

Fiscal Year 2025

Five-Year Capital Outlay Plan

University of Michigan-Dearborn

October 27, 2023

Recommended Five-Year Master Plan Components Michigan Universities and Community Colleges

I. Mission Statement

University of Michigan-Dearborn is a caring, inclusive, student-focused institution. We are committed to excellence in teaching, learning, research and scholarship, as well as access, affordability and impact. Founded on more than 200 beautiful acres of the original Henry Ford Estate, UM-Dearborn was forged in a community of working people with the global economy in mind.

We offer a transformative education reflective of the University of Michigan name, rooted in an ongoing commitment to the well-being and diversity of metro Detroit. Since our very beginnings, we have set ourselves apart in higher education through intentional, mutually beneficial partnerships with local industry, governments, and community organizations that have real impact.

UM-Dearborn is rich in opportunities for creative collaborative research, practice-based learning, and direct engagement with local communities. As an institution, we are always learning, and we strive to be responsive to the changing needs of our diverse students, the world in which they live and work and the communities we serve.

We accomplish this mission by:

- Preparing our graduates to become thoughtful citizens and creative leaders who are ready to offer practical solutions to society's challenges, particularly those impacting urban environments
- Integrating the liberal arts and sciences, professional studies and research opportunities to nurture holistic thinking and problem-solving skills
- Organizing classroom experiences around the latest pedagogies and teaching methods
- Cultivating faculty who are leaders in their disciplines, inspire their students, and care for their students' needs
- Helping our students achieve both personal growth and professional success
- Creating and sharing pioneering interdisciplinary research that supports diverse sections of our economy, with an emphasis on work that serves the common good
- Making lasting local impacts by valuing the experiences, knowledge, needs and voices of our business and community partners
- Fostering an intellectual and social environment that is caring, dynamic, and welcoming of new ideas

- Forging mutually beneficial partnerships with businesses, community-based organizations, educational institutions and government agencies
- Constantly finding new ways to honor our commitments to accessibility, flexibility, affordability, diversity and inclusion

II. Instructional Programming

As part of the Five-Year Capital Outlay Plan, each college and university shall provide an overview of current academic programs and major academic initiatives. This "instructional programming" component should:

a. Describe existing academic programs and projected programming changes during the next five years, in so far as academic programs are affected by specific structural considerations (i.e., laboratories, classrooms, current and future distance learning initiatives, etc.)

Our Roots:

University of Michigan-Dearborn was established in 1959 as a public-private collaboration between the State of Michigan and Ford Motor Company, with the initial goal of increasing higher education and technical training across southeast Michigan. UM-Dearborn has followed through on its founding mission ever since.

Consistent with this initial workforce-focused mission, engineering and business were the university's first academic units. The College of Engineering and Computer Science (CECS) and the College of Business (COB) were founded to offer competitive engineering and business education to students who were actively engaged in their professions and careers, among the first generation in their families to attend college and who overwhelmingly stayed within the region after graduation.

Alongside ever-increasing strength and contributions in fields of engineering and business, the Dearborn campus steadfastly developed and realized teaching and research excellence in the humanities, sciences, mathematics and education, housed respectively in the College of Arts, Sciences, and Letters (CASL) and the College of Education, Health, and Human Services (CEHHS). Today, University of Michigan-Dearborn continues to serve the region's evolving manufacturing economy, while initiatives fostered since its founding have positively positioned the university for the transition from an industrial to a knowledge-based economy.

Over the decades, as UM-Ann Arbor grew into an internationally-ranked, globally-renowned research university, UM-Dearborn has carried the tradition and

outlook articulated in the early 1900s by former U-M President James B. Angell to offer "an uncommon education for the common man."

Our Evolution:

Properly educating a 21st-century, creative, globally-competitive and culturally-literate workforce involves challenges that were not especially considered during the formative years of UM-Dearborn.

UM-Dearborn provides a transformational education and its impact is realized in its graduates and throughout the entire region. For example, the campus has educated thousands of engineers and built strong research programs in engineering that have contributed to the region's principal economic driver — the automobile industry. As one of two colleges that were the first products of the Ford/State of Michigan collaboration in 1959, the Dearborn campus supplies approximately the same number of skilled engineers to Ford as does UM-Ann Arbor's College of Engineering, which is more than four times our size. Our tradition of transforming the region continues in major research projects that are underway to develop materials for light-weight vehicles and battery technology for alternative, clean-air sources of energy to power tomorrow's vehicles.

Initiatives–Looking Forward:

Today, UM-Dearborn continues to serve the region's evolving manufacturing industry, while initiatives since its founding have positively positioned the university to help Michigan compete in a knowledge-based economy.

UM-Dearborn has a strong record of enhancing the social mobility of its graduates. The institution serves an ethnically and racially diverse region that relies on an economy that remains closely tied to manufacturing. Critical to the health of the region is the development of workforce skills that support an ongoing transition from a manufacturing economy to a more diverse knowledge and skill-based one, supported and driven by technological innovation.

A critical responsibility of UM-Dearborn is to prepare students for what comes next - whether it be employment, entrepreneurship, or graduate or professional school. Thus, a primary goal for student learning is knowledge and skill development. In addition, because learning is occurring on a commuter campus with a substantial number of non-traditional, first generation, and international students, the development of a sense of belonging and connectedness on campus is core to student success and retention. The institution is employing Practice Based Learning (PBL) to prepare students for the

workforce with the secondary benefit of facilitating a sense of connection, through engagement with faculty and classmates in active coursework with shared goals.

PBL encompasses curricular and co-curricular experiences that require students to apply, analyze, evaluate, or create knowledge often in collaboration with others and across disciplinary boundaries. The aim of PBL is to promote a deeper understanding of core concepts through their application, and to provide students with the opportunity to assess and learn from natural consequences, mistakes, and successes. PBL coursework is built upon student centered projects often associated with complex, authentic problems.

UM-Dearborn has also launched Experience+ (EXP+) — a collaboration between the Mardigian Library, Career Services, and Global Education. The goal of this initiative is to develop and support three critical literacies for our students: information literacy, digital literacy, and career/professional literacy. Experience+ achieves this goal by providing funded opportunities for students to engage in undergraduate research, graduate research and writing support, software and tech development, intercultural workshops and career coaching and development through interactive learning experiences. Aligned closely with the experiential learning programs of all four UM-Dearborn colleges, these opportunities will lead to better prepared students upon graduation.

Our Transformative Educational Experience:

A top-tier regional public university with over 8000 undergraduate and graduate students as of the Fall 2023, UM-Dearborn has developed into a distinctive regional university characterized by high-quality, nationally-ranked or recognized programs that provide a transformative education for the highly-diverse populations of southeast Michigan:

- UM-Dearborn has been nationally ranked or recognized:
    - Third best regional public university in the Midwest and number one regional public university in Michigan (2023 edition of U.S. News & World Report “America’s Best Colleges”).
    - Top regional public university in Michigan on the list of “Top Performers on Social Mobility” (2023 edition of U.S. News & World Report “America’s Best Colleges”).
    - Top regional public university in Michigan for Veterans (2023 edition of U.S. News & World Report “America’s Best Colleges”).
    - The Computer Science undergraduate degree program in the College of Engineering and Computer Science was ranked in the top five computer science programs in Michigan (2023 edition of U.S. News & World Report “America’s Best Colleges”).

    - The College of Business ranks as a top five undergraduate business program in Michigan (2023 edition of U.S. News & World Report “America’s Best Colleges”).

- Nearly 200 degree programs that are distinguished by their commitment to academic excellence.
- Small classes (taught by accessible faculty, rather than teaching assistants) – 69 percent of our classes are taught with 30 or less students.
- Hands-on learning environments with faculty committed to a teacher-scholar model, providing students a transformative, relationship-based experience, and over 700 co-op and internship opportunities that offer real-world experience.
- 47 percent of UM-Dearborn’s undergraduates (new first-time-in-any-college and transfer students) are the first in their family to attend a four-year college and 46 percent of our students are PELL eligible.
- 96 percent of our graduates, who have accepted employment, stay in Michigan after graduation.

b. Identify the other unique characteristics of each institution's academic mission:

For Universities: Major research institution, liberal arts, technical/vocational center, geographic service delivery area(s), community presence activities, demographic profile, etc.

