



## **CAPITAL OUTLAY PLAN FY2026- 2030**

**Updated October 31, 2024**

## Table of Contents

I. MISSION STATEMENT .....	4
II. INSTRUCTIONAL PROGRAMMING .....	5
III. STAFFING AND ENROLLMENT .....	38
IV. FACILITY ASSESSMENT .....	41
V. IMPLEMENTATION PLAN .....	47

## Introduction

For over 80 years, Henry Ford College (HFC) has been a leader in providing innovative education focused on student success. Located in Dearborn, Michigan, the school was originally named Fordson Junior College when it opened its doors in 1938. Later, the College adopted the name Dearborn Junior College in 1946. It became Henry Ford Community College in 1952, named after the Henry Ford Trade School which closed and whose assets were transferred to the Dearborn Public Schools Board of Education. In May 2014, the College was renamed Henry Ford College.

Henry Ford College is a comprehensive college providing both two- and four-year degrees. Educational opportunities for students include over 100 career and university transfer programs, pre-professional studies, associate's in science, associate's in applied science, and associate's in arts degrees, associate's in general studies, bachelor's in culinary arts, as well as certificates. The College website contains a complete listing of the over 100 academic programs offered. During the 2022-2023 academic year, HFC served over 16,000 students (unduplicated headcount), which is equivalent to 7,731 full-time students. The average age of HFC students is 23 and 34% attend full time.

Since its founding in 1938, HFC has been the gateway to higher education for thousands of students seeking affordable, high-quality post-secondary education. HFC is a comprehensive public college serving about 12,000 students each fall and winter semester in southeast Michigan. HFC is dedicated to preparing students for a rapidly changing world and workplace by offering more than 100 associate degree career and university transfer programs.

HFC offers high-quality, innovative programs to meet the educational and training needs of the region. Students prepare to transfer to a university or prepare to go directly to work. HFC also specializes in customized workforce development training for business and industry.

HFC offers classes on two campuses situated in Dearborn. HFC's Main Campus is located on the southwest corner of Ford Road and Evergreen, north of the University of Michigan-Dearborn campus. The East Campus is home to HFC's Michigan Technical Education Center (M-TEC) and the state-of-the-art Nursing education facility.

On July 1, 2018, Mr. Russell Kavalhuna assumed the presidency of HFC, succeeding Dr. Stan Jensen who served the College since May 2013.

## I. MISSION STATEMENT

### Mission

Henry Ford College transforms lives and builds better futures by providing outstanding education. As a student-centered, evidence-based college, our success is measured by the success of our students. We empower learners through the development of independent, critical and creative thinking, and we foster diversity, inclusion, understanding, and acceptance to prepare learners to succeed in a global society. We anticipate and respond to the needs of our stakeholders, exceed their expectations and serve the public good.

### Vision

First Choice... Best Choice...

### Values

We have a PASSION for...

- teaching and learning;
- exploring diverse perspectives and ideas;
- creating a student-centered environment;
- transforming lives through continuous learning; and
- excellence in all that we do.

We demonstrate INTEGRITY through...

- accountability;
- responsible stewardship;
- ethical conduct;
- honest dialogue; and
- sustainable practices.

We promote INGENUITY by...

- being agile, flexible, and responsive;
- rewarding discovery, creativity, and innovation;
- collecting, evaluating, and acting on evidence;
- thinking critically; and
- continuously reimagining the future.

We show RESPECT for one another when we...

- collaborate and rely on teamwork;
- celebrate diversity and inclusiveness;
- maintain transparent practices;
- show compassion and empathy; and
- are engaged and committed to our shared work.

## II. INSTRUCTIONAL PROGRAMMING

**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**

Programs being re-designed in the next five years include Associate degrees and certificates in energy technology, electrical engineering technology, cybersecurity, machine tool technology/CNC, automotive technology, and mechatronics. These program improvements require high tech classrooms and laboratories that are supported by a robust technological infrastructure.

### **Henry Ford College Innovation Institute/ Technology Building Renovation and Addition (Completed –December 2023)**

Though HFC has recently successfully completed this project as initially reported and designed, it is being retained here as an extension to acknowledge a new but related project that will repurpose the former Welding Lab to incorporate an EV Battery Lab and Testing Center within the Innovation Institute/Technology Building – a brief overview of which is presented below as an addendum to our original project:

Henry Ford College is both committed and uniquely positioned to prepare Wayne County residents for new and emerging jobs in EV, battery, and automotive technologies as well as many related career pathways in the mobility sector. Working in tandem with leading industry and educational partners as well as regional workforce and economic development agencies, HFC is developing and advancing programs aligned to meet the rapidly changing needs and workforce challenges in these evolving areas. With the shift toward EVs, there will be a growing need for technicians and engineers who can work on electric drivetrains, battery management systems, and EV infrastructure. HFC has developed specialized training programs in electric vehicle (EV) technology, battery systems, and EV maintenance. Newly launched programs lead to certificates or degrees in such related areas as Electric Vehicle Technology, EV Battery Manufacturing, Battery Technician, Energy Management, Data Science, Software Developer, and Software Engineering.

To this end, HFC is extending this project to include designing and equipping an **EV Lab and Battery Testing Center** – a flexible, multi-purpose, interdisciplinary, and collaborative active-learning space where students, faculty, industry partners, and employers can work together to build the technical competencies and skills necessary for successful careers in these emerging fields. The proposed project entails repurposing and renovation of spaces within HFC's Technology Building (E160, E163, E163A, E165, and E166) to create the **EV Lab and Battery Testing Center** with adjoining classroom and storage. The Center will be designed to be flexible for future modification to address trends and advances in industry and technology, incorporating universal design principles and showcasing student learning as a means of increasing awareness of career opportunities in these fields. Space-specific details include but are not limited to the following:

- Renovation and creation of teaching and learning environment to accommodate 24 students, including laboratory and equipment for testing, analyzing and characterizing battery cells, modules, and packs
- Provision of oversized worksurfaces to facilitate collaborative and group-based learning with power and connectivity for computers and testing equipment.

- Upgrade of electrical, HVAC, fire suppression, exhaust, and cooling water systems as necessitated by laboratory, testing, and instructional equipment and to ensure safety

### **Project Purpose:**

Not since the first Model T cars rolled off Henry Ford's original assembly line has America witnessed the magnitude of such a transformation in human mobility as we are witnessing today. The advent of EVs, CAVs and the "smart cities" that will evolve around them will irrevocably change the ways America lives, works, and plays. Just as in Henry Ford's day, we find ourselves today at the quintessential intersection of rapidly emerging technologies and the innovative spirit of entrepreneurship. Science and business have become inseparable partners in "Imagineering" a future world marked by revolutions in manufacturing and industry as well as in the training of the highly skilled workforce necessary to continue to make "made in America" even possible.

Henry Ford College (HFC) is uniquely positioned to prepare today's students to become tomorrow's leaders in this ever-evolving technological arena, especially since the installation of cutting-edge industry-standard equipment made possible through the Community College Skilled Trades Equipment Program (CCSTEP). However, HFC's Technology Building is now over 50 years old. Significant renovation and expansion of the facility are urgently required to support the college's innovative programming and career training, bringing technology and entrepreneurial skills together in meaningful ways that address the changing needs of business and industry in Southeast Michigan.

The building, programming, maintenance, deployment, and business surrounding the development of CAVs will require the interdisciplinary collaboration of automotive technology, electrical engineering technology, energy technology and storage, chemistry, cybersecurity, software engineering, and entrepreneurial studies. Henry Ford College has been a leader in providing high quality educational and training opportunities in all of these fields. But, as HFC knows from its close working relationships with the Ford Motor Company, General Motors, Stellantis (Fiat Chrysler), and many other partners in the manufacturing industry, the jobs of the future will require workers to acquire and master skills that blend, intersect, combine, and juxtapose knowledge and capabilities in any number of these areas. The integration and convergence of these skills require a radical rethinking of teaching and learning within, across and between these disciplines. Such innovations in curriculum and pedagogy, in turn, require the creation of new open, flexible and interactive learning spaces that facilitate collaboration and support both project- and competency-based education.

This project will transform HFC's Technology Building, enabling the college to meet the following objectives:

- Preparing students for successful careers in emerging technologies and skilled trades, especially those related to the industry and business of advanced manufacturing and the automotive field

- Providing talented workers to address the enormous and growing gap between high-tech jobs and the lack of qualified employees to fill them
- Meeting the needs of regional business and industry partners with regard to the “skills gap” between the skills current workers possess and those sought by potential employers
- Facilitating collaboration and interaction between various career, technical education, and business programs to enhance student learning and employability
- Developing and implementing cutting-edge pedagogy by advancing interdisciplinary, project- and competency-based learning
- Creating a “Maker Space” in which students, faculty, industry partners, and entrepreneurs can envision, design, build and test new ideas through hands-on, active-learning experiences
- Housing HFC’s Advanced Manufacturing Early College, creating an effective learning environment for qualified high school students who, in turn, constitute an ongoing pipeline of future skilled talent
- Ensuring that HFC’s Technology Building will be able to continue to support programming needs and student success for the next 50 years.

### **Scope of the Project:**

This project includes renovation of 18,000 square feet of the HFC Technology Building to improve and reconfigure existing laboratories, including spaces not significantly updated in over 50 years. Renovation will also address deferred maintenance on building systems operating well beyond their useful life, including structure, envelope, HVAC, lighting, electrical and plumbing. This project will allow for continued renovations initiated in 2015 as part of the State of Michigan Community College Skilled Trades Equipment Grant (CCSTEP).

Proposed new construction totaling 24,000 square feet will create multidisciplinary labs, renovated automotive labs, the business and entrepreneurial collaboration space needed to support changing programs and curricula, the curriculum required to upgrade alternative energy generation, the regional demand for workforce training, as well as business and industry partnership initiatives. New construction will also improve building and program access and internal circulation, while addressing the lack of breakout/collaborative workspaces critical for student success.

Several of the programs and physical spaces that will be positively impacted by this project include:

1. **Transportation and Automotive Technology.** Working in partnership with the Ford Motor Company Service Division, the Ford ASSET program for training Ford Dealer technicians began at HFC in 1989-90 and is now provided in schools across the country through the Ford Motor Company. In 2016, the department expanded its Dynamometer labs through the State Matching Equipment Grant to offer Dyno Technician certification in partnership with regional R&D Automotive Engineering firms. This project will provide

additional vehicular lab space to continue support of this growing industry-driven program, especially through the emergence of connected autonomous vehicles (CAVs). The programs in Automotive Technology have been the cornerstone of competency-based educational practice at HFC since the early 1960s. The College has also purchased an additional Dynamometer to meet the demands of the program.

2. **HFC Fabrication Lab:** The new Building Science Program and Construction Lab and will join Interior Design, Civil Engineering Technology, and Architecture and Construction in one contiguous SuperLab space. This layout replicates many Design and Construction companies throughout Southeast Michigan, which allows students in programs such as Renewable Energy, Integrated Energy Management training, and Energy Production to work and study as they do in industry.
3. **Product Development Center (“Maker Space”):** Originally designed for communities as prototyping centers for local entrepreneurship, “Maker Spaces” (also known as “Fab Labs”) are increasingly being adopted by schools as centers for project-based, hands-on STEM related education, and by entrepreneurs to explore new business products. Students learn by solving problems through design, the creation of objects and products, and the testing of these ideas by addressing real world problems. A new HFC “Maker Space” will comprise industrial grade design, fabrication, and digital tools to allow students to develop product and concept models. HFC will supplement the original Fab Lab technology (including 3D printers, laser cutters, and other high-quality modeling tools) with larger-scale production equipment that will allow students to build product components in prototype, and test production constraints through programs including CNC production manufacturing.
4. **HFC Advanced Manufacturing Early College:** The groups of students in the Advanced Manufacturing Dual Enrollment program with Dearborn Public Schools and other schools will require additional space, since the program is only in its fourth year. By year six, student on-site participation will increase to 210 students.
5. **Improved Learning Spaces in the Technology Building:** Renovations include much-needed upgrades to at least nine existing classrooms and instructional labs to improve flexibility and connectivity to new and improved hands-on lab environments.

#### **Program Focus of Occupants:**

The renovated and expanded center will support over 3,250 students annually, including those in the college’s 18 programs in Industrial Technology, programs in Computer Science and Computer Information Systems, dual-enrolled high school students in the HFC Advanced Manufacturing Early College, HFC Middle College Trade School, Secondary Education students preparing to enter apprenticeships in Skilled Trades Education, Advanced Manufacturing, and CIS programs that are employees from business and industry.



This program will enable technology and occupational education students to enhance their technological program skills as well as develop product and service ideas for business and industry. New course and certificate program learning outcomes will include: competencies of a successful entrepreneur, prototyping and rapid prototyping skills, developing and understanding intellectual property laws and business practices, 21<sup>st</sup> century business leadership skills, product production analyses, pitching a business to partners, investors and funding, sales and marketing skills, and business sustainability skills.

Technology-rich labs and learning environments will support project and competency-based curricula. In these labs, students develop the middle-level job skills or skills in advanced technology and business essential for the economy. By having access to education through collaborative spaces and open labs, and working on projects defined by industry, students will develop the tools essential for integrating new learning practices to become self-directed learners who are able to achieve their personal and professional goals as well as contribute directly to economic growth and development.

**1. How does the project enhance the core academic and/or research mission of the institution?**

The core academic mission of Henry Ford College is to provide exceptional occupational and transfer education opportunities to our community. Duly acknowledging the rapid speed at which both the business and industry sectors in Southeast Michigan are changing and evolving, Henry Ford College took bold and innovative steps to realign its entire academic structure. The previous traditional, multi-layered, siloed organization had more than 120 independent programs divided into multiple academic divisions that competed with one another for resources and students. The College regrouped academic programs into inter-related clusters within four schools, which are designed to facilitate collaboration, promote interdisciplinary cooperation, create synergies, build connections, and provide learning communities that mirror the real world. These four schools are:

- The School of Science, Technology, Engineering and Math (STEM)
- The School of Business, Entrepreneurship, and Professional Development (BEPD)
- The School of Health and Human Services (HHS)
- The School of Liberal Arts (SOLA)

Due to the growing complexity and higher skill levels industry partners expect of their employees, HFC recognized the need to build bridges between career and technical education with the fundamentals of science and mathematics to best prepare students for jobs in the emerging technologies that continue to redefine our region's economic landscape. The School of STEM was designed to bring together programs, faculty, and students in the fields of physical sciences, biological sciences, math, and pre-engineering. Similarly, the School of Business, Entrepreneurship, and Professional Development provides exciting and practical opportunities to blend computer and information technology, business and

economics, culinary arts and hospitality skills into industrial technology courses. It also brings engineering, cybersecurity, and automotive students together to apply their learning on an industry-standard dynamometer. It unites students in HVAC, energy technology, architecture/construction, and environmental science classes around issues such as green building and sustainability. More significantly, the School of BEPD has brought for-credit training in business together with the College's programming in the workforce and professional development, economic growth and development, corporate college, and pre-apprenticeship.

All of this was undertaken to better align the College's academic offerings with the needs and expectations of business and industry. The realignment advances, reinforces, and supports the College's new, dynamic approach to integrated learning and career preparation.

The Industrial Technology programs at HFC share a joint mission centered upon providing educational experiences to plan, build, fabricate, and maintain the designed world. We offer instruction through hands-on interactive learning, utilizing the most relevant technologies found in working environments. We aspire to develop the mastery of skills that will supply business and industry with competent professionals for a future-driven technological society.

This project will provide critical elements for enhanced student success and mastery of real-world skills through the development of strategic spaces that fit the industry-driven, hands-on, project-based approach to learning. These Strategic Spaces will help students to:

- Take short, project-intensive courses that assure skills mastery and create the foundation for further skills development and greater topical knowledge.
- Give students real-world projects and problems that immediately transfer and apply to the world of work.
- Utilize industry-defined equipment and other advanced simulation-based learning tools.
- Create the opportunity for students to leverage the skills mastered and certifications achieved toward jobs and the creation of new businesses.
- Develop student confidence and technological areas of expertise that will be recognized by business and industry.