Academic Programs:

College of Arts, Sciences, and Letters (CASL):

Mission Statement: The College of Arts, Sciences, and Letters inspires and equips its students, through education in the liberal arts, to be servant leaders in society at large and for the resurgence and renewal in southeast Michigan. The college fulfills its mission by providing rigorous and intellectually-challenging educational experiences, rich in critical thinking, collaborative and reflective learning, civic engagement, and personal interaction with high-quality and dedicated faculty. CASL promotes the value of lifelong intellectual growth and development, rational and respectful discourse, living and leading in multicultural societies, striving for justice and fairness, and in gaining a global perspective.

CASL Departments:

- Behavioral Sciences
- Language, Culture and the Arts
- Mathematics and Statistics

- Natural Sciences
- Social Sciences

CASL is the liberal arts college at UM-Dearborn with more than 200 full-time faculty and over 2,200-plus undergraduates who represent thirty six percent of UM-Dearborn's undergraduate enrollment.

CASL's varied undergraduate and graduate academic programs reflect a commitment to leadership, learning, and student success. By offering a curriculum steeped in the liberal arts and sciences, the college provides students with the necessary foundation to excel in their academic pursuits and to make a difference in the world beyond the classroom. Moreover, various opportunities for interdisciplinary work, academic service learning, internships, and co-ops mean that CASL students leave this campus prepared not just for employment but for life.

CASL is home to five graduate programs and 38 undergraduate majors. Undergraduate programs range from Women's and Gender Studies to Biochemistry, English to Environmental Science, Mathematics to International Studies, and Political Science to Criminology and Criminal Justice. With our rich array of majors and minors in addition to certificate programs and an Honors Program, CASL offers a transformative experience that prepares citizens with a wide and critical perspective, a deep appreciation for humanity's achievements, and the creative bent necessary for tomorrow's work.

Campus offices and classrooms associated with CASL are located in the CASL Building, the Science Faculty Center, the Natural Sciences Building, the Natural Sciences Building South, and the Environmental Interpretive Center. CASL programs are strong in civic engagement and the classroom experience extends throughout southeast Michigan.

CASL is home to a number of research centers that produce scholarship, sponsor lectures, workshops and symposia, as well as engage in projects relevant to the community:

- *Center for Arab American Studies (CAAS):* Dearborn is home to one of the largest population centers for people of Arab descent outside of the Middle East. CAAS supports research and activities involving issues related to Arab Americans, Arab immigrants and the global Arab community.
- *Center for Armenian Research:* The only university-based center for research on Armenia and Armenians in the U.S. Established in 1985, the center has an extensive archival collection utilized by scholars and researchers from around the world.

- *Center for Mathematics Education:* Dedicated to improving the preparation of prospective mathematics teachers and providing continuous professional development opportunities for current teachers. It is a primary resource center for teachers and schools, and a leader in creating exemplary models of teacher education.
- Center for the Study of Religion & Society: Provides a focus for multidisciplinary, scholarly research on religion and its relationship to American society, with special attention to the traditions and communities of metropolitan Detroit, one of the most religiously-diverse areas in the nation.

CASL provides a wide range of internships and co-op experiences that allow hands-on scholarly engagement with the community that give our students a leg up after graduation:

- Cooperative Education Program
- Criminal Justice Internship Program
- Economics Internship Program
- Environmental Studies Internship Program
- Humanities/History Internship Program
- Ottawa Political Internship Program
- Psychology Internship Program
- Public Affairs Internship Program

College of Engineering and Computer Science (CECS):

Mission Statement: The mission of the College of Engineering and Computer Science is to be a leader in providing quality undergraduate and graduate programs in an environment integrated with engineering practice, research and continuing professional education, in close partnership with the industrial community.

CECS Departments:
- Computer and Information Science
- Electrical and Computer Engineering
- Industrial and Manufacturing Systems Engineering
  Mechanical Engineering

With over 2,100 undergraduate students and 1,300 graduate students, CECS represents over forty percent of the overall student population at UM-Dearborn making it the largest college in terms of student headcount.

The educational objective of CECS is to prepare students to take leadership positions commensurate with their interests and abilities in a world where science, engineering and human relations are of basic importance. Programs of study integrate fundamental mathematical and scientific theory with experiments, advanced analysis and design practice to produce the coherent educational preparation required of professional engineers and computer scientists. Both the CECS academic curriculum and co-op placements are planned to prepare students to become practicing engineers and computer scientists, administrators and investigators. The knowledge, skills and discipline gained from the CECS are broad and fundamental, constituting an excellent preparation for other careers outside of the majors, such as law and medicine.

CECS offers 14 undergraduate degree programs, including 2 undergraduate degree programs that are collateral to a principal undergraduate degree in engineering or computer science, and a minor in computer science, and 3 minors in computer science, artificial intelligence, and game design. At the graduate level, CECS offers 19 master's degree programs and six doctoral programs. The college offers programs leading to ABET accredited bachelor of science in engineering degrees in bioengineering, computer engineering, electrical engineering, industrial and systems engineering, manufacturing engineering, mechanical engineering and robotics engineering. In addition, students in these programs may earn a second bachelor of science in engineering degree in engineering mathematics. The college also offers a four-year degree program leading to a bachelor of science in computer and information science (ABET accredited), software engineering (ABET accredited), data science, and cybersecurity and information assurance. In addition, students in these programs may earn a second bachelor of science degree in computer and information science mathematics. Programs are offered as conventional academic programs or as part of the cooperative education program. In the latter, students are required to participate in professional work assignments.

The college's partnerships with major domestic automobile companies and automotive suppliers have led to many educational opportunities for its students and research for both students and faculty. Regular feedback from the three advisory boards of CECS, including the Alumni Affiliate Board, the Industrial Advisory Board, and the Visiting Committee helps shape the curricula, develop laboratory facilities and design collaborative research projects in the college.

In 1991, in partnership with industry, UM-Dearborn established the Center for Engineering Education and Practice in 1991, later renamed the Henry Patton Center for Engineering Education and Practice (HP-CEEP) in 2004. In 1997, the college established the Institute for Advanced Vehicle Systems (IAVS). HP-CEEP helps to incorporate engineering practice, design, innovation and concepts of manufacturing

technology at all levels of engineering education by integrating the teaching environment with the world of practice. The mission of the Institute of Advanced Vehicle Systems (IAVS) is to accelerate applied research for advanced vehicle systems in the areas of product development and manufacturing.

CECS includes our primary classroom and teaching/research laboratory facility, the Engineering Laboratory Building (ELB). Built in 1959 as one of the original four buildings on the campus, the ELB reopened in February 2021 with a complete renovation and expansion. The $90 million project was partially funded by the State of Michigan capital outlay program. The building has 123,000 sq ft of educational space — a 34 percent increase — that supports current teaching pedagogies, the expectations of our regional industrial partners, and the ongoing growth of the College of Engineering and Computer Sciences. The ELB is designed to inspire collaboration, innovation and cross-disciplinary teamwork and will help southeast Michigan maintain a leadership role in engineering.

The CECS also includes the Computer Information Science building with offices and two computer labs, also originally constructed in 1959; the Manufacturing Systems Engineering Lab (1988) and Heinz C. Prechter Engineering Complex (1997), which houses offices, labs and graduate student-research areas; and the Institute for Advanced Vehicle Systems (2007) that features research labs, a classroom lab and an auditorium.

CECS is home to a number of centers and institutes designed to interact with Dearborn and the metropolitan community. The strong external orientation that CECS has developed ensures that UM-Dearborn will continue to have an impact on the regional economy through education of the "workforce of tomorrow." UM-Dearborn was the only university to receive a prestigious grant from the U.S. Department of Energy's Graduate Automotive Technology Education (GATE) program in 1998.

- *Henry W. Patton Center for Engineering Education & Practice:* HP-CEEP's mission is to be a leader in incorporating engineering practice, design, innovation and concepts of manufacturing technology at all levels of engineering education by integrating the teaching environment with the world of practice.
- *Center for Lightweighting Automotive Materials and Processing (CLAMP):* CLAMP is a national university education and research center dedicated to exploring the design potential, applications and processing of advanced materials for lightweight automobiles.
- *Institute for Advanced Vehicle Systems:* The mission of IAVS is to accelerate applied research for advanced vehicle systems in the areas of product development and manufacturing; focus on systems related to the design, development and manufacturing of complex vehicles; and conduct research

related to body and chassis systems, manufacturing processes and integration with powertrain systems.

- *Center for Electric Drive Transportation:* Established in 2011 as one of the seven university research centers that were awarded a prestigious GATE grant, the Center for Electric Drive Transportation at UM-Dearborn is dedicated to achieving the synergy among technological development, research and graduate education in automotive engineering, with focuses on technologies related to electric drive vehicles.
- *DTE Power Electronics and Electric Drives Laboratory:* Established through a $190,000 grant from DTE Energy and an internal matching grant, the laboratory's research is in the area of power electronics, hybrid electric vehicles and renewable energy systems.
- *Cybersecurity Center for Education, Research, and Outreach:* The center was established to integrate existing university-wide activities and initiatives in cybersecurity and information assurance, with the goal of addressing the national need for educating cybersecurity professionals and for advancing the knowledge and practice of cybersecurity and information assurance.
- Dearborn Artificial Intelligence (AI) Research (DAIR) Center: DAIR Center was created to advance research in core AI and its applications and become a hub for promoting large-scale research, in collaboration with AI academics, practitioners and business leaders.

College of Education, Health and Human Services (CEHHS):

Established in 2013, the College of Education, Health, and Human Services (CEHHS) offers exemplary teacher preparation and advancement programs while also providing opportunities to students interested in health care and human services-related programs. Enrollment is more than 800 students.

Mission Statement: The mission of the CEHHS is to prepare and sustain exemplary teachers, trainers and administrators through emphasis on scholarship, diverse clinical experience, and practice in effective service delivery.

To achieve its mission, the CEHHS draws upon a broad assortment of institutional resources, including staff and programs in other colleges at the university. Additionally, the facilities of local school districts, other public agencies and private corporations are regularly utilized to provide students with a rich spectrum of laboratory experiences.

The college achieves its mission in concert with the metropolitan vision affirmed by UM-Dearborn:

At the University of Michigan-Dearborn, we believe that a university needs to be an active partner in addressing the challenges its community faces. We seek to bring the knowledge resources of the university into engagement with the needs of the people of southeast Michigan. We aim to achieve a major impact in meeting the needs of our region's evolving economy, environment and culture.

Three key elements in the university's metropolitan vision are core concerns and central foci of academic programs, faculty scholarship and outreach activities of the College of Education, Health, and Human Services:

- Meeting the needs of preschool and K-12 education in the region,
- Addressing racial and ethnic discrimination, and
- Developing effective regional leadership.

CEHHS Departments:

- Education
- Health and Human Services

CEHHS aims to prepare and sustain exemplary practitioners and administrators for work in the interrelated fields of education, health and human services. We do this through emphasis on scholarship, diverse clinical experiences and practice in effective service delivery. The college draws broadly upon institutional resources, including faculty and programs from other colleges at the university.

The college fosters connectedness among the academic endeavors in the unit, providing a unique focus on the interrelated nature of education, health and human services. In this way, the college mirrors the intermingling of these spheres in the lives of the professionals who work within them, and addresses the historically-fractured nature of the preparation of professionals in these critically-important jobs.

CEHHS offers five Bachelor of Arts degrees in the field of education. These degrees have been combined with programs leading to the completion of the Michigan Provisional Teacher's Certificate. The Education Department offers undergraduate students a number of different program options leading to the attainment of a bachelor's degree. These range from those wishing to acquire a teaching certificate at the elementary or secondary school levels to those planning on working with children and families in settings not requiring state teacher certification. The Michigan Department of Education has designated the teacher preparation program at UM-Dearborn as "Exemplary," the highest category available, and the teacher preparation program also is nationally accredited by the Teacher Education Accreditation Council.

The Education Department offers seven master's degree programs to advance the knowledge and pedagogy of current educators in the region, preparing them to be caring, reflective educators. Most of our master's degree programs are suited in particular to educators seeking advanced levels of specialization in their teaching.

- The Master of Arts in Educational Technology degree is designed for educators, instructional designers, professional trainers and instructors of adult learners interested in developing expertise in various forms of educational technology related to teaching and learning. The program can be completed fully online and offers professionals advanced knowledge in a broad range of educational technologies.
- The Master of Science in Applied Behavior Analysis prepares students with training in the science of learning and behavior and prepares them to work as Board Certified Behavior Analysts (BCBA).
- The Master of Arts in Community Based Education is designed to serve two related professional fields: 1) individuals working with and for nonprofit organizations engaged in educational outreach and 2) urban teachers who are working to build connections with the community as part of implementing place-based education strategies.
- The Master of Arts in Early Childhood Education is designed for teachers, administrators, other service providers and educators who wish to learn how to serve young children and their families.
- The Master of Arts in Education offers several areas of concentration and is of interest to already-certified teachers seeking to expand their areas of expertise. ● The Master of Arts in Educational Leadership is designed to prepare students for roles in PK-12 school leadership.
- The Master of Arts in Teaching, for those holding bachelor's degrees seeking initial secondary level certification, provides students with pedagogical and content-specific knowledge, readying them to work with diverse learners in the middle school and high school classroom.

In addition, the Education Department offers a doctoral program that focuses on the development of a high level and advanced proficiency in the education field of study as well as acquisition of research and leadership skills. It aims to produce graduates who can solve practical problems in a specific education-related context. The Ed.D. is ideal for educators who seek new skills and opportunities for leadership and is designed to meet a critical need in southeast Michigan for leaders who can transform education at the PK-12 and community college levels.

Finally, the Education Department provides exemplary preparation and continuing education for PK-12 teachers and administrators. The school offers programs leading to initial teacher certification at the bachelor's and master's levels and opportunities for

professional development and advancement through degrees at the masters, education specialist and doctoral levels.

The Department of Health and Human Services offers a Bachelor's of Science Degree in Health and Human Services (HHS) with a focus on strong skill-based training to prepare students to identify and meet the needs of vulnerable individuals, families and communities. The HHS degree was designed with professional preparation and graduate school success in mind.

HHS students are interested in meaningful careers right out of college and many go on to pursue additional graduate training. Students enrolled in this program are often interested in public health, social work, child life, health policy and administration, child and family services, addiction and recovery services as well as specialized health care professions including medicine, physician assistant studies, pharmacy, physical therapy, occupational therapy, dentistry, optometry, and second-degree nursing.

Using evidence-based best practices, our graduates can develop, implement, and evaluate programs to help people and groups function more effectively and overcome individual and social challenges. Students are free to choose between three specialized concentrations in public health, human services, and pre-health professions that best align with their personal and professional goals. Students in all three concentrations will be grounded in multidisciplinary, ethical, and state-of-the-art approaches to the delivery of public health intervention, human services, and medical care. The HHS degree program is rooted in strong academics, innovative research, and active learning through community engagement.

The Department of Health and Human Services also offers a master's degree in Health Information Technology (HIT). Such a degree prepares students to design, implement, manage, and utilize IT resources that medical and healthcare organizations rely on in more effective ways. Metropolitan Detroit has some of the best healthcare organizations in the world that will drive our economy into the future. Students graduating with a degree in HIT would be able to have a direct impact on helping the transition and improvement process currently happening in healthcare organizations.

CEHHS offers programs in many important areas including early childhood education, educational leadership, educational technology, special education, and the teaching of many school subjects. Students have opportunities to test theories of teaching and learning in action while also honing skills through experience as they engage with education professionals and children in area school districts and at the highly regarded Early Childhood Education Center (ECEC), a facility approximately two miles from the Dearborn campus in a leased facility that is shared with Beaumont Hospital.