The Integrated Manufacturing Systems Troubleshooting Lab is an excellent example of these concepts in action. Students in the Mechatronics associate in applied science degree program work on a complex sequential manufacturing system developed by collaboration with General Motors, Toyota, Ford Motor Company, BMW, and Nissan Motors. It is known as the AMTEC Integrated Manufacturing System (AIMS), and it requires the College lab to have 480V power to run the equipment, as in a typical manufacturing plant. This system replicates the core elements of sequence-based automated manufacturing. Students are given more complex problems or "faults progressively" as projects from their first

course to their final course in the program. Learning how to troubleshoot systems is universally identified by manufacturers as the primary goal for maintenance employees. With this lab tool and curricula, students can troubleshoot and repair more than 80% of the common faults that stop manufacturing systems. Employers give universal praise to this instructional innovation, and they ask us to identify more students for their businesses.

### **Bringing New Product Development and Technology Skill Development Under One Roof**

In looking at the rapid rate of new product development and business start-ups today, it is evident that there are many abundant opportunities and synergies when technology and entrepreneurship intersect. Public educational institutions must accelerate these successful start-ups and create greater access to business development skills for broader segments of our communities.

Higher education is becoming an incubator and accelerator for transferring knowledge and technology among people and organizations. This educational service is known as Transfer of Technology (TOT). Initiatives such as Ann Arbor Spark, Automation Alley, Bizdom, Build Institute, Detroit Creative Corridor (Creative Ventures Program), Green Garage, Oakland University/OU-Inc, TechArb (Ann Arbor/U of M), Tech Brewery, and TechTown are examples of higher-education, business, and industry technology transfer. This project expands TOT capabilities to institutions of applied learning like HFC and other community colleges that may be able to replicate the model.

Schools with the ability to support TOT and business start-ups encourage the creation of new product ideas, business analysis and start-up skills, and refinement of the personal vision of student entrepreneurs. As students achieve certifications in IT, CAD, HVAC, Advanced Manufacturing, Industrial Sewing, Electrical Engineering Technology, or Automotive programs, their potential to envision a future for their own business can emerge.

A few examples of the new products and businesses envisioned by students already include:

- modularized bicycle manufacturing developed in the fabrication capstone projects of the Welding program;
- Internet of Things (IoT) system of interrelated computing devices, mechanical and digital machines, objects, animals, or people that are provided with unique identifiers (UIDs) enabling the transfer data over a network without requiring human-to-human or human-to-computer interaction;
- Automotive and HVAC technicians as start-up service businesses;
- 3-D product designs for automotive applications in the Design and CAD program.

This project generates an “Applied Entrepreneur’s” library of skillsets and templates based on real business tools developed by successful enterprises that “*plan, build, fabricate, and maintain the designed world.*” These skills become the competencies necessary to envision, implement, and evaluate each student’s products, services, and business ideas. The best ideas can then become practical business start-ups and real-world applications of student learning. These experiences challenge students and accelerate their maturity, which is necessary for successful completion of an occupational associate degree or transfer to another educational institution for completion of a bachelor’s degree.

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

This project will continue the renovation and repurposing of the Technology Building as indicated in the [2015 Campus Master Plan](#), updating it to meet the interdisciplinary needs of college programs.

Henry Ford College has significantly invested in this facility and programs as its part of matching the [State of Michigan Skilled Trades Equipment Grant](#). The College committed \$1.2 million as a direct match to the grant to address renovation of the Technology Building space to accommodate the \$4.5 million of equipment for use in advanced manufacturing, mechatronic, and automotive engine testing programs. The State increased the original equipment grant funds by an additional \$480,000 which increased the equipment purchase to \$5 million. To date, the local direct match for the equipment project is over \$1.8 million. In addition to the direct expense match for the grant, an additional \$1.1 million of indirect cost expenditures were committed to the grant which results in a commitment by Henry Ford College of \$2.9 million in this building and its programs.

The College also recently spent over \$480,000 to renovate the welding lab. The renovation includes space/station upgrades, new exhaust and air handling capabilities, and space upgrades to conduct demonstration areas as well as areas for hands-on instruction and training. Major welding equipment was also replaced with 18 multi-purpose welding booths and the development of welding fabrication work areas. The project-based learning strategies, expected to be more materials intensive, have turned out to significantly reduce scrap generation and therefore materials consumption by 15%. This is due to the increase in student awareness of their project work and therefore material use.

- Classroom renovations will create learning environments that meet the needs of a 21<sup>st</sup> century curriculum, with updated, technology and better integration with adjacent lab spaces.
- Support the goals of the Henry Ford College Entrepreneur and Innovation Institute/ Technology Building Renovation and Addition, renovations to existing offices and construction of a center for entrepreneurial support

and development will transform outdated offices into a collaborative hub to better connect students, faculty and employers.

- The new Automotive Lab will connect to the existing, undersized high-bay automotive service lab, and engine testing areas. This will significantly improve the usability of the existing automotive lab and provide students in the industry-driven growing programs improved access to recently updated equipment and tool resources. The connected spaces will better simulate the students' future working environments and meet the training needs of the region's automotive dealerships and automotive Research and Design firms.
- The new Fabrication Lab will connect the existing welding/materials lab, machine tool/CNC manufacturing lab and CAD and Design Studios, transforming these individual spaces into an integrated center for product development, fabrication and manufacturing. Adjacent classrooms and breakout spaces will provide space for mentorship and quick problem solving.

The 2020 Facility Condition Assessment determined the Technology Building has a current replacement value of approximately \$60,599,500 and a 5-year projected deferred maintenance backlog of over \$7,667,000, the majority related to HVAC, electrical and lighting. To reduce maintenance costs, this project will address a portion of the HVAC, electrical, lighting, hardware and finishes identified as due for upgrade or replacement. While many of these systems are at the end of their expected life, the building infrastructure is capable of supporting the improvements with minimal challenge.

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## **Energy Learning Center**

### **Project Purpose:**

Major transformations are underway in the way energy is being used, distributed, and sourced in the USA and globally. A combination of factors drives these changes. There are worldwide efforts to reduce carbon emissions from energy use to limit the effects of climate change. Energy and water systems in Michigan and beyond are being upgraded to improve flexibility and reliability and reduce environmental damage. Technological advances are enabling cleaner, cheaper, and more efficient energy and water use, distribution, and supply choices. Information technology is facilitating the continuous optimization of energy performance from supply to end-use. The result is growing and significant changes to the shape of energy systems in communities, neighborhoods, and industry. They are becoming more deeply integrated along with accelerated localization of clean and renewable energy supplies, including the productive use of energy currently being wasted.

Leadership in industry, commerce, significant institutions, communities, and various

levels of government increasingly understand the opportunities and risks associated with energy use. The need to develop complete energy solutions that deliver breakthrough levels of efficiency, reliability, flexibility and environmental performance at lower day-to-day costs and overall economic risk is growing. The result is an increasing demand for new skills in tomorrow's workforce at all levels, a need that Henry Ford College aims to be uniquely positioned to serve.

Against this backdrop, the leadership of Henry Ford College developed an Integrated Energy Master Plan (IEMP) that represents global best practices in both its energy education and its energy performance in terms of energy efficiency, water efficiency, energy reliability, and reduced greenhouse gas emission, while achieving acceptable investment returns. These operating results will be achieved by substantial investments in control and metering, efficiency, restructured energy supply and distribution, and enhanced energy management. This will create a world-class "Living Classroom" upon which the College will extend its academic offering. The total cost of the project approaches \$40 million with significant reductions in energy usage, increasing student teaching opportunities, and expanding environmental improvements.

The Energy Learning Center will be incorporated in the Tech Building. The Center will be both configured as a teaching facility and be a modern operational facility. It will be designed as a visible statement of the College's energy leadership. The Center will manage and supply competitive, clean, and reliable energy from a portfolio of efficient sources. These include high-efficiency boilers and chillers, thermal storage, combined heat and power generation, along with significant solar power generation.

The College's energy solution combines the latest, proven technologies into a world-class flexible configuration that can evolve with ongoing changes over the coming decades. It will be a complete example of energy and carbon-efficient Smart Community on a small-scale.

The Energy Learning Center and the other elements of the campus as an "Energy Living Classrooms" will enable the College to offer services and education to meet the following objectives:

- Preparing students for careers in management and skilled trades associated with the planning, design, implementation, and operation of world-class integrated energy solutions.
- Providing talented workers to address the growing gap between the need of communities, industry, and other leaders to drive breakthrough improvements in energy performance and the lack of suitably qualified employees.
- Providing talented workers to fill the gap between the needs of local and global industry partners concerning the knowledge and skills gap of current workers and the growing market for integrated energy solutions.
- Providing early engagement and outreach to elementary and high-school students in Dearborn, greater Detroit, and Windsor to raise awareness and open-up energy-related career choices.

- Creating a “Reference Destination” for US and Canadian civic and industrial leaders, policymakers, trade associations, environmental groups, and other key influencers to experience a world-class neighborhood energy solution.
- Creating a flexible technology platform that can evolve as new technical and operating approaches are developed
- Providing the basis for collaboration with selected non-US colleges to ensure a global best-practice perspective is nurtured and maintained.

Creating a pervasive energy productivity culture whereby all staff, faculty, and students have a greater understanding of the importance of proper energy management such that their future personal and business decisions will be influenced.

**Scope of Project:**

The Energy Learning Center (ELC) Project includes the creation of a new energy center on about 7,000 square feet at the southern arc of the Tech Building, created using both repurposed space within the existing building and some external space. This will be designed as an architecturally distinctive, high-visibility campus feature, underlining the transformational approach the College will be taking to energy education. The entire campus energy use and supply will be accessible and controllable from the ELC both for teaching and operational purposes. The ELC will physically include a flexible mix of heating supply components serving the entire campus. These include combined heat and power generation, high-efficiency boilers, and thermal storage. Space will be organized and spaced to facilitate reference visits, teaching, and general engagement. Included in the space will be a dedicated classroom. Throughout the ELC, labeling, graphics, and electronic displays for engagement and teaching will be included.

The Project also includes installing a global-best practice municipal district heating network serving the entire campus using globally recognized (EN) standards for material and installation. This network connects to the ELC and will be used for demonstrating and teaching related to best-practice municipal district energy and be one of few facilities of its kind in the USA or Canada.

Also included in the ELC is the installation of best-practice standardized district energy sub-stations connecting the district heating network to each building. Again, these will be sited such that they are appropriate for demonstration and teaching. They will again be one of the very few examples in North America of the standardized approach used in many other parts of the world.

Strategies to include new district energy networks and local energy supply are increasingly considered in energy and climate plans for North American communities and campuses, in turn creating a demand for a suitably skilled workforce.

Including aspects that are more common in other parts of the world allows the College to serve the education and training needs of a transforming US and Canadian market, including global players looking to expand their North American activities.

The ELC, including the network and sub-stations, replaces existing inefficient boilers and a 60-year-old high-temperature network with customized aging building connections. This will retire significant deferred maintenance and avoid future replacement in a few years.

Included in the project is the overall Integrated Energy Solution managed and taught within the ELC including the upgrading of the cooling supply system and the installation of 700-1,000kW of solar photovoltaic energy generation.

The IEMP's academic focus includes realigned workforce training, technical certification, continuing education certificates, and potentially a new bachelor's degree program. The plan is designed to position the College as the destination for elementary and high-school students in Dearborn, greater Detroit, and Windsor, Ontario, as an innovative resource for raising energy and climate awareness, new career paths, and engaging future College students.

### **Program Focus of Occupants:**

The ELC will facilitate programs aimed at complementing or upgrading the awareness and skills of a wide range of full-time and part-time students, with the underlying goal to ensure adequate human resources are available to support and accelerate the transformations in the energy market.

***Technical Certification*** on crucial elements of the integrated energy system: These would be focused on areas less common in the current US market. These will include:

- Building energy modeling and demand estimation
- Design of DE networks
- Site preparation for installing district energy networks
- Pre-insulated DE pipe welding and inspection
- Installing and commissioning DE sub-stations
- Installation and commissioning of CHP engines
- Multi-utility metering and sub-metering

These programs would serve the employee needs of both local and global industry players looking to expand the US market. The College would finalize the design of these programs in partnership with the relevant industry players.

***Continuing Education*** to enhance the understanding of integrated energy solutions and the approaches needed to evaluate implementation alternatives: These would be eligible for the appropriate professional CEUs but would generally not earn academic credits. Topics would include:

- Integrated Energy Master Planning basic techniques
- Relationship of Energy Master Plans to other municipal/campus plans
- District energy basics
- Optimizing neighborhood energy production and distribution systems
- Neighborhood energy planning for property developers



- Energy Planning for municipal leaders and staff
- Transformational versus incremental energy planning
- Industrial site energy planning
- Community energy planning
- Campus energy planning
- Comparison of global energy practices

These would be focused on students already in roles where new approaches to energy decision making are needed. They would also be appropriate for training sales, marketing, and project managers of industry players entering or operating in this market. They could also be attractive to students in unrelated employment looking to move towards the emerging multi-billion-dollar global market resulting from energy transformation and climate change mitigation.

***Bachelor's degree in Energy Production*** in the context of integrated energy solutions: The IEMP calls for the creation of the College's first bachelor's degree focused on Energy Production balanced between local and regional supply, and between thermal and electrical demands. A vital feature of this degree would be its emphasis on teaching global best practices with an active North American context, facilitated by international institutional and faculty team.

***Education and Outreach to K-12 Schools*** in the Dearborn and neighboring communities: These programs would be aimed at increasing the understanding of energy basics, the risks, and opportunities around the use of energy, to attract a new generation to consider some aspect of the transforming energy market as a career choice. The ELC will be the platform for site visits.

***Hosting Meetings:*** Aimed at institutions, associations, and corporations with a sustainable energy focus. The ELC will be a significant asset to support the campus as a preferred site for regular and ad hoc meetings. The College will structure a program to host such meetings on a professional basis.

**1. How does the project enhance the core academic and/or research mission of the institution?**

The core academic mission of Henry Ford College is to provide exceptional occupational and transfer education opportunities to our community. Duly acknowledging the rapid speed at which both the business and industry sectors in Southeast Michigan are changing and evolving, Henry Ford College took bold and innovative steps to realign its entire academic structure. The previous traditional, multi-layered, siloed organization had more than 120 independent programs divided into multiple academic divisions that competed with one another for resources and students. The College regrouped academic programs into inter-related clusters within four schools, which are designed to facilitate collaboration, promote interdisciplinary cooperation, create synergies, build connections, and provide learning communities that mirror the real world. These four schools are:

- The School of Science, Technology, Engineering and Math (STEM)
- The School of Business, Entrepreneurship and Professional Development (BEPD)
- The School of Health and Human Services (HHS)
- The School of Liberal Arts (SoLA)

Due to the growing complexity and higher skill levels industry partners expect of their employees, HFC recognized the need to build bridges between career and technical education with the fundamentals of science and mathematics to best prepare students for jobs in the emerging technologies that continue to redefine our region's economic landscape. The School of STEM was designed to bring together programs, faculty, and students in the fields of physical sciences, biological sciences, math, and pre-engineering. Similarly, the School of Business, Entrepreneurship, and Professional Development provides exciting and practical opportunities to blend computer and information technology, business and economics, culinary arts and hospitality skills into industrial technology courses. It also brings engineering, cybersecurity, and automotive students together to apply their learning on an industry-standard dynamometer. It unites students in HVAC, energy technology, architecture/construction, and environmental science classes around issues such as green building and sustainability. More significantly, the School of BEPD has brought for-credit training in business together with the College's programming in the workforce and professional development, economic growth and development, corporate college, and pre-apprenticeship. All of this was undertaken to better align the College's academic offerings with the needs and expectations of business and industry. The realignment advances, reinforces, and supports the College's new, dynamic approach to integrated learning and career preparation.

The Industrial Technology programs at HFC share a joint mission centered upon providing educational experiences to plan, build, fabricate, and maintain the designed world. We offer instruction through hands-on interactive learning, utilizing the most relevant technologies found in working environments. We aspire to develop the mastery of skills that will supply business and industry with competent professionals for a future-driven technological society.

The Integrated Manufacturing Systems Troubleshooting Lab is an excellent example of these concepts in action. Students in the Mechatronics associate in applied science degree program work on a complex sequential manufacturing system developed by collaboration with General Motors, Toyota, Ford Motor Company, BMW, and Nissan Motors. It is known as the AMTEC Integrated Manufacturing System (AIMS), and it requires the College lab to have 480V power to run the equipment, as in a typical manufacturing plant. This system replicates the core elements of sequence-based automated manufacturing environment. Students are given more complex problems or "faults progressively" as projects from their first course to their final course in the program. Learning how to troubleshoot systems is universally identified by manufacturers as the primary

goal for maintenance employees. With this lab tool and curricula, students can troubleshoot and repair more than 80% of the common faults that stop manufacturing systems. Employers give universal praise to this instructional innovation, and they ask us to identify more students for their businesses.

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

This project will continue the renovation and repurposing of the Technology Building as indicated in the [Integrated Energy Master Plan \(IEMP\)](#), updating it to meet the interdisciplinary needs of college programs. Henry Ford College has significantly invested in this facility. The College committed over \$26 million as a direct cost to address renovation of the campus energy space with added funds for the technology energy improvements forthcoming to the Technology Building space to accommodate the \$11.5 million of equipment.

The College spent over \$480,000 to renovate the welding lab. The renovation includes space/station upgrades, new exhaust and air handling capabilities, and space upgrades to conduct demonstration areas as well as areas for hands-on instruction and training. Major welding equipment was also replaced with 18 multi-purpose welding booths and the development of welding fabrication work areas. The project-based learning strategies, expected to be more materials intensive, have turned out to significantly reduce scrap generation and therefore materials consumption by 15%. This is due to the increase in student awareness of their project work and therefore material use.

Many of the labs and classrooms in the existing Technology Building, whether in the original 1965 wing or the 1996 addition, were designed for a single use, a single skill, curriculum that is now outdated, and technologies that have changed dramatically over the last 50 years.

- Classroom renovations will create learning environments that meet the needs of a 21<sup>st</sup> century curriculum, with updated, technology and better integration with adjacent lab spaces.
- The new Fabrication Lab will connect the existing welding/materials lab, machine tool/CNC manufacturing lab and CAD and Design Studios, transforming these individual spaces into an integrated center for product development, fabrication and manufacturing. Adjacent classrooms and breakout spaces will provide space for mentorship and quick problem solving.

The 2020 Facility Condition Assessment determined the Technology Building has a current replacement value of approximately \$60,599,500 and a 5-year projected deferred maintenance backlog of over \$7,667,000, the majority related to HVAC, electrical and lighting. To reduce maintenance costs, this project will address a portion of the HVAC, electrical, lighting, hardware and finishes identified as due for upgrade or replacement. While many of these systems are at the end of their expected life, the building infrastructure is capable of supporting the

improvements with minimal challenge.

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## **Southeast Michigan Student Success Center and Liberal Arts Building**

### **Project Purpose:**

The Problem: Michigan ranks in the bottom third of states (34<sup>th</sup> of 50) regarding the percentage of citizens who possess a post-secondary credential. Only 53% of students in Southeast Michigan who embark on the path to a college degree or certificate actually ever graduate and attain one within six years of graduating high school. That number drops to a mere 24% for students who live in the city of Detroit. Furthermore, Michigan possesses the third highest Racial Equity Gap in the nation with respect to the difference in graduation rates between Black and white students. At 21.9%, this disparity in Michigan far exceeds that of states with similar or even larger populations of Black residents across the US (5.4% in New York, 2.9% in Georgia, 2.5% in Florida, and in North Carolina, Black students graduate at a rate 2% higher than their white peers.) Yet now more than ever, successful completion of a college credential (certificate, associate degree, or, increasingly, a bachelor's degree) is the basic requirement for entry into today's regional, national, and global workforces.

Here, however, a second serious gap has emerged – one between the 21<sup>st</sup> century skills deemed most critical by employers and the education traditionally provided by colleges and universities. According to the American Association of Colleges and Universities (AAC&U; 2021):

*Just 62% of employers believe that most or all college graduates possess the knowledge and skills needed to succeed in entry-level positions, and fewer (55%) believe they possess the knowledge and skills required for advancement and promotion. Less than half of employers think college graduates are “very well prepared” in the same skills they view as the most important for success, including the ability to work effectively in teams (48%), critical thinking skills (39%), the ability to analyze and interpret data (41%), and the application of knowledge and skills in real-world settings (39%).*

The Solution: The greater learning community of Southeast Michigan must come together and unite in an intelligent and intentional, collaborative and coordinated, regional solution to these challenges – radically improving the educational level and college credential attainment of our citizens while aligning post-secondary learning with the knowledge and skills most necessary for employment and ongoing success in our rapidly-changing business, technology, and industry sectors. Given the sheer size, scope, and significance of its diverse population and economic drivers, Southeast Michigan's success in these endeavors will be key in propelling and reaching the state's *Sixty by 30* goal: “to increase the number of working-age adults with a skill certificate or college degree from 49% today to 60% by 2030.”

At the present time, no centralized, regionally focused consortium exists in Southeast Michigan to address specifically the major challenges and critical factors impacting student success and the attainment of post-secondary credentials. Neither is there a dedicated location or facility in which the diverse range of support services and initiatives might be concentrated, coordinated, and aligned to maximize student success efforts and improve results. To this end, Henry Ford College proposes the establishment of the **Southeast Michigan Student Success Center (SEMSSC)** on its centrally located and strategically situated campus:

- creating a regional hub for the coordination and advancement of this critical work,
- serving as a catalyst for the identification and implementation of strategic initiatives and promising practices,
- and providing common space in which essential student, academic, and social support services may be brought together with the thought leaders and change agents across sectors of the greater learning community to maximize effectiveness and efficiency while ensuring our collective success.

Per the National Student Clearinghouse, more than half of the students who earn bachelor's degrees from Michigan's four-year colleges and universities previously attended and earned credit from a community college. As such, Henry Ford College is uniquely positioned to lead these efforts in concert with the seven other two-year institutions serving Southeast Michigan: Macomb Community College, Monroe Community College, Oakland Community College, Schoolcraft College, St. Clair County Community College, Washtenaw Community College, and the Wayne County Community College District. Principal partners from among the state's public universities will include Eastern Michigan University, Oakland University, the University of Michigan – Ann Arbor, the University of Michigan – Dearborn, and Wayne State University.

The SEMSSC will also be open to all regional organizations and agencies committed to improving student success, including but not limited to leaders in business, industry, K-12 education, higher education, civic and state government, social services, philanthropy, and economic development. Such leadership is already being demonstrated by the Detroit Regional Chamber, the State of Michigan offices of the Lieutenant Governor and Treasury, the Ralph C. Wilson Jr. Foundation, the Ballmer Group, the Kresge and Mellon foundations, and the Ford Motor Company in partnership with Henry Ford College.

Student success lies at the intersection of:

- 1) relevant, clear, accessible, and achievable academic and career pathways that seamlessly lead to meaningful, sustaining employment and/or advanced educational opportunities, and
- 2) well-defined and well-funded systems of comprehensive, holistic, wrap-around support services that accompany students on every step of their journeys from

college awareness, preparation, admissions, and orientation through goal completion, graduation, transfer, or transition to the working world.

Both will be achieved through the SEMSSC which will facilitate centralized, collaborative, collective approaches to the effective development and implementation of new student success initiatives as well as coordinate joint and combined participation of Southeast Michigan partners in broader student success programs including but not limited to those launched by the Michigan Community College Association (MCAA), the Michigan Center for Student Success (MCSS), the Detroit Drives Degrees Community College Collaborative (D3C3), the Michigan College Access Network (MCAN), and the Michigan Department of Labor & Economic Opportunity (LEO):

- MiReconnect
- Futures for Frontliners
- Detroit Promise
- D3C3 strategies for Student Success, K-12 Alignment, and Mobility Careers
- Michigan Transfer Network
- Michigan Guided Pathways Institute
- Michigan Partnership for Academic Transitions
- College Completion Corps
- College Bound Michigan
- Strengthening MI Workforce Pathways
- Strengthening MI Humanities Pathways
- Right Math @ the Right Time Michigan
- MI-BEST (Michigan Building Economic Stability Today)
- MIStart2Finish
- Developmental education reform
- Reverse Transfer agreements and articulations

In addition, the SEMSSC will serve to:

- Promote innovation and continuous improvement through the collection and sharing of data, benchmarks, predictive analytics, and performance metrics among and between the community colleges and universities in Southeast Michigan,
- Focus on establishing complementary student services initiatives that will lead to comprehensive and cooperative student success programming,
- Facilitate and support learning across and between institutions so that the adoption of proven evidence-based student success initiatives can be accelerated while simultaneously managing resources and costs, and
- Advocate for collective action and policy that enhance and propel collaborative college efforts to improve student success outcomes across the region.

**Scope of the Project:**

Successful realization of this project will entail the design and construction of a new five-story multi-use, multi-purpose facility (approx. 113,750 sf) on the main campus of Henry Ford College to: A) host the Southeast Michigan Student Success Center (floors 1-2; approx. 45,500 sf), and B) replace the aging and inadequate Reuther Liberal Arts Building (floors 3-5; approx. 68,250 sf) which houses those academic and career programs that most directly align with the 21st century skill sets desired by today's employers.

**A) Student Services Scope (SEMSSC):**

As much as an institution is focused on learning, the same emphasis and focus should center on the student service and support system that is crucial to the success of students. This is essential to the students being successful both in the classroom, but also in the greater society as a whole. For example, Henry Ford College recognizes that students have a greater opportunity at being successful if they have a sense of belonging to the institution in which they are studying.

Further, it is crucial that the student services and support systems model the same learning style as proposed by the Academics Scope. That is, we need to engage our students and help them learn to help themselves, while also advocating for themselves. We must offer intuitive services that answer questions and provide support for all students that we serve. We need to take into consideration that a "one-size fits all" model does not work for our student population. For example, those students interested in transferring to a four-year degree program may have different needs, supports, and questions than a student completing their career-focused degree and moving directly into their chosen field. Additionally, adult, or non-traditional students will require different expertise than that of the first-year students. The underserved populations that attend Henry Ford College will present with their own set of unique needs for which we must be prepared to address.

The vision for high-touch services is strong yet must be balanced with a future and forward-thinking model of service delivery. This plan would utilize smart technology such as Hy Flex to meet students where they are. We need to recognize that there is much to be gained by allowing students the opportunity to experience technology in our setting that they will experience in their careers and if they continue their education in the future.

**B) Academics Scope (Liberal Arts):**

Built in 1963, the Reuther Liberal Arts facility (4 floors; 91,018 sf) will turn 60 years old in the coming year. Having served as Henry Ford College's largest and principal teaching and learning facility for nearly six decades, the current structure severely limits the institution's ability to deliver instruction as best meets today's technology-enhanced, learner-centered pedagogical practices. Seriously outdated infrastructure cannot support new or emerging instructional technologies that are radically

transforming and improving both teaching and learning at Henry Ford College. Furthermore, restrictions in the size, number, and distribution of classrooms and learning spaces throughout the building:

- prohibit the college from serving larger student cohorts or accommodating group learning,
- limit seat availability in high-demand courses (resulting in long waitlists or postponing student access adding time and cost to degree completion),
- curb innovative teaching techniques such as active, project, and team-based learning (which generally require larger and more flexible spaces), and
- thwart efforts to promote inter-disciplinary, cross-curricular and co-curricular learning opportunities for students and faculty alike.

These issues will all be addressed and resolved within the academic scope of this proposed project and by meeting the following factors critical to its success (Critical Success Factors).

***Teaching and learning spaces in the SEMSSC and Liberal Arts Building will be:***

- ***Learner-centered/student-focused:*** Learner-centered instruction shifts the focus of activity from the teacher to the learners. Such methods and learning spaces support:
  - Active learning, in which students solve problems, answer questions, formulate questions of their own, discuss, explain, debate, or brainstorm during class
  - Cooperative learning, in which students work in teams on problems and projects under conditions that assure both positive interdependence and individual accountability
  - Inductive teaching and learning, in which students are first presented with challenges and then engage in various methods and strategies to find solutions, including: inquiry-based learning, case-based instruction, problem-based learning, project-based learning, discovery learning, and just-in-time teaching.
- ***Aligned with 21<sup>st</sup> century skills:*** Beyond specific content and context provided at the course and program levels, teaching and learning will be designed and supported so that students acquire what have universally emerged as the three categories of 21<sup>st</sup> century skills necessary for personal and professional success:
  - Learning skills (the four C's):
    - Critical thinking: finding solutions to problems
    - Creative thinking: thinking “outside the box”
    - Collaborating: working with others
    - Communicating: expressing and sharing ideas
  - Literacy skills (IMT):
    - Information literacy: understanding facts, figures, statistics, and data



- Media literacy: understanding the methods and outlets in which information is disseminated
  - Technology literacy: understanding and using the tools that drive today's Information Age
- Life skills (FLIPS):
  - Flexibility: adjusting and deviating from plans as needed
  - Leadership: motivating teams to accomplish its goals
  - Initiative: starting projects, strategies and plans on one's own
  - Productivity: maintaining efficiency in an age of distraction
  - Social skills: meeting and networking with others for mutual benefit
- **Collaborative:** Create spaces and synergies that foster and encourage opportunities for students to interact and work together with one another as well as with their instructors in both formal and informal settings both within and beyond the walls of the classroom. This includes soft “touch down” spaces with access to supportive technology where learners can exchange ideas between classes, work on team projects, prepare group presentations, engage with instructors, and support one another.
- **Smart:** Transform and equip classrooms with integrated state-of-the-art technologies that enhance and improve both teaching and learning while reinforcing the development and application of 21st century skills as identified above. Promote and support emerging pedagogies as well as changing learning styles and preferences such as Hyflex course delivery, lecture capture, interactive and remote learning, computer-assisted collaboration and knowledge sharing while improving and ensuring accessibility for all learners.
- **Flexible and future-ready:** Design, furnish, and equip classroom spaces to facilitate reconfiguration and adaptability as best encourages and accommodates multiple teaching and learning styles while remaining capable of adopting and implementing new instructional technologies and pedagogical practices as they continue to emerge in higher education.

In its 2021 report *How College Contributes to Workforce Success: Employer Views on What Matters Most*, the AAC&U found “that employers and educators are largely in agreement when it comes to the value of a contemporary liberal education.” Conducted and compiled by Hanover Research, the AAC&U employer survey indicated that there was:

*...substantial support among employers for the outcomes and experiences of a liberal education and makes it clear that a liberally educated graduate is strongly positioned for success in the job market. Nine in ten employers believe that it is important to achieve the learning outcomes that define a contemporary liberal education, for example, and that it is worthwhile to obtain a college degree.*

Responses showed that employers think a college education should “provide both broad depth of learning and prepare future employees to think for themselves, adapt

to problems, and have the technical knowledge necessary for their new roles.” The majority of employers shared a desire to hire individuals with a broad range of knowledge and skill sets, rather than focusing on those who have mastered more specialized, field-specific, occupational, task-oriented skills.

Employers most frequently identified critical thinking, written and verbal communication, applying learning in real-world settings, leadership, creative problem-solving, data analysis and interpretation, teamwork, and flexibility as the skills most necessary and desirable for future employees. These areas not only complement and align with the 21<sup>st</sup> century skills listed above, but they have long served as the fundamental objectives and learning outcomes acquired through studies in the Liberal Arts. It is precisely for this reason that the scope of this project includes establishing a new and improved learning facility to house HFC’s School of Liberal Arts – positioning it contiguously, strategically, and synergistically with the SEMSSC to maximize and ensure student success. [See the section below regarding “Program Focus of Occupants – B. Academics” for more detailed information regarding departments and programs that constitute the School of Liberal Arts.]

#### **Program Focus of Occupants:**

##### **A) Student Services (SEMSSC):**

The success of students is as good as the effort put into it. To that end, we must offer student support and services through different modalities, meeting the student where they are at, which includes virtual, in-person, and a hybrid-version of services and support. When in person, the services need to be in one physical area, where different areas of higher education expertise can collaborate with each other to provide the best possible support and service for students. Currently, these services are located across the campus, in three different buildings. This results in students having to restate their situations, sometimes very personal stories, repeatedly. This is a great cause of embarrassment and frustration. There are also times that students will forego a service to attend class or miss a class to take care of a support or service need. There are also other supports, external to Henry Ford College that are required by our students. This can be support for housing and food insecurities, as well as transportation, child or elder-care and other wrap-around services, that if not fulfilled, become a barrier to success.

Our vision is that within the SEMSSC, we will offer support and services that embrace everything from “A to Z”, with the “A” meaning Admissions to “Z”, meaning completion/graduation and beyond, which includes support to our alumni members and assistance with continuing education and professional development. This would include bringing together services such as Admissions and Recruiting, Student Success Teams, a robust Academic Advising and Counseling Center that would also include the work of a Transfer Center and a restructured Career Services Office designed to not only meet the needs of students, but also that of business and industry.