The college administrative offices are located on the second floor of the Fairlane Center South building, and associated classrooms and labs are located in the same building; however, the CEHHS experience extends well beyond the classroom building walls. Additionally, facilities in local school districts, health-related settings, and other public agencies and private corporations regularly provide students with a spectrum of rich experiences.

CEHHS is recognized for its concentrated focus in several specific areas. These centers and initiatives are designed to marshal available expertise at the institution in pursuit of regional needs and goals in several particular emphasis areas, including early childhood learning and instruction and inquiry-based science instruction. UM-Dearborn holds the goal of becoming a nationally recognized model of service and education. Each partner brings to the effort its expertise, passion and commitment.

Early Childhood Education Center: The ECEC is a State of Michigan-approved education and child care center for young children. It also serves as a model teacher preparation and child study facility for students enrolled in a variety of UM-Dearborn education courses. ECEC shares its location with Beaumont Healthcare in collaboration with its Center for Exceptional Families, which assists children with disabilities and their families.

The Inquiry Institute: Formed in 1997, the Institute is a unique collaboration of science educators from the CEHHS and scientists in the Department of Natural Sciences who have worked on numerous grants, program revisions and the development of the Master of Science in Science Education degree, developing numerous science courses for pre-service and in-service teachers that use inquiry pedagogy as the main teaching strategy as recommended by the National Science Education Standards.

College of Business (COB):

Mission Statement: Our mission is to be the school of choice for quality business education in the greater metropolitan Detroit.

The College of Business provides high quality, practice-oriented business programs to well-qualified students on a regional campus of the University of Michigan. While the College primarily maintains a regional student focus, it provides a quality educational experience preparing them for national placement. Our primary mission is to meet the business-related educational needs of our undergraduate and graduate students, supported by new technologies and a variety of teaching methodologies. By providing regional organizations with professionally competent interns and graduates, we strive to

meet both the community's human resource needs and our students' employment and education needs. The mission is enhanced by the College's location in a major metropolitan and industrial area. The environment is strongly influenced by the automobile manufacturing industry and its increasingly global outreach.

Our undergraduate and graduate programs are designed to supply students with professional and technical skills essential to being successful in an evolving business environment. Each program is characterized by limited class size. We also offer students outstanding professional internship opportunities. Our primary mission is complemented by our faculty's commitment to making intellectual contributions. The main focus of this intellectual process is refereed publications in nationally recognized journals that lead to contributions beneficial to academic and business professionals.

To achieve this mission, the COB:

- Creates rigorous business programs delivered to talented students by outstanding experts in a creative, intellectually challenging environment.
- Prepares our students to meet the business challenges of rapid technological change, a knowledge-based economy, globalization, and the ethical demands of a free society.
- Conducts research that positively impacts the thought and practice of professionals and academics.

COB Departments:

- Accounting & Finance
- Management Studies

The College of Business provides high-quality, practice-oriented business programs to well-qualified students. Offering a bachelor’s in business administration with nine possible concentrations and seven master’s degree programs, UM-Dearborn’s College of Business offers students a diverse array of opportunities to pursue being the leaders and best. After developing one of the first online MBA programs in the country, the College of Business continues to offer traditional students and working adults the flexibility to complete their undergraduate and/or graduate degree at their own pace.

The College of Business community includes nearly 1,000 undergraduates and 400 graduate students. providing a quality educational experience that prepares them for local leadership or national placement. Its primary mission is to meet the business-related educational needs of our undergraduate and graduate students, supported by new technologies and a variety of teaching methodologies. By providing regional organizations with professionally competent interns and graduates, the COB

strives to meet both the community's human resource needs and students' employment and education needs. Students work with excellent faculty to develop the skills that will enable them to positively impact the economy of the state of Michigan and beyond. The mission is enhanced by the COB's location in a major metropolitan and industrial area. Our programs are strongly influenced by the automobile manufacturing industry and its increasingly global outreach.

U.S. News & World Report, as well as The Princeton Review and Poets & Quants continually rank us among the best programs in the state of Michigan and as a top tier program in the country. It ranks highly because of the impact on our students, whether it's a team taught course that shows undergraduates how to become entrepreneurs and boost the local economy in urban areas or providing internships that help students work for an average of $14/hour while gaining the experience that can catapult them into fulfilling and successful careers after graduations.

The COB master's programs in the growing fields of business analytics and supply chain management give our students the knowledge base to succeed in a changing marketplace. They also offer the opportunity to participate in iLabs, a research institute dedicated to advancing the understanding of corporate, entrepreneurial, and institutional innovation and its impact on economic development.

The College of Business is located in the Fairlane Center South building. COB facilities include classrooms with regularly updated technologies, computer labs for student learning and research, and the Business Experiential Learning Laboratory (BELL), our financial learning laboratory, which simulates a real-world trading floor.

UM-Dearborn's Center for Innovation Research – iLabs – is housed within the College of Business. iLabs, a research institute established in 2006, is dedicated to advancing the understanding of corporate, entrepreneurial, and institutional innovation and its impact on economic development. iLabs is proud to have worked with these outstanding clients to bring our innovation research to their firms:

- *Chaldean Foundation and Chaldean American Chamber of Commerce:* iLabs surveyed 1,700 random households who were members of one of six Chaldean churches within the Chaldean Diocese of Saint Thomas the Apostle of Detroit to better understand the local and regional economic impact of Metro Detroit's Chaldean community.
- *eCities:* Every year, iLabs engages more than 250 communities across the state of Michigan through its eCities project. The project collects data on community level factors that influence economic development and job growth. Further, community leaders submit their "success stories" to describe how they are promoting small business development and improving the business climate of

their community, and responses are reviewed by small business support leaders, entrepreneurs, and governmental liaisons.

- *Wayne County Airport Authority:* iLabs performed economic impact studies for Detroit Metro and Willow Run airports, facilities crucial to the economic health of the state and region. Results revealed that Detroit Metro Airport provides an economic impact of $10.2 billion and more than 86,000 jobs to the State of Michigan. Willow Run Airport has an economic impact of $123 million and nearly 1,000 jobs.
- *University of Michigan-Dearborn:* Findings from focus groups and surveys have helped determine the needs, preferences, and decision making processes of students and local employers of Metropolitan Detroit. As a result, changes have been made to course offerings, internship programs, and opportunities for involvement of students and community stakeholders.
- *Detroit Jewish News and Chaldean News:* Through an innovative survey process, iLabs identified opportunities for collaborations between members of these two communities in southeast Michigan. The 10-month Building Community Initiative partnership explored and shared the many similarities of Metro Detroit's Jewish and Chaldean communities while addressing the many misperceptions that exist between the two groups.
- *American Jewish Committee (AJC) and Michigan Muslim Community Council (MMCC):* iLabs examined the attitudes and experiences of 600 members of the Muslim and Jewish communities in southeast Michigan to better understand the existing connections between both groups and how future engagement opportunities may exist.
- *Big Brothers Big Sisters of Metropolitan Detroit:* Through an online survey, iLabs examined current and former “bigs” to help BBBSMD understand how best to retain volunteers and to gauge volunteer interest in a potential benefits program.
- *Northwest Detroit Farmers’ Market:* iLabs worked with Northwest Detroit Farmers’ Market (NWDFM) to develop actionable strategies to grow the market’s customer base. iLabs identified several areas of opportunity for NWDFM to incorporate into their practices.
- Osborn Neighborhood Alliance: To better market and promote the 7 Mile and Gratiot business corridor, iLabs conducted an online survey and conducted interviews with Osborn community leaders.

c. Identify other initiatives which may impact facilities usage;

The University’s commitment to Practice Based Learning (PBL) will have a significant impact on not only academic programming but the faculty and student use of facilities. We have embraced PBL as a campus in order to better prepare students for what comes next - whether it be employment, entrepreneurship, or graduate or professional

school. At its core, PBL encompasses curricular and co-curricular experiences that require students to apply, analyze, evaluate, or create knowledge often in collaboration with others and across disciplinary boundaries. Therefore we see the need to update our facilities to support student learning in ways that promote learning by doing and emphasizing applied-knowledge building.

d. Demonstrate economic development impact of current/future programs (i.e., technical training centers, life science corridor initiatives, etc.).