Reiterating a concept mentioned earlier, students perform better and are more successful when they feel connected and that they have a sense of belonging. This means that space for key student mentoring programs will be essential. This includes an overall Student Mentoring Program, the work of the Detroit Promise Coaches, the work of the Black Males and QUEENS Focus Group, the College Completion Coaches and the work that is produced through the faculty/student mentor and advising system.

The additional need to bring together teams that collaborate on Student Financial Aid, Emergency Student Aid Programs, Student Accounts and Payment Plans is also important. This will allow the teams to partner to best assist students to be sure we are providing financial literacy information and allowing them to attend college with greater financial awareness, focused on minimizing the amount of debt that they incur. Studies also reflect that when students do not have to worry about their educational finances, that they perform better academically.

Lastly, with a continued focus on the retention and completion aspects of the College's Strategic Plan, the Registrar's Office would ideally be housed in this same location to provide students, coaches, mentors and advisors with real-time information that would identify those students close to graduation so that just-in-time outreach could be accomplished to ensure that the students cross the finish line and graduate/complete.

#### **B) Academics (Liberal Arts):**

The School of Liberal Arts consists of seven academic departments, each comprised of interrelated programs of study:

- Communication & Media Arts: Telecommunications, Speech, Journalism
- English: Composition and Literature
- Fine & Performing Arts: Studio Art, Art History, Digital & Graphic Arts, Ceramics, Music, and Theatre
- Honors: Honors Program and Phi Theta Kappa Honors Society
- Humanities: Arab Cultural Studies, Humanities, Philosophy, Religious Studies
- Language Studies: English Language Institute (ELI), World Languages (Arabic, Chinese, French, German, Italian, Spanish), American Sign Language
- Social Sciences: Anthropology, Criminal Justice, Geography, History, Political Science, Psychology, Sociology

By design and to facilitate cross-disciplinary connections, the Business and Economics Department (an academic unit within HFC's School of Business, Entrepreneurship and Professional Development) has been and will continue to be in part housed alongside these programs in the Liberal Arts Building:

- Business and Economics: Accounting, Business Administration, Business Computer Applications, Economics, Management, and Paralegal Studies

At the start of the Fall 2022 semester, 2141 students were actively pursuing associate

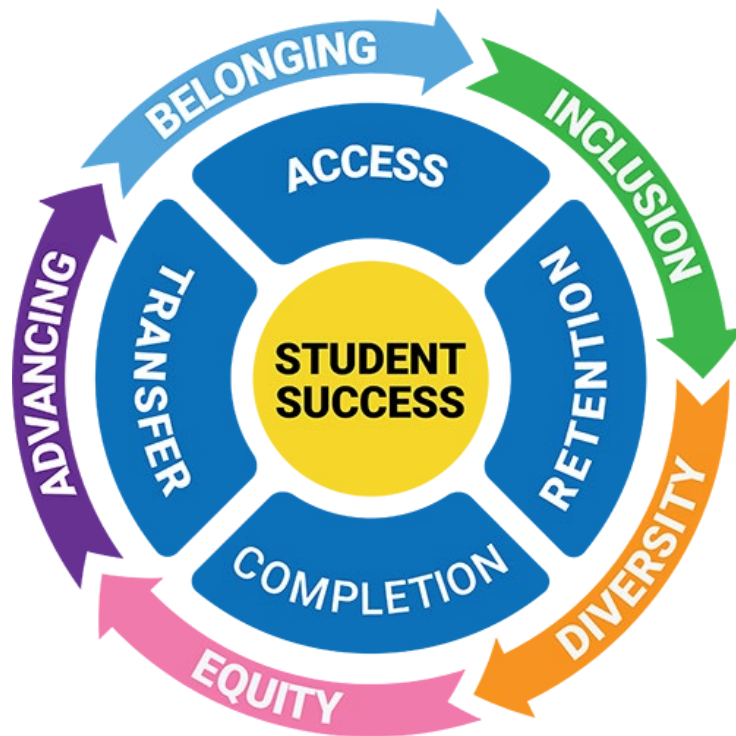
degrees (AA, AAA, AFA, AGS) in Liberal Arts programs at HFC. A further 1,183 students were actively pursuing Associate in Business (AB) degrees, and an additional 129 students were enrolled in the limited number of related one-year certificate programs. To those pursuing degrees in these areas, one must add the large number of students who enroll in Liberal Arts courses to satisfy requirements associated with General Education, HFC's Institutional Learning Outcomes (ILOs), and/or the statewide Michigan Transfer Agreement. A combined total of 12,307 students enrolled in 684 sections of Liberal Arts courses during the Fall 2022 semester alone. These numbers are anticipated to increase in the next academic year with the institution of recent revisions and improvements to academic and career pathways across the college.

In addition to providing new and improved learning spaces for the study of the Liberal Arts and Business at HFC, the proposed project will also include and incorporate space for several key academic support services relevant to these areas:

- *Writing Center*: A hub for exploring, developing, and enacting writing, the Writing Center is a collaborative and relational space where writers, readers, and texts can coexist and get to know each other. Open to any writer, at any level, at any stage of the writing process, the Writing Center provides support for writers as they think through their writing goals, approaches, and products. Faculty tutors in the Writing Center work with writers to provide them with a fuller understanding of the academic, social, and cultural effects of writing.
- *English Language Institute*: The mission of the English Language Institute at HFC is to foster a cooperative learning environment that supports English Language Learners as they strive to reach their academic, personal, and professional language goals in a culturally diverse and internationally based community.
- *Black Male and QUEENS Focus Group*: The Black Male and QUEENS (Quintessential Unique Essence of Ebony Necessary Sisters) Focus Group challenges and changes the accepted narrative regarding Black academic success. Open to all HFC students, the Focus Group engages with the experiences of Black women and men worldwide while building leadership skills. Students are exposed to opportunities within and outside HFC to help them academically and professionally. The Focus Group provides assistance in navigating HFC and connecting students with campus resources.
- *Henry Ford II Honors Program*: Honors students at Henry Ford College are challenged to excel academically as they develop their skills in composition, speech, independent research, and critical thinking. Honors Program faculty mentor and guide students to explore their intellectual interests and potential in many areas. Students work together actively. Faculty members take an active role in assisting students in transferring to four-year transfer institutions of their choice, including applying for transfer scholarships.

**1. How does the project enhance the core academic and/or research mission of the institution?**

This project – establishment of the **Southeast Michigan Student Success Center (SEMSSC)** and adjoining **Liberal Arts Building** at Henry Ford College – aligns with and serves to advance the bold, new strategic plan recently launched by HFC in January 2022. *Strategic Plan 2022-2024* centers upon the radical improvement of student success for all HFC learners. It embraces four Strategic Priorities (improving success rates and student performance with respect to Access, Retention, Completion, and Transfer), each of which is further defined by a pair of targeted Goals:



#### Strategic Priority 1: ACCESS

HFC will increase enrollment and improve college readiness especially for underrepresented and historically underserved student populations.

**Goal 1:** Increase enrollment of Black/African American students by 25% and double the enrollment of Hispanic students within two years.

**Goal 2:** Increase enrollment of underrepresented student populations in programs leading to high-opportunity outcomes, especially in STEAM, Health Sciences, and the Skilled Trades.

#### Strategic Priority 2: RETENTION

HFC will achieve improved and equitable retention rates for all students through proactive, student-focused supports and intervention programs.

**Goal 1:** Increase the percentage of first-time, full-time students who earn 24+ credits in their first year from 52% to 60% and increase the rate of part-time students who earn 15+ credits in their first year from 10% to 25%.

**Goal 2:** Decrease the percentage of Ds, Es, Withdraws, and Incompletes (DEWI rates) in college-level gateway courses by 15% across all student populations.

### Strategic Priority 3: COMPLETION

HFC will increase credential attainment and close completion equity gaps across all student populations.

**Goal 1:** Increase the total number of certificates and degrees awarded by 20% over two years while raising the institutional Graduation Rate towards 15%.

**Goal 2:** Reduce time to credential attainment while decreasing the overall number of excess credits students complete by 20%.

### Strategic Priority 4: TRANSFER

HFC will achieve improved and equitable results for all students regarding successful and seamless transfer to either advanced study or a career.

**Goal 1:** Increase the number of transfers to 4-year colleges and universities within three years of starting at HFC by 20%.

**Goal 2:** Increase the percentage of students completing an Associate degree or other credential at HFC before transferring to another 4-year college or university from 35% to 45%.

Achievement of these strategic priorities and goals will directly and positively impact those broader regional and state-wide initiatives outlined above in the “Project Purpose” statement – most notably:

- improving the educational level and college credential attainment of our citizens in Southeast Michigan, especially for students lining in the city of Detroit,
- closing the Racial Equity Gap in graduation rates between Black and white students in our Southeast Michigan community colleges and universities,
- increasing the percentage of Michigan’s working-age adults with a skill certificate or college degree to 60% by 2030 (*Sixty by 30*),
- providing comprehensive, holistic, wrap-around support services to improve student success on every step of their journeys through goal completion, graduation, transfer, or transition to the working world, and
- aligning post-secondary learning with the 21<sup>st</sup> century skills most necessary for employment and ongoing success in our rapidly changing business, technology, and industry sectors.

HFC’s *Strategic Plan 2022-2024* is framed by a strategic and cultural foundation for student success identified as Advancing Belonging Inclusion Diversity and Equity

(ABIDE):

*At Henry Ford College “our success is measured by the success of our students” – and that means ALL of our students! An open-access educational community, Henry Ford College strives to provide a welcoming and safe place that ALL learners may call home. We seek to close ALL achievement and equity gaps wherever they exist. We embrace and work collaboratively to advance a culture celebrating and centered on belonging, inclusion, diversity, and equity. These are our shared strengths. They inform and propel our efforts to improve both the educational and economic outlook for Southeast Michigan.*

This is also echoed by the following statement from HFC’s Mission:

*We empower learners through the development of independent, critical and creative thinking, and we foster diversity, inclusion, understanding, and acceptance to prepare learners to succeed in a global society.*

Here, too, we see direct alignment with the goals and objectives that will drive the work of the proposed Southeast Michigan Student Success Center (SEMSSC).

Furthermore, both HFC’s strategic plan and the purpose of this proposed project align with the vision of the Detroit Drives Degrees Community College Collaborative (D3C3) sponsored through the Detroit Regional Chamber in conjunction with the Ralph C. Wilson Jr. Foundation and the Ballmer Group: *to reduce the regional equity gap by half while driving progress towards the education attainment goal of 60 X 30, leading to high-quality jobs with family-sustaining wages for those who call the Detroit region home.* D3C3 strives to meet the following outcomes:

- improved student outcomes and reduced equity gaps (e.g., graduation, persistence, job placement, and transfer rates),
- college-level systems change centering on student success,
- deepened regional collaboration between colleges in Southeast Michigan,
- more timely, transparent, and complete college data,
- unlocked public funding to sustain and grow student success, and
- effective implementation of Detroit Drives Degrees.

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

As stated previously, successful realization of this project will entail the design and construction of a new five-story multi-use, multi-purpose facility on the main campus of Henry Ford College to: A) host the Southeast Michigan Student Success Center, and B) replace the aging and inadequate Reuther Liberal Arts Building which houses those academic and career programs that most directly align with the 21<sup>st</sup> century skill sets desired by today’s employers. As this is a “new build” project, it will not directly support investment in or adaptive re-purposing of existing facilities and infrastructure. Nevertheless, HFC does see future potential

in perhaps a separate but related project that might focus on renovating and repurposing the existing Reuther Liberal Arts Building (Building K) to accommodate needs and activities related to some or all of the following:

- Hosting conferences and larger events on the HFC campus, possibly generating revenue from rental fees and services
- Providing space to house and expand campus life activities, student clubs and organizations, and student government, and the Hawk's Nest (food pantry)
- Offering a greatly expanded Quiet Reflection Room for the use of students, faculty, and staff, better serving the needs of our diverse student body and their many expressions of faith
- Providing office, collaboration, and student conferencing space and services for our large body of adjunct faculty members (500+), facilitating greater interaction with and availability for their students both before and after classes
- Dedicating soft "touch down" spaces and lounges for use by students when not otherwise engaged in class, promoting a collaborative learning environment beyond the classroom and lab
- Housing the Center for Teaching Excellence and Innovation (CTEI), expanding facilities to accommodate growing professional development opportunities and fostering faculty engagement in the improvement of teaching and learning
- Providing larger technology-enhanced lecture spaces for sharing scholarly and cultural presentations, facilitating civic engagement activities, and hosting professional meetings or gatherings

**b. The unique characteristics of HFC's academic mission include:**

- **Over 45 associate degree programs and more than 80 certificate programs in career and technical fields.**
- **More than 30 associate degree programs and 300+ articulation agreements** designed to serve students with **seamless transfer** to 4-year colleges and universities.
- HFC hosts **three early college/dual enrollment academies on its Main Campus:** 1) a Health Careers Early College (a collaboration with Dearborn Public Schools and Henry Ford Health Systems); 2) an Advanced Manufacturing Early College (in collaboration with Dearborn Public Schools and Ford Motor Company's Next Generation Learning initiative); and 3) a Pre-Education program (designed in collaboration with Dearborn Public Schools to address the looming teacher shortage in the Southeast Michigan region). **HFC's MTEC is also home to a Middle College Trade School** providing career and technical training for a consortium of dual-enrolled high school students in an array of professional fields.
- A strong connection to **over 50 local school districts. HFC serves more dual-**



**enrollment students than any other 2- or 4-year institution of higher learning in the state of Michigan.** Dual enrollment and career exploration opportunities are available to high school students to help prepare them for post-secondary education and the world of work including the Downriver Career Technical Consortium, Advanced Technology Academy, and Detroit Public Schools Community District.

- **Articulation agreements** with Oakland University, Eastern Michigan University, Ferris State University, Madonna University, Siena Heights College, University of Michigan-Ann Arbor, University of Michigan-Dearborn, University of Detroit Mercy, Midwestern University-Chicago, and Wayne State University ensure transfer students experience a seamless transition to these colleges and universities.
- **Workforce development training** including customized on-site training for many regional organizations such as UAW Ford, Fiat Chrysler Automotive, AK Steel, and Infrasource. Working with a consortium of colleges, HFC assisted with the development of the **MS-AMC performance-based objectives for trade and apprentice education.**
- HFC was awarded a **Department of Labor grant** to develop a new learning paradigm that integrates competency-based learning into training and educational modules to enhance employee training programs for companies and colleges.
- **HFC is home to the state's largest population of Detroit Promise students.** In collaboration with the **Detroit Scholarship Fund (DSF)**, HFC has implemented effective retention and success initiatives to improve completion rates and the attainment of college credentials for students across the region's diverse learning community.
- The Office of **Military and Veterans Services** offers assistance to help veterans as well as active military and their families enroll and succeed at HFC.
- **Assisted Learning Services** provides accommodations to students with disabilities through a number of support services. A Center for Teaching Excellence and Innovation for teacher development.
- HFC's radio station, **WHFR 89.3**, provides a real-world lab experience in telecommunication for HFCC students, to serve the needs of Dearborn and the surrounding communities.
- An **English Language Institute** that offers intensive preparation in English for English Language Learners, allowing them to move directly into college-level academic programs.
- HFC has designed new accelerated and co-requisite pathways to **facilitate remediation and successful transition to college-level coursework** in English (Writing, Reading) and Mathematics
- A **Center for Teaching Excellence and Innovation** for professional development of faculty and the continuous improvement of teaching and learning at HFC.
- **Community engagement** including plays and concerts, hosting fund-raising activities for scholarships, open lecture and film series, conference and convention facilities, and dining facilities.

### c. Identify other initiatives which may impact facilities usage

Stemming from the HFC Strategic Plan, the following objectives will affect facilities usage:

1. Develop new and revise existing programs to meet the expectations of the workforce including flexible, **innovative manufacturing education environments**.
2. Obtained a \$5 million equipment grant from the State of Michigan which includes a \$1.2million facility renovation investment to accommodate the equipment for program delivery.
3. Create and expand local, regional, national and international partnerships and collaborations with business, governmental, non-profit, and educational institutions to create a **global institution**.
4. Develop and deliver **technology** training based on the assessed needs of students, faculty, and staff.
5. Ensure that the College's physical facilities, equipment, and technological **infrastructure** support fulfillment of the College's mission.
6. Promote **sustainability** and environmentally sound policy in facilities resource planning.