The university believes PBL will have a significant and positive economic impact on the region by preparing the future leaders of Michigan by giving them the proper tools to grapple with challenges facing the region and state. Offering ways to combine a broad and deep understanding of both the liberal arts and sciences, engaging in professional studies and advancing cutting-edge research will allow them to apply innovative technical skills and new ways of learning that will help our state best the competition. Additionally, students can apply real-time learning into their work organizations, creating an immediate impact for Michigan businesses and organizations.

III. Staffing and Enrollment

Colleges and universities must include staffing and enrollment trends in the annual Five-Year Capital Outlay Plan. This component should:

a. Describe current full and part-time student enrollment levels by academic program and define how the programs are accessed by the student (i.e. main or satellite campus instruction, collaboration efforts with other Institutions, Internet or distance learning, etc).

Seventy-nine (79) percent of undergraduate students at UM-Dearborn are currently enrolled full time in Fall 2023. Sixty-Six (66) percent of graduate students at UM-Dearborn are currently enrolled part time in graduate degree programs (masters, specialist, doctorate).

All of the university's undergraduate and graduate programs can generally be accessed by students on-campus.

UM-Dearborn has 27 master's programs that are available fully online and 21 graduate certificates available fully online at this time. Most of these are offered in both an on-campus and online format. Education with TESOL concentration (MA), Educational Technology (MA), Early Childhood Education with Administration and Leadership concentration (MA), and the TESOL Graduate Certificate are only available online.

Our top five programs by new FTIAC enrollment as of the Fall 2023 are Pre-Engineering, Pre-Business, Biological Sciences, Psychology, and Computer & Information Science. At the graduate level, our top five programs by new enrollment are Data Science, Computer & Information Science, Automotive & Mobility Systems, Mechanical Engineering, and Engineering Management.

b. Evaluate enrollment patterns over the last five years.
UM-Dearborn's enrollment experienced a slight decline (2%) this year, a predictable result of the continuing decline in high school graduates in the state. Fall 2023, our undergraduate student population — 6,071 students — has declined by 12% compared to the Fall 2019 (6,914 undergraduate students). Some of the undergraduate decline began in Fall 2019 but a significant portion has occurred during the Fall 2020 to Fall 2023 period. At the graduate level, the enrollment declines began in the Fall 2020 — as expected with COVID-19 having a significant impact on international enrollments — where we experienced a 10% decline in enrollments (over 2200 down to 2058) from the prior year. Fall 2023, UM-Dearborn experienced a decrease in graduate enrollments (1966), the biggest issue was a decline in international students (39%) over record post-COVID international enrollment in Fall 2022. Domestic grad student enrollment remained constant from Fall 2022.

c. Project enrollment patterns over the next five years (including distance learning initiatives).

UM-Dearborn's total enrollment during Fall 2023 is 8037. The university has a strategic plan and is initiating an enrollment management plan, a data-informed process to align our fiscal, academic, co-curricular, and enrollment resources with the changing environment in higher education to accomplish our mission and ensure our long-term enrollment success and fiscal health. The central importance of increasing enrollment, as well as retention and graduation rate, is reflected in the university's vision statement. We understand our obligation to the people of Michigan. Nearly 90 percent of our students are Michigan residents. See the table below for specific enrollment trends over the past five years.

Headcount for both undergraduate and graduate levels for the last five years is outlined in the table below:

UM-Dearborn Headcount by College and Level					
All Students - Undergraduate					
	Fall 19	**Fall 20**	**Fall 21**	**Fall 22**	**Fall 23**
CASL	2,679	2,473	2,287	2,185	2,172
CECS	2,287	2,311	2,240	2,159	2,143
CEHHS	622	659	644	652	650
COB	1,169	1,125	1,046	986	931
Unit Undetermined	157	157	138	135	175
Total	6,914	6,725	6,355	6,117	6,071
All Students - Graduate					
	Fall 19	**Fall 20**	**Fall 21**	**Fall 22**	**Fall 23**
CASL	115	109	92	90	74
CECS	1,363	1,186	1,191	1,381	1,336
CEHHS	219	215	171	156	156
COB	584	548	522	480	400
Unit Undetermined	0	0	0	0	0
Total	2,281	2,058	1,976	2,107	1,966
Grand Total	9,195	8,783	8,331	8,224	8,037

d. Provide instructional staff/student and administrative staff/student ratios for major academic programs or colleges;

Current instructional staff (faculty)/student and administrative staff/student ratios for UM-Dearborn's four colleges are as follows:

College	Instructional Staff	Administrative Staff
College of Arts, Sciences, and Letters	0.11	.07
College of Education, Health, and Human Services	0.04	.05
College of Engineering and Computer Science	0.06	.13
College of Business	0.05	.06

e. Project future staffing needs based on five-year enrollment estimates and future programming changes;

Both faculty and staff retirements occur, positions are assessed for need and filled only as deemed necessary to operations. With termination turnover (non-retirement), the same analytical process is undertaken as well and open positions are reviewed to ensure they are properly classified with the appropriate job duties and salary.

f. Identify current average class size and projected average class size based on the institution's mission and planned programming changes.

UM-Dearborn consistently maintains small class sizes, with over 69 percent of all classes having a class size of 30 or fewer. It is anticipated that future implemented programming changes will not impact continued small class sizes.

IV. Facility Assessment: A professionally developed comprehensive facilities assessment is required. The assessment must identify and evaluate the overall condition of capital facilities under college or university control. The description must include facility age, use patterns, and an assessment of general physical condition. The assessment must specifically identify:

a. Summary description of each facility (administrative, classroom, biology, hospital, etc.) according to categories outlined in "net-to-gross ratio guidelines for various building types," DTMB-Office of Design and Construction Major Project Design Manual, appendix 7. If a facility is more than one "type," please identify the percentage of each type within a given facility.

A summary of UM-Dearborn's Net Assignable Square Footage (NASF) of each building is provided in two formats: 1) Net Assignable Square Footage by Building and Room Type and 2) Percentage of Net Assignable Square Footage by Building and Room Type.

b. Building and/or classroom utilization rates (Percentage of rooms used, and percent capacity). Identify building/classroom usage rates for peak (M-F, 10-3), off-peak (M-F, 8-10 am, 3-5 pm), evening, and weekend periods.

UM-Dearborn is currently updating its Comprehensive Campus Plan, work that will be complete in the second quarter of 2024. This study will include both a classroom utilization study as well as an educational adequacy assessment for each classroom. Previously, the university updated its space utilization study in 2017 subsequent to the opening of the fully renovated Natural Sciences Building and in anticipation of the renovation of the Engineering Laboratory Building which was completed in February 2021.

In response to the COVID pandemic, many classes were moved from fully in person to fully remote or hybrid modes. In preparation for a safe return to campus, the university renovated event spaces throughout the campus to create additional socially distanced, temporary classroom spaces. In Fall 2021, the university began returning to in person operations and increased its in-person presence in Fall 2022.

Prior to the pandemic, the 2017 Space Utilization Study concluded that the university's 112 classrooms had an overall 42 percent utilization rate, assuming 65 available hours per week (50 daytime hours and 15 evening hours). Station occupancy (percentage of seats filled) was 25 percent.

Pre-pandemic classroom utilization was fairly even Monday through Thursday, with an average utilization rate of 59 percent during peak times of 10:00 am – 3:00 pm. On Fridays, peak time occupancy ranged from 8 percent to 21 percent, resulting in a Monday through Friday average peak time utilization rate of 50 percent. Off-peak Monday through Friday classroom utilization rates were 21 percent for the 8:00 – 10:00 am time period and 34 percent for the 3:00 pm – 6:00 pm time period. Usage on Friday evenings and Saturdays was negligible.

The university brought 5 additional classrooms online in the Fairlane Center from 6:00 – 9:00 pm Monday through Thursday to alleviate overcrowding during those time periods. With these additions, pre-pandemic evening classroom utilization at the Fairlane Center was reduced to 80 percent from the previous 94 percent.