In June 2017, the College initiated a project to develop an Integrated Energy Master Plan (IEMP) which when combined with the College's Facility Master Plan will provide an integrated approach to renovate facilities that meet "World Class" energy performance standards.

The Integrated Energy Master Plan Scope and Design (IEMP) was completed in March 2018 and is aimed at ensuring the College has world-class energy performance in terms of energy reliability, energy efficiency, greenhouse gas emissions and energy cost. This is a transformative plan aimed at reducing the energy and emissions footprint of the College by at least 60% to bring it in line with the global best practices. The targets for the IEMP were guided by US, Canadian and European benchmark institutions. (Details in Appendix B)

An equally important goal of the IEMP will be to create new academic offerings including new courses, apprenticeships and internships. For this reason, the IEMP is co-sponsored by the VP of Finance & Administration and the VP Academic Affairs. In support of this aspect of the IEMP, the College Campus will be consciously configured as a "Living Classroom" to serve both the academic and operational aspects of the IEMP. The project has an investment of over \$23 million and had a projected payback of 12 years with performance guarantees established in the construction contract. Additional investment of over \$11 million will be committed to enhance green energy, cogeneration, and solar energy capture.

**d. Demonstrate economic development impact of current/future programs**

The 2023 study conducted by Lightcast, Figure 1, provides data strongly supporting the fact that the College has a significant impact in promoting economic development, enhancing students' careers, and improving quality of life.

## The Economic Value of Henry Ford College

Henry Ford College (HFC) creates a significant positive impact on the business community and generates a return on investment to its major stakeholder groups—students, taxpayers, and society. Using a two-pronged approach that involves an economic impact analysis and an investment analysis, this study calculates the benefits received by each of these groups. Results of the analysis reflect fiscal year (FY) 2020-21.

### Economic impact analysis

In FY 2020-21, HFC added **\$1.4 billion** in income to the HFC Service Area<sup>1</sup> economy, a value approximately equal to **0.5%** of the region's total gross regional product (GRP). Expressed in terms of jobs, HFC's impact supported **16,487 jobs** in the HFC Service Area.

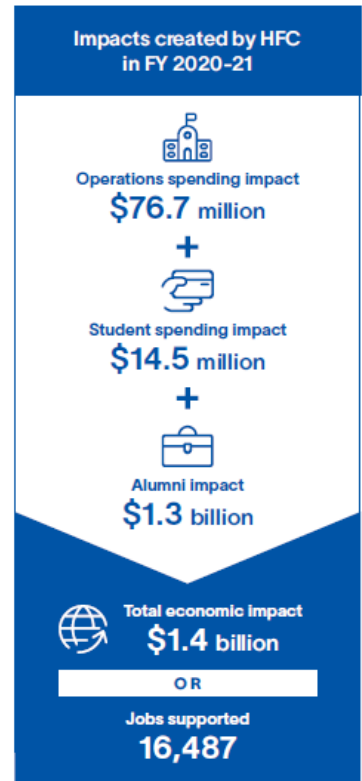
#### Operations spending Impact

- HFC employed 1,324 full-time and part-time faculty and staff. Payroll amounted to \$72.6 million, much of which was spent in the region for groceries, mortgage and rent payments, dining out, and other household expenses. The college spent another \$10.1 million on day-to-day expenses related to facilities, supplies, and professional services.
- The net impact of the college's operations spending added **\$76.7 million** in income to the regional economy in FY 2020-21.

#### Student spending Impact

- Some in-region students, referred to as retained students, would have left the HFC Service Area for other educational opportunities if not for HFC. These retained

<sup>1</sup> For the purposes of this analysis, the HFC Service Area is comprised of Macomb, Monroe, Oakland, Washtenaw, and Wayne Counties.



students spent money on groceries, mortgage and rent payments, and other living expenses at regional businesses.

- The expenditures of retained students in FY 2020-21 added **\$14.5 million** in income to the HFC Service Area economy.

#### Alumni impact

- Over the years, students have studied at HFC and entered or re-entered the workforce with newly-acquired knowledge and skills. Today, hundreds of thousands of these former students are employed in the HFC Service Area.
- The net impact of HFC's former students currently employed in the regional workforce amounted to **\$1.3 billion** in added income in FY 2020-21.

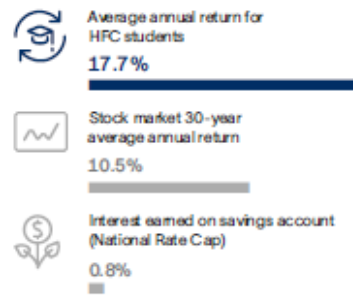


## Investment analysis

#### Student perspective

- HFC's FY 2020-21 students paid a present value of **\$58.6 million** to cover the cost of tuition, fees, supplies, and interest on student loans. They also forewent **\$53 million** in money that they would have earned had they been working instead of attending college.
- In return for their investment, students will receive a cumulative present value **\$580.3 million** in increased earnings over their working lives. This translates to a return of **\$5.20** in higher future earnings for every dollar students invest in their education. Students' average annual rate of return is **17.7%**.

Students see a high rate of return for their investment in HFC



Source: Forbes' S&P 500, 1992-2021; FDIC.gov, 2-2022.

#### Taxpayer perspective

- Taxpayers provided HFC with **\$47.8 million** of funding in FY 2020-21. In return, they will benefit from added tax revenue, stemming from students' higher lifetime earnings and increased business output, amounting to **\$226.3 million**. A reduced demand for government-funded services in Michigan will add another **\$17.6 million** in benefits to taxpayers.
- For every dollar of public money invested in HFC, taxpayers will receive **\$5.10** in return, over the course of students' working lives. The average annual rate of return for taxpayers is **10.9%**.

#### Social perspective

- In FY 2020-21, Michigan invested **\$149 million** to support HFC. In turn, the Michigan economy will grow by **\$2.6 billion**, over the course of students' working lives. Society will also benefit from **\$49.4 million** of public and private sector savings.
- For every dollar invested in HFC in FY 2020-21, people in Michigan will receive **\$17.90** in return, for as long as HFC's FY 2020-21 students remain active in the state workforce.



### III. STAFFING AND ENROLLMENT

**a. Describe current full and part-time student enrollment levels by academic program and define how the programs is accessed by the student**

In-district enrollments (serving the City of Dearborn and parts of Dearborn Heights) comprise approximately 42% of the unduplicated headcount. Out-of-district enrollments represent approximately 58% of overall enrollment.

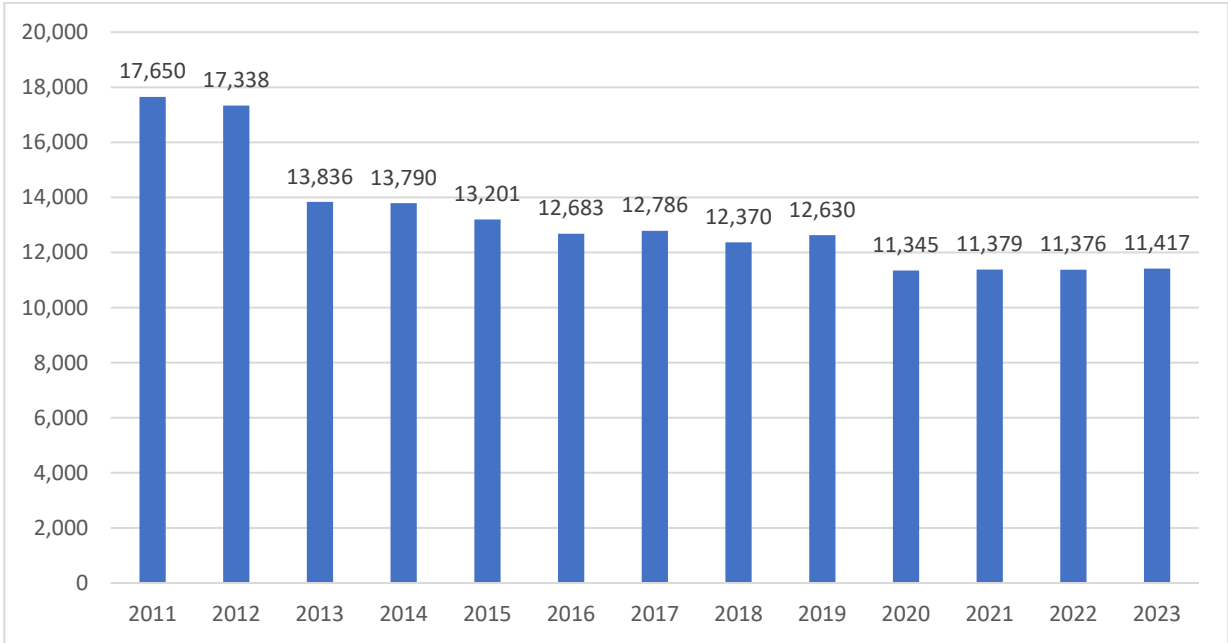
The majority of academic programs are accessed through on-campus instruction at the main campus. However, online class participation has settled at levels lower than that experienced during 2020 and 2021 of approximately 50% of educational delivery. The nursing program is located at the East Campus. During COVID, 100% online courses increased and accounted for approximately 62% of sections offered (37% asynchronous, 25% live with instructor), hybrid courses accounted for approximately 15% of offered sections, and on-campus courses account for 23% of sections offered.

Training programs for business and industry are provided either at the worksite or at the M-TEC facility on east campus.

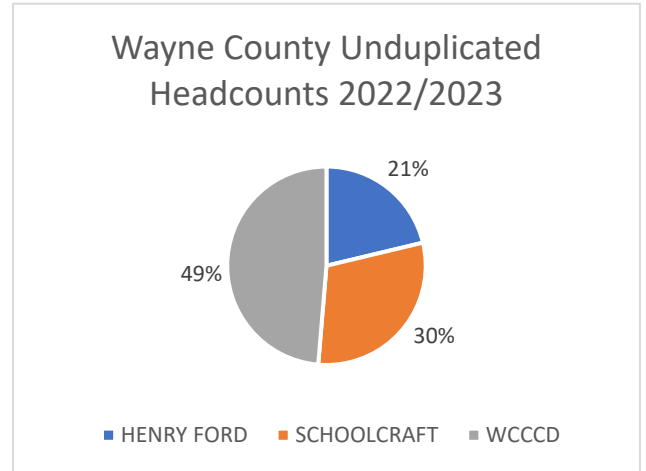
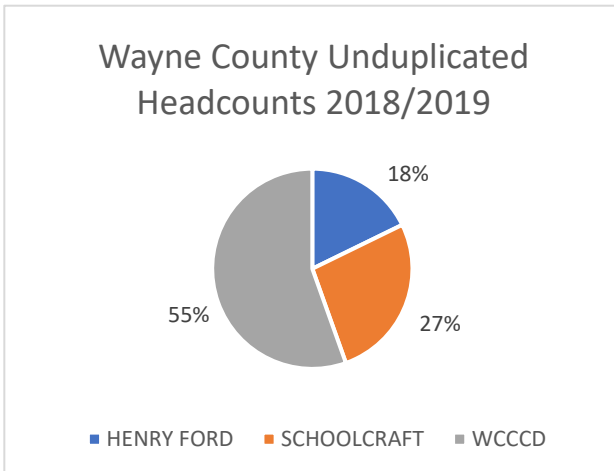
**b. Enrollment Patterns over the last five years & projected enrollment pattern for the next five years**

Following several years of enrollment declines that matched state-wide trends, HFC experienced an increase in enrollment in 2019. While the momentum was not sustained during the pandemic, enrollment has begun to rebound with a 1.4% increase in headcount for Fall 2023 and a 2.3% increase in headcount for Fall 2024. Increases in total number of credit hours has been even greater (2% increase in Fall 2023 and 3.8% increase in Fall 2024), indicating that students are enrolling in more credit hours than they were in previous years. Table 1 below illustrates Fall HFC enrollment over the period of 2011 – 2023.

**TABLE 1**  
**HFC FALL ENROLLMENT, 2011-2023**  
 AS REPORTED TO IPEDS



Even during years of declining enrollment, Henry Ford College has been increasing its market share, most notably over the last five years. This shift can be seen most markedly in Wayne County where Henry Ford College has increased its unduplicated headcount market share among the three community colleges by nearly 20%. For context, total Wayne County headcounts across the three institutions were 102,006 in total in 2018-2019, dropping to 75,420 in 2022-2023 (26% overall decrease).



HFC attributes this increase in market share to breaking new ground in meeting the needs of students in terms of customer satisfaction as well as degree completion. Agreements with transfer colleges and universities, training and retraining programs, and an emphasis on distance education will be a few of the strategies used to grow

and create new programs and services. Programs will be made more accessible by offering more flexible scheduling of classes, including weekend College programs, and by offering more courses and ultimately programs on-line.

Despite the previously-experienced decline in enrollment due to the strength of the economy and COVID 19, HFC is making significant efforts to mitigate future decreases by increasing marketing and recruitment efforts, and revising policies and procedures to enhance the student experience at HFC, including efforts to ensure posted class offerings will be provided. The College forecasts an annual .5% increase in enrollment over the next five years.

An emphasis on recruitment and retention efforts will remain strong and environmental scanning efforts will ensure that the College continues to offer programs that meet the needs of students and the community.

The College has expanded its presence in Early College programs to where over 20% of the teaching is done on campus for K-12 students.

**c. Provide instructional staff/student and administrative staff/student ratios for major academic programs**

In the nursing program, the faculty to student ratio is about 1:25 and the administrative staff to student ratio is about 1:91. For the health careers programs, the faculty to student ratio is about 1:17 and the administrative staff to student ratio is about 1:16. In the computer information systems program, the faculty to student ratio is about 1:20 and the administrative staff to student ratio is about 1:152.

**d. Project future staffing needs based on five-year enrollment estimates and future programming**

Based on enrollment projections, it is estimated that the total number of adjunct faculty will shrink as the total number of sections declines in certain areas. However, with the addition of new programs, it will be necessary to continue to attract highly qualified full-time faculty in high demand areas including culinary arts, manufacturing, alternative energy and health careers. Retirements in some areas allow for the vacancies to be utilized in areas where students demand has increased.

**e. Identify current average class size and projected average class size based on institution's mission and planned programmatic needs**

It is the policy of the College that the minimum class size is fifteen students. The average class size is twenty students. This, of course, varies according to the nature of the program or type of course. For example, it is appropriate that certain types of general education courses seat thirty students per section. However, more difficult courses or technical



courses that require particular labs are appropriately run with fewer students. At times, a class of less than fifteen students is offered if a group of students need a course during a particular semester in order to graduate.

No change is projected to this policy or average class size. It is the mission of the community college, in general, and Henry Ford College, in particular, to offer small class sizes. This aspect differentiates the community college from the four-year university where a class size of 100 is not unusual. Henry Ford College students are provided more individual attention from faculty and support services.

#### IV. Facility Assessment

**A professionally developed comprehensive facilities assessment is required.**

Henry Ford College engaged Stantec, Inc. (formerly SHW) to facilitate the Master Facilities Planning process, which included a facility assessment, utilization plan, and updated master plan. This initiative supports HFC's mission and strategic plan by ensuring the College provides an outstanding environment in which to deliver high-quality academic programs.

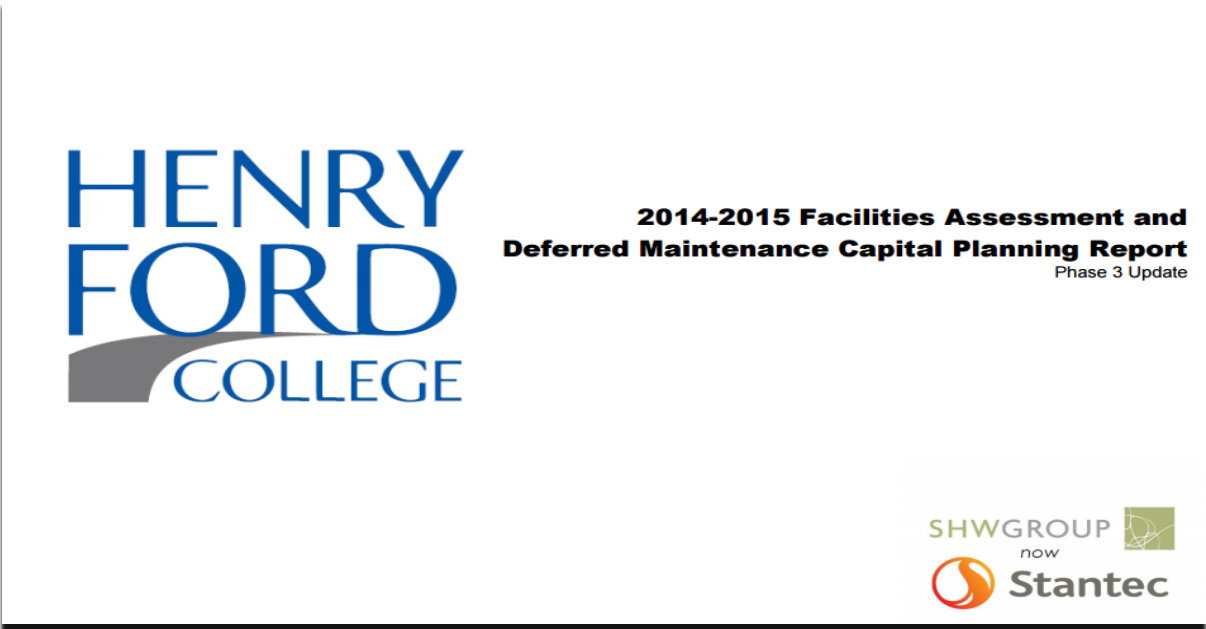


#### [HENRY FORD COLLEGE CAMPUS MASTER PLAN 2015](#)

#### **COMPREHENSIVE FACILITY ASSESSMENT:**

Click on the link or report icon below to review the comprehensive facility assessment in accordance with categories outlined in "net-to-gross ratio guidelines for various building types," DMB-Office of Design and Construction Major Project Design Manual, appendix 7.

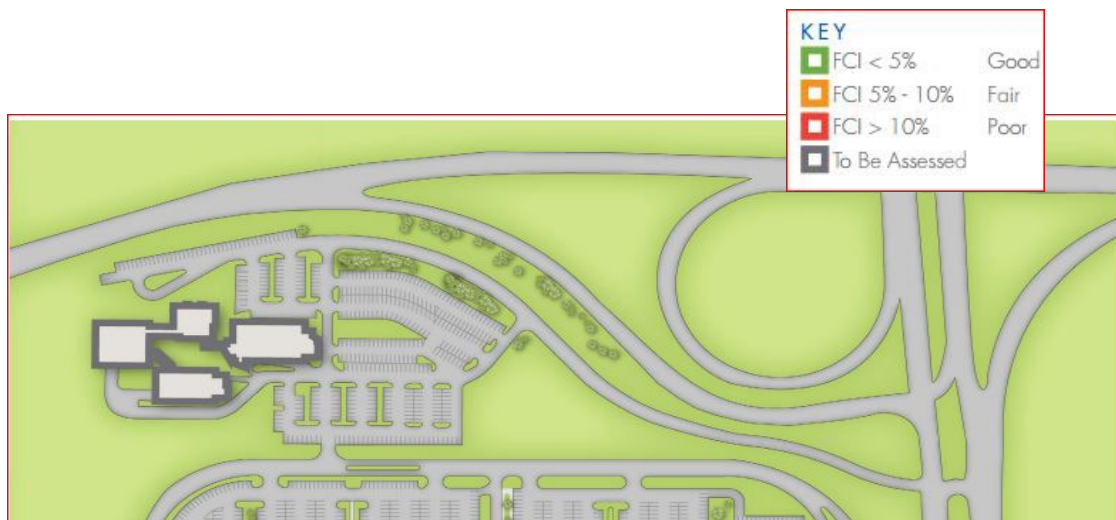
**2014-2015 FACILITIES ASSESSMENT & DEFERRED MAINTENANCE CAPITAL PLANNING REPORT Updated October 12, 2022.**



The 2023 HFC Facilities Assessment of over 942,449 square feet and \$388,456,000 replacement value has yielded a Facility Condition Index (FCI) of GOOD (0-5%) with respect to Priority 1-3. That is, the total value of projects that will require attention within the next five years including those that require immediate attention in order to maintain facilities and related infrastructure for safe use. The buildings identified as having significant issues include the Technology, Liberal Arts, and Physical Fitness buildings.

Major progress has been made in addressing the maintenance issues of the buildings since 2018. Appendix G identifies some of the specific priority repairs required while Appendix H identifies outstanding priority projects for priority one at \$5,962,000 for 2022 while Appendix H identifies priority 1-3 outstanding projects at \$19,634,000 at the end of 2022.

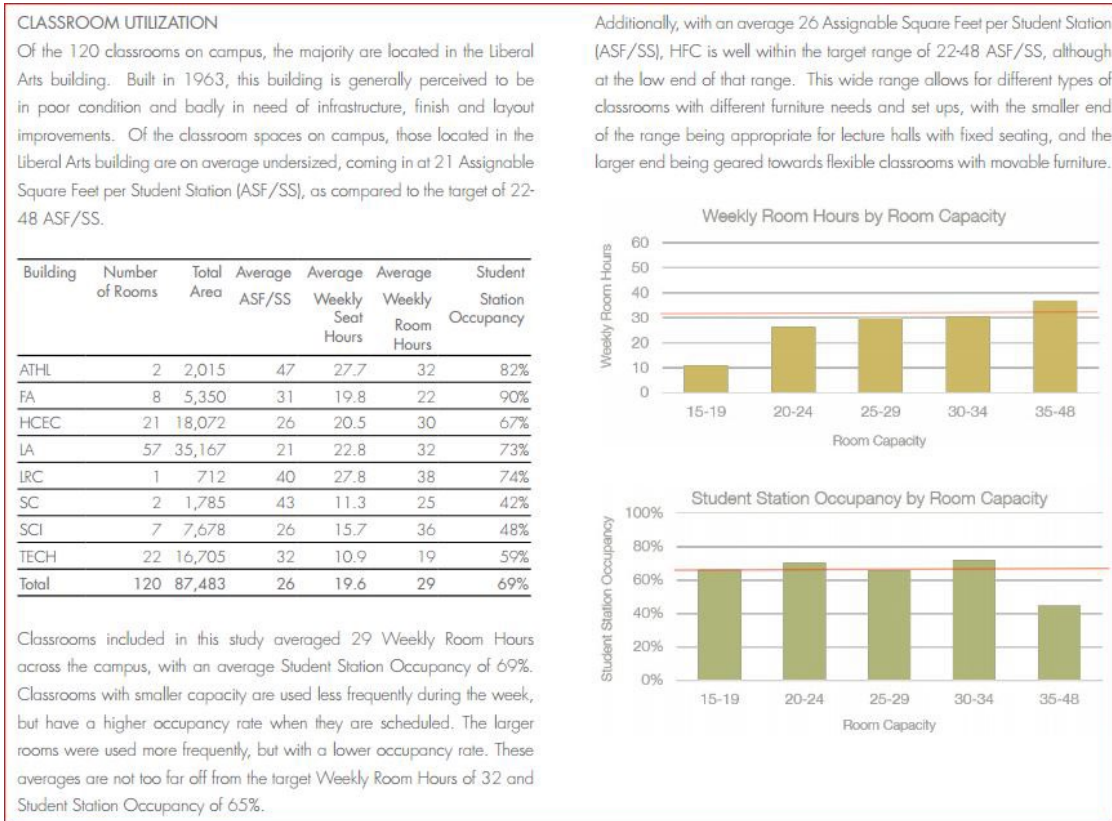
**HFC BUILDING CONDITION**



The Current Replacement Value (**CRV** is the cost to construct a replacement building in today’s dollars), the Deferred Maintenance Backlog (**DMB**), and the Facility Condition Index (**FCI**) (DMB/CRV) is shown below for fiscal year 2023-2024:

<b>Facility Current Replacement Value (CRV)</b>	<b>Annual Estimate to Maintain (3% of CRV)</b>
\$388,456,000	\$11,653,680
<b>PRIORITY 1: CURRENT YEAR</b>	<b>PRIORITIES 1-3: TOTAL THROUGH YEAR FIVE</b>
<b>Facility Condition Index (FCI)</b> 1.1%	<b>Facility Condition Index (FCI)</b> 4.6%
<b>Deferred Maintenance Backlog (DMB)</b> \$4,421,000	<b>Deferred Maintenance Backlog (DMB)</b> \$17,678,000

Detailed information regarding classroom utilization can be found on pages 52-54 of the Master Plan.



**1. 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.)**

In the science program, laboratories must meet standards set by the Department of Transportation (chemical labeling), OSHA (workplace safety) and the EPA (chemical disposal). Chemicals are handled according to prudent practices for academic chemical laboratories, with emphasis on pertinent local, state, and federal regulations. All faculty go through yearly lab safety training.

The Science Division has a part-time chemical health and safety technician, who oversees chemical inventories and lab safety. Standardized inventory and labeling have been implemented to comply with workplace safety and chemical labeling regulations.

The technology programs that teach the use of industrial machinery follow OSHA regulations such as those requiring personal protective equipment, machine guards, and designation of operator areas.

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

Programs being revised in the next five years include Associate degrees and certificates in HVAC, Renewable Energy, Transportation, and Mechatronics. These program improvements require high tech classrooms and laboratories that are supported by a robust technological infrastructure. Replacement value of existing facilities is \$373,516,000 as of 2022.

A report provided by R. A. Schettler, Inc., listing the Replacement Value New and the Sound or Depreciated Value of all buildings at HFC (dated 10/2020) and is included in Appendix D. Building age and size data is included in Appendix E.

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

The current systems provide sufficient heating, cooling, ventilation, and other utilities to meet occupant needs under most operating conditions. However, the Facilities Assessment and Deferred Maintenance Capital Planning Report has identified **major issues in life expectancy of some equipment and infrastructure**.

See [https://www.hfcc.edu/sites/hfccmain/files/attachments/2024-10/2023\\_hfc\\_fa](https://www.hfcc.edu/sites/hfccmain/files/attachments/2024-10/2023_hfc_fa)

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

The College completed the redesign and reconstruction of all parking lots at the Evergreen site. This includes a new storm water improvement system that significantly benefits the Rouge River, which receives storm water runoff. Additional investment in 2014 through 2022 was made in sealing and preventative maintenance of the parking lots of both the Main and East Campuses. Extensive upgrades and repairs of concrete walkways were made in 2014 through 2022 at both Main and East Campus. Roof replacements were also completed in 2021 and 2022. Included in Appendix G is the listing of building repair priorities.

**4. Adequacy of existing utilities and infrastructure systems to current and five-year projected programmatic needs**

The electrical system at the Evergreen site includes many components that—after more than forty years of use—have exceeded their useful life. A plan has been developed to replace much of this infrastructure and to convert from 4800-Volt to 13.2 kva feeders as recommended by the local electricity provider. The electrical project related to the North Loop feeder should be completed by 2025. 90% of the North Feeder loop upgrade to 13.2 KVA was completed with an additional section covering the Facilities Building and Powerhouse. The final phase of the North Loop upgrade includes the Tech Building Feeder and return to the Main Vault. The final phase is budgeted, and design is complete as of summer 2021. The Liberal Arts substation was completely replaced in the previously completed phase.

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

## **completing such audits?**

The College has completed an Integrated Energy Master Plan (IEMP), the comprehensive energy savings plans for the campus. Integrated Energy Mater Plan (IEMP) defines building and system improvements linked to the Colleges Facilities Master Plan.

The Integrated Energy Master Plan (IEMP- Appendix B) launched in June 2017 was completed in March 2018 and is aimed at ensuring the College has world-class energy performance in terms of energy reliability, energy efficiency, greenhouse gas emissions and energy cost. This is a transformative plan aimed at increasing source energy efficiency by 60%, increasing water efficiency by 40%, and reducing GHG emissions by 50% to bring the College in line with global best practices. The targets for the IEMP were guided by the US, Canadian and European benchmark institutions.

The IEMP creates a detailed integrated technical, environmental and economic model of College's energy use from end-user through campus distribution and supply with an outlook of about 20 years. Various scenarios of end-use efficiency, smart-campus control and measurement networks, electrical and thermal distribution and on-site clean and renewable supplies are evaluated against different regulatory and cost risk. The Scenario that best meets all the transformative targets will be adopted by the College as the implementation roadmap with year-on-year investments in energy infrastructure and the associated technical and economic performance.

The implementation of the IEMP includes changes in energy management practices and energy-related procurement. The aim is to build in continuous improvement around energy performance. Changes in procurement policies will also ensure new construction (including the major expansion of E building), renovation, retrofits and energy infrastructure meet the highest possible levels of efficiency measured against comparable examples anywhere in the world.

The College's enterprise-wide energy plan depends largely on the age of the building and the details of their particular heating/cooling systems as follows:

- Construction/renovation to current energy code standards. This applies to the renovated science building (2011) as well as the new addition to the Science Center (2012) and the Welcome Center (2012).
- All buildings have been updated with low-energy LED lighting and occupancy sensors.
- All buildings have been updated with modern building automation controls, and approximately half of the Campus's air handling systems were refurbished or replaced with energy efficient variable-speed upgrades.
- Electricity and water meters have been installed locally at each building to monitor use and for analysis in aid of continuous improvement of energy efficiency.

The main campus central heating and cooling plants are given special attention regarding energy consumption. The previous plant featured a 53-year-old central boiler system and a 25-year-old 4.8 KVA chiller. In Spring 2022, the College switched over to a new central heating plant in the Technology building. The current plant features 6 new boilers, a 500-ton chiller, an underground district heating network, and combined heat-power. The 1960s-era cooling tower was replaced in 2017.

The Facilities Services Staff are trained and dedicated to managing the mechanical systems with an eye to saving energy as much as possible. We retain a building controls firm who provides us with regular services to maintain our Building Management System and assist us with technical support as we improve the system.

The College is currently finishing the initial implementation phase of the \$23.2 million IEMP project with Johnson Controls Inc. as the lead vendor for the project.

**6. Identify 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**

Included in Appendix F is a map of the main campus of the College. The southern property line is shared with University of Michigan-Dearborn and the Gabriel Richard Campus Ministry Center. The eastern border flanks Evergreen Road and provides the major vehicular entry points to the campus roadway systems and parking facilities. Immediately east of Evergreen Road is land owned by the Ford Motor Land Development Corporation, the Fairlane Town Center, and Fairlane Meadows. The western facilities boundary is created by the Rouge River watershed, controlled under the jurisdiction of Wayne County. The northern property line is Ford Road (M-153).

Despite these space limitations, it is considered important to protect and preserve as much open space as possible, particularly space adjacent to buildings and building additions.

At this time, it is determined that additional acquisitions are not needed to meet the need of future demands.

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

Student and Culinary Arts Center 2028

## V. IMPLEMENTATION PLAN

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



**1. Prioritize major capital projects requested from the State, including a brief project description and estimated cost, in the format provided.**

Based on the assessments described above, Henry Ford College has established the following projects which are listed in priority order:

- a. Technology Building - The Center for Innovative Manufacturing Education (CIMed) (complete – December 2023)
- b. Energy Learning Center (ELC)
- c. Liberal Arts Building - Southeast Michigan Student Success Center (SEMSSC)
- d. Library - Learning Commons

Detailed descriptions of the projects listed above are included in Appendices A-D.

**2. 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 [2014-2015 \(Updated in 2022\) Facilities Assessment and Deferred Maintenance Capital Planning Report](#) includes facilities issues according to their impact on health and safety, accessibility, code compliance, potential for stopping further deterioration of facilities, and impact on the learning environment.

Due to the current state of deferred maintenance, the College continues to budget as much as possible to address these issues on an annual basis.

The findings of the **Technology Building** analysis include:

- IEMP contract provided updates to the HVAC equipment and controls, plumbing fixtures, lighting and lighting controls.
- HVAC: AHU has been refurbished with new supply fan array, damper actuators, and cabinets repaired. Coils were pressure tested and replaced as needed. Mixing boxes were upgraded to digital control, but equipment remains a constant volume, dual duct system.
- HVAC: 1993 addition RTUs 1, 2, 3 were replaced late 2022-early 2023.
- HVAC: insufficient heat in winter issue resolved through improved controls and pump upgrades.
- Plumbing: Restroom fixtures upgraded to low flow type. Accessibility not addressed as part of IEMP.
- Lighting: As part of IEMP, light fixtures re-lamped or replaced with LED units and lighting were upgraded to motion sensor.
- Roof: Significant portions of the roof were replaced as part of the renovation.
- Ceiling: 1964 wing ceilings were replaced as part of the renovation.
- Electrical: The substation is outdated and due for replacement with 13.2 kV system once north campus primary loop is extended to the building. Plan to upgrade in 2021 delayed due to high cost. This building is the last remaining



building on original 4,800-volt primary.