Pre-pandemic station occupancy averaged 31 percent during the peak periods, increasing to 37 percent for the Monday through Thursday peak times. Off-peak station occupancy averaged 15 percent for the Monday through Friday 8:00 – 10:00 am times and 21 percent for the 3:00 – 6:00 pm times. Friday utilization was significantly lower than Monday through Thursday for both daytime and evening classes.

c. Mandated facility standards for specific programs, where applicable (i.e., federal/industry standards for laboratory, animal, or agricultural research facilities, hospitals, use of industrial machinery, etc).

UM-Dearborn adheres to all mandated facility standards. University of Michigan Design Guidelines provide the basis for design and construction of facilities at UM-Dearborn. The Codes and Regulatory Agencies section of the Guidelines details specific codes and standards.

UM-Dearborn has minimal animal-research facilities (spiders, birds, and mice) that are fully compliant with all applicable standards.

d. Functionality of existing structures and space allocation to program areas served.

In general, the functionality of existing structures and the allocation of space to the programs served are appropriate. However, three spaces merit additional discussion:

- The Computer Information Science (CIS) Building, our current Capital Outlay request
- The James C. Renick University Center (RUC)
- The Mardigian Library (ML)

Computer Information Science (CIS) Building Renovation and Expansion: The 24,314 gsf Computer Information Science (CIS) building is one of the original four buildings of the University of Michigan-Dearborn campus. Built in 1959, this building is overdue for modernization and code updates. The CIS Building requires an updated design and infrastructure to adequately serve as the primary teaching/research laboratory facility for the disciplines taught by the Computer and Information Science Department. This project includes a ~10,000-12,000 GSF addition to support current pedagogies and the increasing enrollment in this discipline. The estimated cost of this renovation project is $40 million.

General Improvements

- State-of-the-art fire suppression and safety systems
- ADA compliant/barrier-free access to all teaching and research space
- Compartmentalized power controls for safety
- Sustainable, energy-efficient construction
- Teaching laboratories that accommodate current pedagogies
- Wi-Fi suitable for laboratory and classroom instruction
- Access to power outlets in all formal and informal learning spaces
- Telepresence conference room (increasingly expected by industry and government sponsors and invaluable for student-team collaboration)
- Support spaces and adequate storage spaces
- Desirable gathering and student collaboration spaces
- Showcase for a CIS education
- Welcoming aesthetics
- Improved facade and landscaping

Additional Laboratories

- Edge computing Lab
- Digital Forensics Lab

- Software Engineering Lab
- Operating System and Networking Lab

Information Technology

- Fiber: Relocate fiber that is currently terminated in the basement to a network closet on the first floor.
- Wired network: Provide a network closet on the second floor. Upgrade network from Cat 5 to Cat 6 or Cat 6A (10G to the jack).
- Wireless: Improve wireless signal penetration. The existing building is cinder block which makes signal penetration difficult. Existing APs are in the hallways. Provide improved AP spread throughout the building.
- Data center room: Evaluate the most energy-efficient/cost-effective approach for housing servers/clusters for the CIS building. Assess alternatives to a specialized data center in the CIS building such as open space in adjacent buildings.

Space Design Philosophy

- Collaborative: Flexible Labs to accommodate Practice-Based Learning, Senior design projects, student-team projects and course projects.
- Shared: Laboratories used across computing disciplines to maximize space utilization efficiency.
- Flexible Multi Use Labs: Accommodate both teaching and translational research with immediate implications for industry
- Formal and Informal: Spaces used for small- and medium-sized project work and information sharing among students, faculty and industry partners.

Transformation of the Renick University Center and the Mardigian Library:

The Renick University Center is described to students as “the heart and soul of our campus community as it plays the role of living room, activity center, gathering place, service center, and dining room. It is a unifying force at the university, the center of collaboration and community on campus for everyone. The RUC is the ultimate expression of our students’ home away from home.” Here, the Office of Student Life continually strives to create an inclusive and engaging campus community where all students feel they belong and can succeed. Right next door is the Mardigian Library, known as “a campus hub for student success, creativity, knowledge creation, and interdisciplinary collaboration; a gathering place for learners, and a catalyst for integrated learning, innovation, and community engagement.”

Together, these two adjacent buildings offer a central location that will become the focal point of our commitment to student experience and success from the moment that they

and their families consider the University of Michigan-Dearborn through their successful graduation and advancement to the next phase of their lives. Bringing student resources to a central location will allow students to easily access the social, academic and administrative support staff who all partner to keep students on a path to graduation.

As a campus with a high percentage of both first-generation and PELL eligible students, we recognize the critical importance of providing seamless access to areas that support students on their path to graduation. This work will also align with the recommendations from the Return to Work Committee which encourage us to think differently about how space can be leveraged in hybrid work environments.

In support of these goals, the University of Michigan-Dearborn has partnered with Neumann/Smith Architecture to assess the spaces in the Renick University Center and Mardigian Library through a lens of student engagement and student success in light of changing service delivery protocols, hybrid classes and work assignments, and enrollment management priorities. This work will inform the creation of a multi-year, multi-phased approach to renovating these buildings and enhancing the outdoor space that connects them.

e. Replacement value of existing facilities (insured value of structure to the extent available);

The total insurance replacement value of UM-Dearborn's existing facilities is $483 million (2023 dollars) as shown in the UM-Dearborn Values Report. This total is for structural replacement only and does not include building contents.

f. Utility system condition (i.e., heating, ventilation, and air conditioning (HVAC), water and sewage, electrical, etc).

UM-Dearborn continues to prioritize ongoing maintenance of the campus utility systems. Preventive maintenance activities are scheduled through our AiM software and equipment and infrastructure replacement is scheduled through our deferred maintenance program. Additionally, the recent ELB replacement capital outlay project replaced the central steam plant and the electrical substation for the north end of the campus.

The university continues to update the Tetra Tech database and utility system drawings as building renovations are completed and additional utility details are surfaced. The initial survey, the University of Michigan-Dearborn Utility Assessment Report, was

completed by Tetra Tech MPS (McNamee, Porter & Seely). This comprehensive study was commissioned to accomplish the following major goals:

1. Develop a composite map and information management system for UM-Dearborn's water distribution, storm sewer and sanitary sewer collection system. In addition, other utilities have also been transferred to a composite map and include fiber/telecom, medium and high voltage electric, steam distribution, and site lighting.
2. Understand the performance and assess the current condition of the existing utility infrastructure system.
3. Provide recommendations to improve the performance of the existing systems and facilitate future growth.
4. Prepare recommendations for operating and maintaining each of these utilities, and a suggested budget of operating and maintaining the utilities.

In response to the study, corrective action has been taken to address recommended utility infrastructure issues:

1. Upgrade the university's water system and provide additional reliability by providing a second connection to the City of Dearborn system at the southeast corner of campus.
2. Exercise all water main valves regularly to monitor and maintain optimum water system pressures.
3. Purge the system of stagnant water by regularly flushing the hydrants at the extremities of the systems.
4. Clean storm water drains on a regular schedule. In the past eight years, the University has spent an average of $23,000/year on storm water drain cleaning, including $14,000 in FY 2022.
5. Inspect 10,000 feet of various underground sanitary piping through CCTV camera imaging in the parking and easement areas on campus. Findings detailed the executive summary from Inland Waters Pollution Control, Inc. indicate the overall system is in satisfactory condition.

g. Facility infrastructure condition (i.e., roads, bridges, parking structures, lots, etc.);

The university conducts an annual assessment of the asphalt and concrete throughout the campus, reviewing the conditions of its 17.5 acres of parking lots, 2.9 miles of roads and 5.2 miles of sidewalks at the end of each winter. We are aggressive in our efforts to maintain walkways, roadways and parking lot surfaces each year. The university

maintains a ten-year plan for resurfacing and replacement which is reassessed and updated on an annual basis.

Over the past 15 years, 65 percent of our surface lots have been resurfaced including $1.9 million over the past 10 years to resurface all parking lots on the Fairlane Center campus and $190,000 to resurface Lot H in FY 2017.

Additionally, the university conducts an annual assessment of all concrete and asphalt throughout the campus, completing preventive maintenance activities to maintain safety and extend the life of the surfaces. The university spent $500k in FY 2023, $826k in FY 2022, $209k in FY 2021, $202k in FY 2020 $100k in FY 2019, $192k in FY2018, $155k in FY 2017, $131k in FY 2016, $107k in FY 2015, $111k in FY 2014 and $175k in FY 2013 on asphalt and concrete maintenance across the campus.

The university has one 265,680 square-foot parking structure, constructed in 1977. In 2017, the university contracted with WGI-Carl Walker to update the condition analysis of the structure. The U of M Monteith Parking Structure Report states that floor slabs and walls are in fair condition, and that the ceilings, beams, columns, and stair towers are in good condition. The report recommends that initial repairs focus on the slab delaminations and sealing or waterproofing the top of the floor slabs; this work was completed in FY19 as part of the 10-year maintenance plan that accompanied the report. This plan was updated in 2022 with a 5-year cost update. Since 2005, the university has spent ~$1.8 million for repairs and maintenance work on the parking structure; $390k of this work was completed in FY 2022, $246k in FY19, $296k in FY18 and $252k in FY14. Additional work of similar magnitude is scheduled over the next five years.

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

The University of Michigan-Dearborn Utility Assessment Report was completed by Tetra Tech MPS (McNamee, Porter & Seely). This report addresses the adequacy of existing utilities and provides recommendations for necessary improvements, along with opinions of probable costs. As outlined in the section IV.F, Utility System Condition, a number of the most significant recommendations for improvements have been completed. In addition to this overall study, existing utilities and infrastructure systems for specific buildings have been assessed and upgraded as part of major renovations. Water main and electrical separations from the HFE as well as the updates from the Natural Sciences Building renovation and the ELB replacement have been integrated into our Tetra Tech drawings and database, including the new building footprints. This

year, we completed $450,000 of repairs to the condensate return system and are currently seeing a 95-97% condensate return rate.

The university has sufficient parking to meet its current needs and its 5-year projections. We anticipate that a greater percentage of classes will be conducted in online or hybrid formats and that the university will continue to offer hybrid working options for staff, further reducing parking congestion on the campus.

The university's two campuses are less than a mile apart and are connected by a walking path as well as public roadways. The campus shuttle program provides regular service between the two campuses. The Fairlane Campus has excess parking inventory while parking on the main campus is tight but not at capacity during peak times. The university has identified 150 additional spaces that could be added by increasing the area of parking lots D, H, and E1 by approximately 50 spaces each. Currently, we believe that adequate parking is available for the next 3-5 years without these additions, and a parking study is not needed at this time.

The university is currently updating its Comprehensive Campus Plan and expects to have this document finalized in the second quarter of 2024. A Development Framework for The University of Michigan Dearborn is the previous campus master planning document. The Executive Summary document and our update of Master Plan Implementation Projects provide an overview of the previous campus master plan as a placeholder for this document until the Comprehensive Campus Plan is completed.

i. Does the institution have an enterprise-wide energy plan? What are its goals? Have energy audits been completed on all facilities and, if not, what is the plan/timetable for completing such audits?

The University has a robust energy and sustainability plan, outlined in our Energy Management Handbook. In 2020, supported by a grant from DTE Energy and the ESD, the University of Michigan-Dearborn brought together a team of 19 students, 10 faculty, and 24 staff who completed an energy analysis of major campus buildings, identified potential energy reduction projects, developed budget costs and ROIs, and prioritized these projects based on solid data and payback analysis. This team was the beginning of the Campus Energy and Sustainability Team whose activities support a broader understanding of the costs of energy and the many ways that individuals and departments can contribute to improved energy efficiency and good environmental stewardship.

The university has committed to achieving net zero Scope 2 greenhouse gas emissions (resulting from purchased electricity) by 2025 and net zero Scope 1 emissions (resulting

from direct, on-campus sources) by 2040. Our five-year plan envisions an annual reduction of 5,600 metric tons of CO_2 and a conservative annual energy savings estimate of $200,000. In addition, increased energy efficiency will allow us to spend more of our student tuition dollars and other financial resources on student success initiatives, research, and other mission-centric activities. Finally, an ongoing, multidisciplinary conversation about energy efficiency and sustainability contributes to an educated citizenry who will bring a better understanding and diverse perspectives to the issue on an ongoing basis.

UM-Dearborn is also committed to environmental stewardship in its approach to building renovation. All new construction projects, as well as major renovations, such as the renovation of the Natural Sciences Building and the replacement of the Engineering Laboratory Building, are required to meet the American Association of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Standard 90.1-2007. Projects with a construction budget of $10 million or more have a goal of exceeding these requirements by 30 percent. In addition, all projects with a construction budget that exceeds $5 million are subject to an environmental review process to help guide the design from a sustainable practices standpoint. The University of Michigan has adopted the Leadership in Energy and Environmental Design (LEED) silver certification as mandatory for all new buildings and additions (new construction) with a construction budget greater than $10 million. Our most recent capital outlay project, the replacement of the ELB, exceeded these requirements and achieved LEED gold certification.

In 2022 and 2023, the university completed LED lighting retrofits with occupancy sensors in twelve buildings (AB, CASL, CIS, FHWC, HPEC, IAVS, ML, NSBS, PEC, SLRC, SSB, RUC). The total project cost of $518,308 was funded from the university's revolving energy fund. The combined projects provide annual savings of $131,000, resulting in a simple payback of 4 years.

The university has also utilized funding opportunities from DTE Energy to help achieve its energy and sustainability goals including rebates for energy efficiency improvements and funding for an energy manager for the campus.

- To date in 2023 the university has received $10,000 in rebates for chiller tune ups in the ELB and IAVS buildings and controls scheduling in the CASL building.
- In 2022, DTE Energy provided rebates through its Strategic Energy Management Program of $25,000 for ongoing control work in SSB and FCS.
- In June 2021, the university received a $7,600 incentive payment through the DTE Strategic Energy Management (SEM) program.
- In 2020, LEED programming in the Engineering Laboratory Building (ELB) garnered $61,000 in DTE energy rebates through the DTE Energy Efficiency

Program for Business. In addition, we received a $2,690 rebate for the final phase of the Fairlane Center south lighting retrofit. In addition,

- In 2019, energy rebates of $8,900 helped to defray the costs of lighting retrofits in the Field House gym and ice arena and in various areas of the Fairlane Center South building.
- 2018 energy projects included converting the high bay lighting in the lobbies of the Fairlane Center North and South lobbies to LED, upgrade of the building management system, tune-ups of our air-cooled chillers, steam trap maintenance, and replacement of all three boilers in the central steam plant. Energy rebates for these projects totaled $24,000.
- 2017 energy rebates total $37,000 for LED retrofits of exterior walkway lights and parking lot H, steam trap maintenance, replacement of the FH boiler with a more energy-efficient model, and new energy-efficient chillers, energy recovery systems, occupancy sensors, LED lighting, energy-efficient motors and VSDs in the Natural Sciences Building.
- 2016 energy rebates total $16,000 for LED lighting retrofits (SSB auditoriums, IAVS auditorium, FCS classrooms) and a boiler replacement project in FCN.
- In 2015, the university received $55,000 in energy rebates for the following projects: LED lighting retrofit (CASL), LED lighting retrofit (parking structure), steam trap maintenance, boiler replacement (ASC), boiler CSDs, VFDs (CW & ELB), occupancy sensors (CW & ELB), LED lighting (CW & ELB), DDC controls (CW), energy recovery unit (ELB).

j. Land owned by the institution, and include a determination of whether capacity exists for future development, additional acquisitions are needed to meet future demands, or surplus land can be conveyed for a different purpose.

The university has the current land capacity for future growth and development and a plan in place to assess potential divestiture of surplus property should that become necessary.

k. What portions of existing buildings, if any, are currently obligated to the State Building Authority and when are these State Building Authority leases set to expire?