- Signage: Interior signage planned to be updated/replaced to address new building naming system. Egress maps updated to address new building naming system.
- ADA: Door hardware not being upgrade as part of renovation. Many doors remain with old style knob hardware.

Facility Current Replacement Value (CRV)	Annual Estimate to Maintain (3% of CRV)
\$69,638,000	\$2,089,000

PRIORITY 1: CURRENT YEAR	PRIORITIES 1-3: TOTAL THROUGH YEAR FIVE
<b>Facility Condition Index (FCI)</b> 5.3%	<b>Facility Condition Index (FCI)</b> 7.3%
<b>Deferred Maintenance Backlog (DMB)</b> \$3,712,000	<b>Deferred Maintenance Backlog (DMB)</b> \$5,114,000

Facility Condition Index – Building E. 2022.

The findings of the **Eshleman Library** analysis include:

- IEMP contract provided updates to the HVAC equipment and controls, plumbing fixtures, lighting and lighting controls.
- Signage: Interior signage planned to be updated/replaced to address new building naming system. Egress maps updated to address new building naming system.
- Plumbing: Restroom fixtures upgraded to low flow type. Accessibility not addressed as part of IEMP.
- Lighting: As part of IEMP, light fixtures re-lamped or replaced with LED units and lighting controls were upgraded to motion sensor.
- Floors: Original carpet was replaced Summer 2022.
- Roof: Skylights were resealed to prevent leaks
- Fire alarm: Panel original and reported nearing end of useful service life.

Facility Current Replacement Value (CRV)	Annual Estimate to Maintain (3% of CRV)
\$ 16,305,000	\$489,000
<b>PRIORITY 1: CURRENT YEAR</b>	<b>PRIORITIES 1-3: TOTAL THROUGH YEAR FIVE</b>
<b>Facility Condition Index (FCI)</b> 0.0%	<b>Facility Condition Index (FCI)</b> 1.1%
<b>Deferred Maintenance Backlog (DMB)</b> \$0	<b>Deferred Maintenance Backlog (DMB)</b> \$179,000

Facility Condition Index – Building B. 2022.

**3. 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**

The project includes an addition and select renovation of the Technology Building on the main campus of Henry Ford College in Dearborn, Michigan. It includes a total of 69,300 square feet of construction. Renovation of existing space accounts for 28,300 sf and new construction accounts for the remaining 41,000 sf addition. The project and its associated academic program spaces provide newly created or renovated spaces for the equivalent of 250 total full-time students. This increases the building's current student capacity from 2,360 fulltime students to a new building total of 2,610 full-time students. Four (4) new interactive classrooms featuring hands-on lab space for the equivalent of 16 fulltime students each will be added to the Transportation / Automotive Technology program. Existing program space is updated with new HVAC systems and doors to prevent noise and exhaust from disrupting neighboring programs in the building. Architecture / Construction Technology are currently housed in separate parts of the campus and are now consolidated in the new addition of the Technology building. The new space includes design studios for 16 students each, testing labs, a collaborative "maker" space, a high bay area for large projects such as construction and manufacture of tiny houses, a secured outdoor space, and ample storage for materials, tools, and other equipment. The area previously housing the College's construction program is to be renovated into two (2) CIS classrooms, accommodating for the equivalent of 16 full-time students each. This improves the flow of building space and adds instructional space to the growing CIS program. The HVAC and electrical equipment in areas affected by the construction (both renovation and addition) meet specifications set forth in the College's campus-wide Energy Master Plan.

The project is currently on schedule with Phase I complete with possession of Certificate of Occupancy and Phase II at substantial completion with possession of temporary Certificate of Occupancy. Classes began in the addition in Fall 2023. Phase III is in progress and on schedule to open for classes Winter of 2024.

**4. 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.**

Studies indicate that campus facilities and appearance are among the top reasons for students choosing a college. Therefore, modern and attractive facilities and classrooms will have significant impact on recruitment and retention. The experience and education students will receive will positively benefit local, state, national, and global employers as demonstrated by the Economic Modeling Specialist Data. The highly skilled workforce will contribute to the economic development of the areas in which the students become employed. With the completion of the Integrated Energy Master Plan (IEMP), any modification and upgrades have been benchmarked to yield an ROI of 8%.

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

The distance learning program at HFC is being reviewed vis-à-vis the long-range strategic goals of the college. The Board of Trustees is allocating resources for research, personnel and ultimately development of the *Online at HFC* College. In essence, the College is developing and implementing a brand new, sustainable, quality first, structure and model focused on student success. To achieve this, a new structure will be established, quality standards will be guaranteed prior to publication, evaluations will be regularly conducted, student learning will be easily evaluated, student services will be embedded, and sustainability measures will be set. However, the growth of distance education programs will not reduce the physical space needs of the face-to-face delivery of instruction at HFC.

**6. Identify a maintenance schedule for major maintenance items in excess of \$1,000,000 for fiscal year 2021 through fiscal year 2025.**

The College has identified a structural issue at the rear of campus and are in the design phase of a repair to the stormwater outfall that is estimated roughly at \$1.2 million.

Design for this project is in progress. Construction will begin winter 2024 with a target completion date of late spring 2025.

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

For 2023-24 the College has budgeted from operations approximately \$1,000,000 for non-routine maintenance.

Upgraded Colleges WIFI network and Groupwise E-mail system were funded through the Colleges Technology Fee in fiscal 2019.

**Technology Building: The Center for Innovative Manufacturing Education (CIMed)**  
(Complete – December 2023).

Excerpt from the HFC National Science Foundation Grant Application, October 2015:

***Critical Issues Facing Education for Advanced Manufacturing Worker Development***

A study of student workforce readiness conducted by the Lumina Foundation found that 96% of college academic officers felt that students were prepared for the workforce upon graduation, while only 11% of business leaders agreed (Lumina, 2015). Also highlighted by Baumann et.al (2014), there is a **gap between the skills students acquire and the skills employers need** them to have. This is particularly evident in the **U.S. manufacturing sector** where the skills gap continues to grow, not because of worker shortages, but because educational competencies are not aligned with those needed in the workplace.

***Open-Lab Platform***

“Traditional educational models are not designed to serve the population most needing postsecondary education. We keep trying to wedge nontraditional students into inflexible educational structures that were built for 18- to 22-year-old students and have barely changed in almost a millennium.” (Browser, 2014) The implementation of Common–Performance Based Objectives through the Open Lab Platform (OLP) will allow Competency Based Education to reach full potential by addressing “accessibility, affordability, transparency, and improved learning outcomes - all relevant to graduates’ employability and strengthening of the workforce” (Book, 2014). The OLP will build upon best practices and lessons learned from other institutions. This is critical, because research on improving CBE’s effectiveness indicates it must be supported by other innovations in design, delivery and assessment including:

- Student centered learning, in terms of flexibility and personalization (Klein-Collins, 2013).
- The ability for students to study at a variable, customized pace and receive consistent faculty support (Johnstone and Soares, 2014).
- (Create) sustainable learning resources, available at any time (Johnstone and Soares, 2014)
- Redefine(ing) the role of faculty since their role will change and insuring faculty develop CBE expertise (Mendenhall, 2012) (Cavanaugh, 2013) (Le, Wolfe, and Steinberg, 2014)
- (Create)Valid, reliable assessments (Mendenhall, 2012)
- Modularized learning (Weise, 2014)

The platform has additional economic benefits for all stakeholders that include **maximizing instructional space for teaching and learning and optimizing hands-on technological equipment** so students can access appropriate equipment. By encouraging students to embrace a more self-directed approach, they will increase their success in mastering a skill and attaining credentials.

## **Energy Learning Center (ELC)**

### **Henry Ford College – Bringing World Class Energy Education to Michigan**

The energy outlook in Michigan, the USA and beyond, presents major opportunities for Henry Ford College. Worldwide energy use continues to grow and change. There is pressure to reduce carbon emissions from energy use to limit the effects of climate change. Closer to home, Michigan’s energy and water systems are being upgraded to improve flexibility and reliability and reduce environmental damage. Technology is enabling cleaner, cheaper and more efficient energy and water use and supply choices. These factors are combining to drive a transformation the global energy market.

Senior leadership in industry, commerce, major institutions and communities increasingly understand the scale of both the opportunities and risks associated with energy use. This is increasing the need to develop complete energy solutions that deliver breakthrough levels of efficiency, reliability, flexibility, and environmental performance at lower day-to-day costs and overall economic risk. The result is a rapidly growing demand for new skills in tomorrow’s workforce at all levels.

This global picture was the backdrop to decision by the leadership of Henry Ford College leadership to develop an Integrated Energy Master Plan (IEMP) to create academic opportunities to serve the changing energy market and to slash the College’s own use of energy and water for the coming decades.

In 2017, the College spent \$1.5M on electricity, natural gas, creating a carbon footprint of 10,800 metric tons; roughly equivalent to the emissions from 3,000 cars. Under a business-as-usual scenario combining anticipated expansion and price uncertainties, utility cost could increase to between \$3.4M and \$4.7M by 2039. The carbon footprint stays about the same when climate science and international agreements call for up to 70% reductions.

The College Leadership set the challenge to create an energy plan that would represent global best practices in both its energy education and its own energy performance. After a year of effort, the IEMP was completed and favorably reviewed by the College’s Board of Trustees in May 2018.

The IEMP is a 20-year roadmap to 2039 for the College to raise its energy efficiency by 60%, its water efficiency by 40%, improve energy reliability, and cut absolute greenhouse gas emissions by over 60%, while achieving acceptable investment returns. It will also create a range of new energy-oriented academic and community outreach programs.

These results are achieved by comprehensive investments in control and metering, efficiency, restructured energy supply and distribution, along with changes in the energy management processes, practices and engagement. The College will build a pervasive Energy and Climate Culture shared by all staff, students and stakeholders. This will create a world-class “Living Classroom” upon which the College will extend its academic offering.

The College’s entire energy and water metering, and control capability has been upgraded to

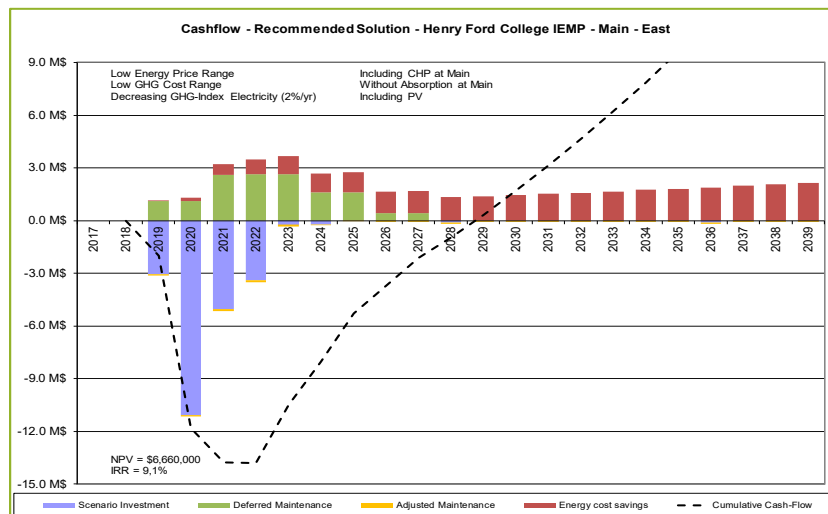
create a Smart City Network, supporting efficient day-to-day operations, long-term continuous improvement, performance reporting and campus-wide engagement. All buildings have comprehensive energy efficiency retrofits.

The 60-year-old heating network was replaced with one that meets current global municipal standards and extends to 12 of 15 buildings on main campus. This will be a relatively rare US example of a global best practice district energy network and be a valuable teaching and community asset.

A new Energy Learning Center was incorporated as a part of the refurbishment of the Tech Building. The Center supplies competitive, clean, and reliable energy from efficient sources, including high-efficiency boilers and chillers, thermal storage, combined heat and power (CHP) generation, along with significant solar power generation. The Energy Center will be both a modern operational facility and be configured as a teaching facility. It was designed as a visible statement of the College’s energy leadership.

The IEMP technical solution combines latest, proven technologies into a world-class flexible configuration that can evolve with ongoing changes over the coming decades. It creates a small-scale example of an energy and carbon-efficient Smart Community. Some aspects of the solution are more common in other parts of the world than in the USA and Canada. This gives the College the opportunity to not only serve the education needs of a transforming US and Canadian market, but also team with global players looking to expand their North American activities. The College is already in discussion with US and European leaders to form these alliances.

The technical solution calls for total investments of approximately \$26M between 2019 and 2022. About \$15M represents acceleration, redirection and completion of anticipated deferred maintenance and ongoing facility programs. The remaining \$11M is the incremental investment needed to deliver breakthrough energy performance. Based on a conservative view of future energy prices the IEMP will be in positive cash flow by 2029 and deliver 7% IRR on incremental investments. An additional \$11 million is anticipated to expand Co-generation opportunities, alternative energy sources (solar panels), and curricular expansion for meeting job demands in the industry.



Anticipated additional academic revenues from new energy related programs enhance the returns.

The IEMP areas of academic focus include realigned workforce training, technical certification, post-bachelor certificates and a possible new bachelor's degree program. The College will also be positioned as destination for elementary and high-school students in Dearborn, greater Detroit and Windsor, Ontario as a resource for raising energy and climate awareness, new career paths and engaging future College students.

Implementing the Henry Ford College Integrated Energy Master Plan recommendation will transform the College's ability to serve rapidly evolving educational needs while eliminating waste and freeing up resources for more productive use. It will set the College on the pathway to become a recognized US Center of Excellence for energy education

### **Southeast Michigan Student Success Center (SEMSSC)**

Michigan ranks in the bottom third of states' percentage of citizens with a post-secondary credential. To achieve the state-wide goal of reaching 60% of citizens with a post-secondary credential (certificate or diploma), the higher-education system must increase its success outcomes. The college pipeline has leaks that must be stopped: only 53% of new college students from Southeast Michigan graduate. And the graduation rate for new college students from Detroit is 24%. It is not possible to achieve this attainment goal of 60% by simply sending more students through the system, because Michigan will have declining high school graduates until 2035, at the earliest.

A regional solution is required to help increase graduation rates and achieve the state's goal of 60% college attainment by 2030. The Southeast Michigan Student Success Center will be the region's solution to this problem. The SEMSSC will serve as a physical convening location for all the region's student-success initiatives. The SEMSSC will be open to any regional student-success organization. Examples include entities beyond the education landscape: the Detroit Regional Chamber, the Kresge Foundation and the Ralph C. Wilson Jr. Foundation. The SEMSSC will host quarterly gathers of up to 200 of the regions leaders in industry, higher education, government, P-12 school districts, and philanthropy to discuss and collaborate best practices on raising the percentage of college attainment. Best practices will grow from, and be implemented at, Henry Ford College and other higher-education partners. Examples of student-success initiatives that this center will provide and scale include:

- Innovative class scheduling to fit students who are working adults
- On-site childcare for students with children
- Co-curricular classes, so students can simultaneously take remedial coursework with for-credit coursework
- Microgrants targeted at meeting unexpected financial needs during a semester for at-risk students
- Intrusive advising for first-generation college students to have an academic coach support and monitor them weekly

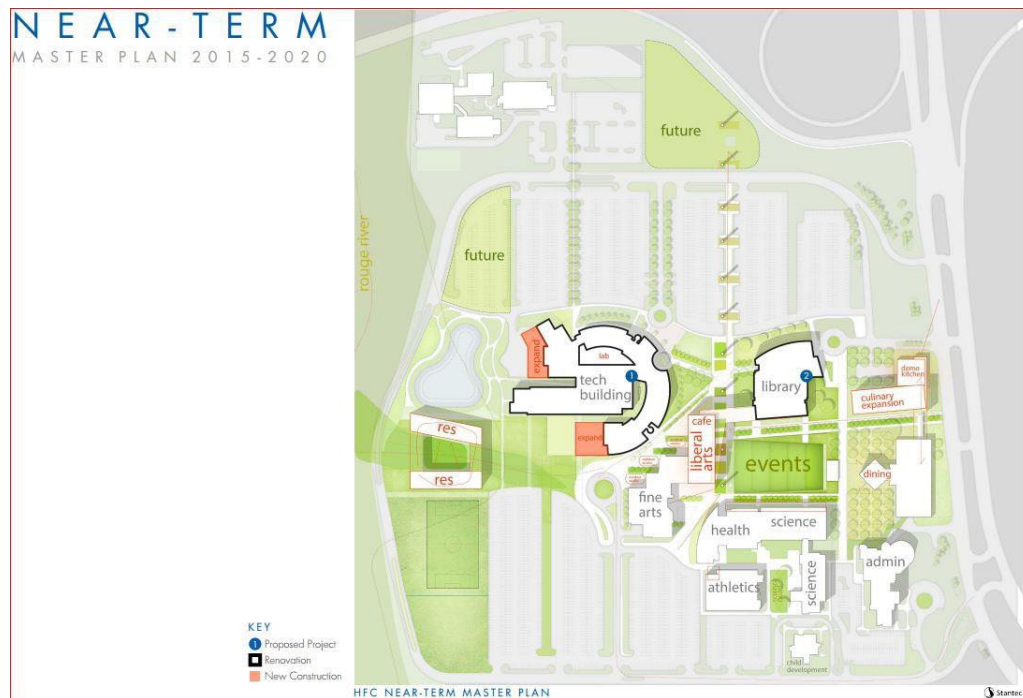
Each of these strategies have worked to raise graduation rates in other regions of the country. They have also successfully reduced, and sometimes eliminated, the gap between students of color and white students. The SEMSSC will be the region's flag in the ground to raise student success and achieve the state's goal of 60% college attainment by 2030.



## Library: Learning Commons

The renovation of the existing library (83,000 GSF) into the Learning Commons is being proposed to achieve the following goals:

- Promoting student collaboration.
- Creating a hub for outside-the-classroom learning.
- Reimagining the library as the knowledge center.
- Bringing together and aligned academic support services and programs from across the campus into a one-stop center
- Preparing for Early College expansion.
- Providing state-of-the-art technology enhanced Smart Classrooms



Outcomes:

Renovation of 83,000 GSF to create

- Establishing a Learning Commons
- Relocating Bookstore to Learning Commons.
- Incorporating several technology-enhanced Smart Classrooms as well as an Information Literacy Computer Lab
- Reallocating floor space for quiet and collaborative study, distributing computers throughout the building.
- Aligning all Academic Support Programs into one building.
- Learning Commons to house student services such as Veterans Affairs, Honors, Study Abroad, Service Learning, Civic Engagement, Assisted Learning, Outreach, and Counseling.

APPENDIX E

R.A. SCHESSLER, INC  
SUMMATION  
OF

10/1/16

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REAL ESTATE - BUILDING - HENRY FORD COLLEGE

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SUMMARY BY BUILDINGS	REPLACEMENT VALUE NEW	SOUND OR DEPR. VALUE
LEARNING TECHNOLOGY	6,300,200.00	3,717,100.00
FINE ARTS	15,977,400.00	10,225,500.00
LIBERAL ARTS	25,266,300.00	13,896,500.00
LEARNING RESOURCE CENTER	27,780,800.00	21,113,400.00
PATTERSON TECHNICAL	44,724,600.00	26,834,800.00
PHYSICAL EDUCATION	8,893,900.00	5,247,400.00
SERVICE BUILDING	5,725,500.00	3,378,000.00
SCIENCE/SOUTH WING/ HEALTH CAREERS	43,459,300.00	33,029,100.00
STUDENT CENTER	17,414,400.00	13,409,100.00
A.S.C.C. BLDG.	15,271,700.00	9,926,600.00
CHILD ACTIVITIES CENTER	1,799,000.00	1,511,200.00
YARD IMPROVEMENTS	681,600.00	443,000.00
M-TEC BUILDING	7,352,500.00	6,176,100.00
S.M.E. WEST BUILDING	8,287,500.00	5,718,400.00
WELCOME CENTER	14,469,400.00	12,154,300.00
S.M.E. SOUTH BUILDING	6,904,400.00	5,109,300.00
NURSING BUILDING	7,482,900.00	6,659,800.00
ASSET ACCOUNT GRAND TOTAL	257,791,400.00	178,549,600.00
PERCENT DEPRECIATION	X	

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**APPENDIX F**

**HENRY FORD COLLEGE  
Building Age/Size**

Building	Construction Date	Gross Area (Square Feet)	Volume (Cubic Feet)
Administrative Services & Conference Center	1983	59,645	980,348
ASCC – Addition	1988		
Athletic Memorial Building	1964	37,268	696,661
Athletic Memorial Building - Addition	1993	2,284	27,359
Child Development Center	1996	7,005	108,630
College Store	1975	7,752	69,768
Facilities Services Building	1994	7,932	116,576
Fine Arts	1981	65,079	987,639
Health Careers Education Center	1998	81,452	1,274,053
Learning Resources Center – Library	1966	46,587	556,615
Learning Resources Center – North Hall	1997	69,594	787,489
Learning Technology Center	1963	25,157	322,034
Learning Technology Addition	1997	615	7,971
Liberal Arts	1963	91,018	1,169,802
Liberal Arts – Chiller Addition	1995	3,823	68,812
Michigan Technical Education Center (M-TEC)	2001	28,890	300,000
Power House	1963	5,222	106,428
East Building (former SME)	1983	63,264	822,432
North Building (former SME)	1962	9,203	119,639
South Building (former SME)	1979	32,250	419,250
West Building (former SME)	1962	32,864	427,232
School of Nursing	2001	32,800	455,119
Science	1963	30,686	419,863
Student & Culinary Arts Center	1963	41,807	626,784
Technology Building – Patterson Technical Building	1965	61,567	810,222
Technology Building – Pump House	1964	462	6,468
Technology Building – Addition	1995	98,223	1,452,281
<b>TOTAL</b>		<b>942,449</b>	<b>13,139,475</b>

**BUILDING REPAIR PRIORITIES**

Building	Sq Feet	Priority 1	Priority 2	Priority 3
<b>Administration</b>	59,002	Replace Forfa HVAC	Install VAV re-heat upgrades	Weatherproofing
<b>Athletic Memorial Building</b>	36,460	Update elevator	Replace hot water boiler	Continue HVAC refurbishment
<b>Child Development Center</b>	7,003	Sectional roof replacement	Replace ceiling fans	Weather proofing
<b>College Store</b>	7,730	Finish HVAC updates.	Update electrical panels	Replace hot water tank
<b>Facilities Management Building</b>	13,180	Repair section of concrete drain trench in garage.	Replace roof	Restore basement foundation
<b>Fine Arts</b>	61,501	Continue HVAC refurbishment	Modernize restrooms	Replace compressor and air dryer
<b>Health Careers Education Center</b>	83,956	Continue floor covering replacement	Chemical exhaust hood upgrades	Roof replacement
<b>Learning Success Center</b>				
Library	46,587	PM - Electrical	Update interior signage	Weatherproofing
LSC - North	69,594	Update fire panel	Modernize elevator	Weatherproofing
<b>Learning Technology Center</b>	25,772	Replace exterior doors	Repair ramp at east entrance	Modernize elevator
<b>Liberal Arts</b>	89,580	Replace roof	Modernize restrooms	Replace exterior doors
<b>Science</b>	72,086	Exterior panels sealants/glazing	Modernize restrooms	Restore ramp and associated railing.
<b>Student Center &amp; Culinary Arts</b>	39,504	Address failed control joint flooring	Modernize restrooms	Modernize fire panel
<b>Technology</b>				
Patterson	61,567	Electrical upgrade	Masonry and tuck-pointing	Modernize restrooms
New Technology	98,223	Sectional roof replacement	Masonry and tuck-pointing	Replace drop ceiling tiles
Pump House	462	Roof Replacement		
<b>Welcome Center</b>				
North	6,640	Replace roof	Replace exterior emergency exit doors	Address precast panels per Stantec report
HFC Welcome Center	60,800	Weatherproofing	Replace RTU	Parking lot resurfacing and restriping
<b>M-TEC</b>	28,115	Replace/restore roof	Update exterior signage	Replace fire panel

School of Nursing	33,155	Replace fire panel	Replace fire panel	Replace HVAC RTU
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**BUILDING REPAIR PRIORITIES**

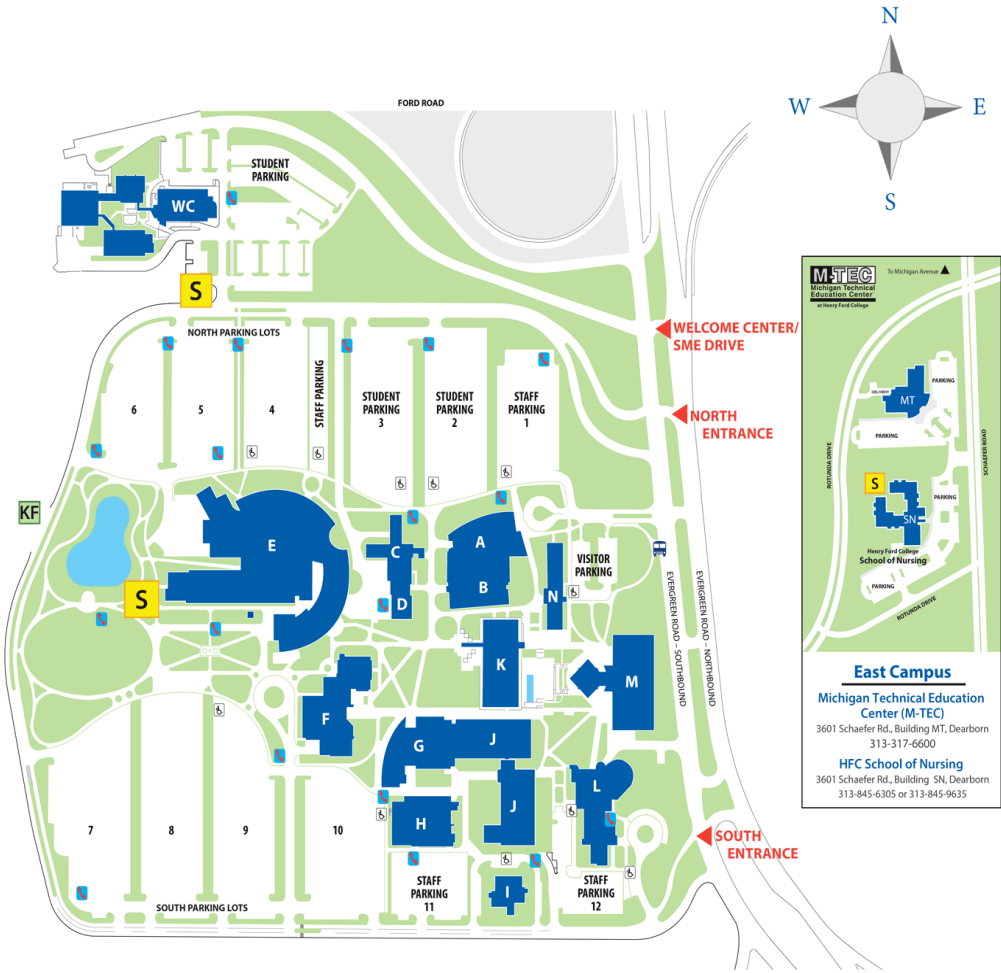
**APPENDIX H**

**HENRY FORD COLLEGE  
Main Campus Map**



5101 Evergreen Road  
Dearborn, MI 48128-1495  
(800) 585-HFCC or (313) 845-9600  
www.hfcc.edu

LEGEND	
	Emergency Blue Light Phones
	Handicapped Parking
	M-Dot Bus Stop
	Smoking Zone
	King Fisher Bluff Deck
A	Learning Success Center Assisted Learning Services Career Services Counseling Learning Lab Student Outreach Services
B	Library Media Center
C	College Store Facilities Service
D	Purchasing Shipping and Receiving
E	Technology Building Ghafari Conference Room E-123
F	Fine Arts Center Adray Auditorium Sisson Art Gallery
G	Health Careers Education Center Hackett Conference Room G-150
H	Athletic Memorial Building Fitness Center Gym
I	Child Development Center
J	Science Building Planetarium
K	Liberal Arts Building English Language Institute
KF	King Fisher Bluff Deck
L	Administrative Services and Conference Center Forfa Auditorium Berry Amphitheater Rosseau Board Room (A, B, C) Student and Culinary Arts Center
M	Kuhlman Dining Room Fifty-One O One Restaurant Skylight Cafe Student Activities WHFR Radio Station 89.3 FM
MT	Michigan Technical Education Center M-TEC
N	Campus Safety
SN	School of Nursing
WC	Welcome Center Community Rooms



October 2014

The latest version of the [campus map](#) can be found on the HFC website.

APPENDIX I

PowerPage Report										
Henry Ford College										
Building Name	Year Built	Building Area	% of Total Area	CRV	% of Total CRV	Priority 1 (current year) Issues			Rating	
						Project Totals	% of Total Project Costs	FCI		
<b>All Assessed Facilities:</b>				<b>983,863</b>	<b>\$325,384,750</b>	<b>\$3,784,000</b>	<b>100.0%</b>	<b>1.2%</b>	<b>Good</b>	<b>\$15,313</b>
<b>East Campus</b>				<b>61,140</b>	<b>\$21,399,000</b>					
MT-M-Tec Building	2001	28,120	2.9%	\$9,842,000	3.0%	\$17,500	0.5%	0.2%	Good	\$7
NS-Nursing Building	2001	33,020	3.4%	\$11,557,000	3.6%	\$0	0.0%	0.0%	Good	\$14
<b>Main Campus</b>				<b>922,723</b>	<b>\$303,985,750</b>					
A-Learning Resource Center	1998	53,744	5.5%	\$16,391,920	5.0%	\$0	0.0%	0.0%	Good	\$24
B-Eshleman Library	1960	46,587	4.7%	\$14,209,035	4.4%	\$0	0.0%	0.0%	Good	\$3
C-College Store	1970	7,730	0.8%	\$2,125,750	0.7%	\$25,500	0.7%	1.2%	Good	\$14
D-Facilities Management Building	1960	16,093	1.6%	\$4,908,365	1.5%	\$0	0.0%	0.0%	Good	\$32
E-Technology Building	1964	169,848	17.3%	\$60,296,040	18.5%	\$3,273,500	85.5%	5.4%	Fair	\$466
F-Fine Arts Building	1978	75,742	7.7%	\$23,101,310	7.1%	\$185,000	4.9%	0.8%	Good	\$139
G-Health Sciences Education Center	1997	81,500	8.3%	\$28,525,000	8.8%	\$6,000	0.2%	0.0%	Good	\$84
H-Athletic Building	1964	36,460	3.7%	\$11,120,300	3.4%	\$80,500	2.1%	0.7%	Good	\$106
I-Child Development Center	1996	7,100	0.7%	\$1,881,500	0.6%	\$0	0.0%	0.0%	Good	\$3
J-Science Building North	1960	49,000	5.0%	\$17,640,000	5.4%	\$60,000	1.6%	0.3%	Good	\$77
J-Science Building South	2012	18,383	1.9%	\$6,617,880	2.0%	\$0	0.0%	0.0%	Good	
K-Liberal Arts Building	1960	104,046	10.6%	\$36,416,100	11.2%	\$107,500	2.8%	0.3%	Good	\$314
L-Admin Services and Conference Center	1983	59,000	6.0%	\$17,995,000	5.5%	\$0	0.0%	0.0%	Good	\$91
M-Student and Culinary Arts Center	1960	41,800	4.2%	\$14,630,000	4.5%	\$0	0.0%	0.0%	Good	\$17
N-Campus Safety	1963	19,240	2.0%	\$6,734,000	2.1%	\$17,500	0.5%	0.3%	Good	\$19
W-Welcome Center	1982	62,000	6.3%	\$18,910,000	5.8%	\$0	0.0%	0.0%	Good	\$20
X-South Building	1978	32,250	3.3%	\$9,836,250	3.0%	\$11,000	0.3%	0.1%	Good	\$43
Y-West Building	1965	36,000	3.7%	\$10,022,300	3.1%	\$0	0.0%	0.0%	Good	\$41
Z-Community Center	1965	6,200	0.6%	\$2,625,000	0.8%	\$0	0.0%	0.0%	Good	\$9