UM-Dearborn's State Building Authority Leases with lease expiration dates are listed in our University of Michigan-Dearborn Projects Financed by the State Building Authority document.

V. Implementation Plan

The Five-Year Capital Outlay Plan should identify the schedule by which the institution proposes to address major capital deficiencies, and:

a. Prioritize major capital projects requested from the State, including a brief project description and estimated cost, in the format provided. (Adjust previously developed or prior years' figures utilizing industry standard CPI indexes where appropriate).

UM-Dearborn's Five-Year Capital Projects Plan lists our campus' major project needs.

Our current state-supported capital outlay request is for the renovation and expansion of our Computer Information Science (CIS) building, one of four original campus buildings constructed in 1959. This $40 million project will update safety standards and correct current deficiencies throughout the building. The 2023 Facilities Condition Assessment (FCA) of the CIS building lists the building condition as poor with a Facilities Condition Needs Index (FCNI = 10-Yr Infrastructure Needs/Total Replacement Cost) of 0.47. This building carries a $5.1 million deferred maintenance backlog and a 10-year renewal cost of $6.4 million. The full deferred maintenance backlog will be addressed and eliminated with this renovation.

Additionally, the university has reserved funding for the first phase of the $40 million Renick University Center and Mardigian Library Transformation project.

b. If applicable, provide an estimate relative to the institution's current deferred maintenance backlog. Define the impact of addressing deferred maintenance and structural repairs, including programmatic impact, immediately versus over the next five years.

The university again respectfully requests the state leaders to consider financial support for higher education's aging infrastructure and ever-increasing deferred maintenance backlog. These types of projects do not generally garner donor support and are often not visible to the general public, making them very difficult to fund. However, they represent an increasing risk to the financial health of our institutions and the comfort and safety of our constituents.

The University engaged Sightlines to conduct a 3-year study of the campus using its ROPA+ model. The results of the Sightlines study indicate a 2016 Ten-Year Asset Reinvestment Need of $116/gsf, slightly higher than the peer benchmark of $102/gsf. This number has decreased from a peak of $125/gsf in 2014, largely as a result of the State Capital Outlay project that assisted the university in the renovation of one of the four original 1959 buildings, the Natural Sciences Building. This project, along with supporting projects in the Science Faculty Center and the Natural Sciences Building

South are largely responsible for reducing the 2014 Current Need of $91 million by $28 million. The recently completed ELB capital outlay project further reduced the Current Need by $47 million. This number inflates to $54 million in current dollars.

The Sightlines study complements the detailed, building-by-building Facilities Condition Analyses (FCAs) completed in 2018 and 2019. This study, updated annually, places the current total 10-year facility renewal needs at $154 million.

c. Include the status of on-going projects financed with State Building Authority resources and explain how completion coincides with the overall Five-Year Capital Outlay Plan.

Our most recent project financed with State Building Authority resources is the Engineering Laboratory Building. This $90 million project was authorized as a state-supported capital outlay project in July 2016, was approved for construction in July 2017, and opened in February 2021. It eliminated $45 million of deferred maintenance backlog — $31 million in current needs (HVAC, life safety, plumbing and mechanical systems, building envelope, etc.) and $14 million of modernization needs. This building exceeded its LEED silver commitment, achieving LEED gold certification.

In September 2016, UM-Dearborn reopened the newly renovated Natural Sciences Building, a $51 million project made possible through a $30 million state-funded capital outlay project approved in June 2012. This project took one of the original four buildings on the campus, built in 1959, down to its structural elements and added 13,573 gsf in a complete renovation. This project, in combination with the supporting makeway projects in the Science Faculty Center and Natural sciences Building South, removed $28 million from the campus deferred maintenance backlog, and built, to LEED silver standards, a state-of-the-art science laboratory building.

d. Identify, to the extent possible, a rate of return on planned expenditures. This could be expressed as operational "savings" that a planned capital expenditure would yield in future years.

The Engineering Laboratory Building replacement/renovation is designed to LEED silver standards and ultimately attained a LEED gold rating, creating a building that is significantly more energy efficient than the previous 1959 building. It addressed $31 million of deferred maintenance backlog — $16 million in current needs (HVAC, life safety, plumbing and mechanical systems, building envelope, etc.), $13 million in infrastructure and modernization backlog, and $2 million of additional 10-year renewal needs. The building exceeds the ASHRAE Standard 90.1 baseline building system

energy requirements by 34.8 percent, significantly increasing the energy efficiency of the building.

This state-of-the-art engineering research and laboratory building helps to attract and retain high-quality engineering students, contributing to achievement of the university's strategic enrollment goals and strengthening the university's financial position. It also contributes to the region's goals to provide an increased pool of skilled engineers and to increase the number of Michigan residents with a college degree. It also helps to keep our students in the state.

The university continues to fund LED lighting retrofits for interior and exterior spaces and has upgraded controls and select HVAC equipment. All of these projects continue to improve the energy efficiency of the campus. In 2022 and 2023, the university completed LED lighting retrofits with occupancy sensors in twelve buildings (AB, CASL, CIS, FHWC, HPEC, IAVS, ML, NSBS, PEC, SLRC, SSB, RUC). The total project cost of $518,308 was funded from the university's revolving energy fund. The combined projects provide annual savings of $131,000, resulting in a simple payback of 4 years.

e. Where applicable, consider alternatives to new infrastructure, such as distance learning.

UM-Dearborn has been steadfast in its efforts to increase access and availability of distance education courses because it opens up more doors to higher learning for the people we serve. These plans have been significantly impacted and accelerated by the COVID-19 pandemic. Throughout the 2020 academic year, all classes that could be delivered remotely were taught in that manner. Supported by CARES Act funding, the university accelerated upgrades of our information technology infrastructure to support our expansion of distance-learning offerings. In person classes ramped up in Fall 2021 with 56 percent of classes either fully or partially in person. In-person learning continued its post-COVID recovery with 69% of classes taught in person. As part of the Comprehensive Campus Plan, currently in progress, the university is assessing the space and technological support needed for our increasing online/hybrid class options.

Our most recent capital outlay project, the renovation/replacement of the 1959 Engineering Laboratory Building, provides enhanced network capabilities and power resources that support equipment used for lecture capture, which is the primary source of content for College of Engineering and Computer Science distance learning courses.

f. Identify a maintenance schedule for major maintenance items in excess of $1,000,000 for fiscal year 2023 through fiscal year 2027.

Outside of major renovations, the university typically phases major maintenance projects in excess of $500,000. Examples of these types of projects currently in the deferred maintenance backlog include envelope repairs for the Mardigian Library ($602k of $1.5 million complete), and maintenance of the Monteith Parking Structure ($895k of $3.3 million complete). The Schedule for Major Maintenance Items provides the currently planned phasing for these projects as well as other single phase projects. Over the past nine years, the university has committed $21 million to deferred maintenance projects, including $11 million in FY 2023. The university has funded an additional $1 million for deferred maintenance needs in FY 2024.

The university also prioritizes reduction of its deferred maintenance backlog as a standard part of major renovation projects. The renovation of the Natural Sciences Building, built in 1959, was completed in 2016, This project, combined with renovations in the Science Faculty Center and Computing Wing, reduced the university's 2014 deferred maintenance backlog by $28 million. The Engineering Laboratory Building replacement/renovation project, which opened in February 2021, removed another $31 million of deferred maintenance backlog — $16 million in current needs (HVAC, life safety, plumbing and mechanical systems, building envelope, etc.) plus $15 million in infrastructure and modernization backlog.

g. Identify the amount of non-routine maintenance the institution has budgeted for in its current fiscal year and relevant sources of financing.

UM-Dearborn develops a comprehensive non-routine project planning process every year to identify resources and then prioritize the highest impact uses of the available funds. New projects for the current year will total $7 million and include deferred maintenance, space updates, energy efficiency improvements, and renovations. The sources for these funds were made available from $1 million of recurring general fund budget for capital improvements and deferred maintenance projects with the remaining from campus reserves set aside from prior years, State of Michigan ITEM funding, additional debt, and interest income from available balances.