



Medical Center Campus and East Medical Campus Master Plan Update

University of Michigan Ann Arbor, Michigan

Summer 2005

Mission and Vision

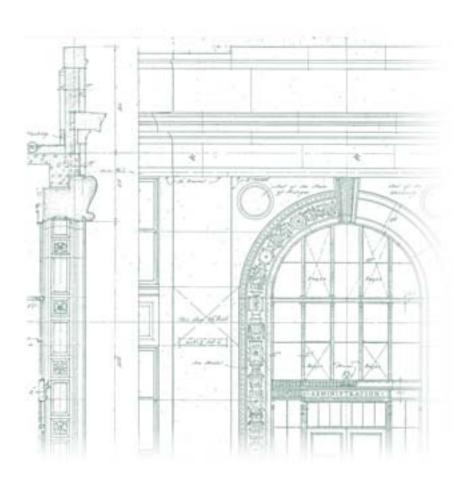


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Master plans evolve over time to support the University's mission and vision and to provide a sense of place for the academic community. Our planning remains flexible enough to accommodate a future that we can only begin to create today.

-Mary Sue Coleman, President, The University of Michigan

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FOREWORD: A PLACE CALLED MICHIGAN



The original Medical School Building, 1880s.

From its establishment in 1817 as one of the first public universities in the nation, the University of Michigan has distinguished itself as a leader. Fifty years after its creation, Michigan was among the largest universities in the country and was comprised of the Literary Department, the Law Department and the Medicine Department.

In 1871, James Burrill Angell, the University's third president, said that the University provided an "uncommon education" for society. Medicine at Michigan was no exception. The Medical School, which was the first professional school in the University, admitted its first class of 91 students in 1850. Tuition consisted of a ten-dollar registration fee. In its 150-year history, the Medical School has awarded 18,000 M.D. degrees and educates more than 600 medical students each year.

When the University Hospital opened in 1869, the first university-owned teaching hospital in the nation was born. In 1899, the U-M Medical School introduced the clinical clerkship, having succeeded where other medical schools failed largely because the University owned its own hospital (privately owned hospitals would not allow medical students to touch their patients). The clerkships created a crucial precedent for clinical care and opened the field of clinical education.

Today, research ranges from basic molecular and cellular biology to clinical investigation, to translational research that brings science from the bench to the bedside.

In the 1800s, the medical "center" at Michigan consisted of a few wooden structures. Today, the Medical Center Campus contains approximately 6 million square feet of space, very different from its relatively spare beginnings.

This plan illustrates how the Medical Center Campus core, the Wall Street district and the East Medical Campus will evolve in the coming years. These areas provide diverse and distinctive opportunities for growth and investment. Together, they will help to maintain Michigan's place as a leader in medicine.



University Hospital Pavilions circa 1880 One of the original faculty houses was converted in 1869 into the first university teaching hospital in the nation.



University Hospital, 1925



Biomedical Science Research Building (estimated completion in 2006)

Today, the University of Michigan Health System (UMHS) includes the University of Michigan Medical School and its Faculty Group Practice, University of Michigan Hospitals, approximately 30 health centers, more than 120 outpatient clinics, and M-CARE Health Plan. The U-M is home to one of the largest health care complexes in the world and consistently ranks among the best health care centers in the nation.

In fiscal year 2004, the system saw more than 42,000 admissions, 1.6 million outpatient visits and 70,000 emergency service/urgent care visits.

The 2005-2010 UMHS Strategic Direction emphasizes the need for future growth and investment. This Master Plan Update provides the vital physical framework to accommodate that strategy and shape the future of medicine at Michigan. It is a tool to help balance the programmatic goals and demands of UMHS with the physical features and constraints of the Medical Center and East Medical campuses and the sites available for future development.



BRIARWOOD

SOUTH CAMPUS

The University of Michigan Health System is home to diverse academic and health-related institutions in many locations. It is undergoing changes in education, care provision, and research methodologies, and in the relationships among them.

Interactive collaboration between U-M and UMHS departments, interdisciplinary teaching and research, and disease-based treatment and research, are some of the shifting patterns of activities within the U-M campuses and the region.

As UMHS programs expand desired linkages, space needs and relationships, it must consider its evolving relationship with the rest of the University of Michigan campuses.



The Master Plan Update will guide land use and facility development for the next 15 years.

MASTER PLAN OVERVIEW

A master plan is a long-term, flexible physical framework that provides a roadmap for clear, coordinated development. The University of Michigan issued its last update to the Medical Center Master Plan in the late 1990s. That plan highlighted the important role that Health System sites and programs play in the University of Michigan system of campuses, and provides the backdrop for this Update.

This Master Plan Update takes into consideration the ongoing changes in medical education, patient care and research. The Update will guide development for at least the next 15 years.

This plan introduces the concepts of transit centers, densification and clearly defined green space. The Wall Street district is introduced as a natural extension of the Medical Center Campus core.

In addition, this plan addresses the need to:

- Balance the demand for clinical, research and education facilities and promote excellence in these three missions
- Accommodate today's needs and tomorrow's opportunities through flexibility and contingency planning
- Create a physical environment that fosters connectivity and collaboration between the Medical Campus locations and among other U-M schools and the community
- Identify the best use of each site based on its unique aspects (density, location, access, natural features)
- Ensure mobility and access through:
 - ~ pedestrian-friendly connectors
 - ~ clear wayfinding
 - ~ strategically-placed transit centers
 - ~ accessible and safe patient and visitor parking
 - ~ alternatives to vehicular traffic

- > Create a safe and pleasing environment for faculty, staff, students, patients and visitors
- > Reaffirm UMHS's commitment to environmental stewardship
- > Consider a regional approach (not building-specific) to utilities, including information technology



Our priorities: excellent patient care, research and education







UMHS Planning Principles

- Reflect the tripartite mission and vision of the Health System in constructing education, patient care and research facilities
- Incorporate the programmatic and physical connections of the Medical Center Campus, East Medical Campus, Central Campus and North Campus to the extent feasible
- Provide tertiary and high-intensity patient care services in the Medical Center Campus core and provide less intensive and routine patient care at other locations
- Provide laboratory research and education facilities in the Medical Center core and at other locations as determined through strategic initiatives
- Coordinate new Health System projects with current and future campus construction projects to minimize the impact on patients, visitors, faculty, staff and students
- Maintain a long-term obligation to maximize the use of development and redevelopment on University-owned land

- Use facility design principles to maximize site development potential
- Respect surrounding areas as the height and massing of buildings is determined during facility design
- Coordinate construction projects to sustain vehicular traffic and pedestrian/bicycle movement
- Design projects with coordinated parking solutions to minimize the impact on patients, visitors, faculty, staff and students
- Use the 2004 Ambulatory Care Strategic Plan to guide the development of offsite clinical facilities in the context of a regional health services plan





MEDICAL CENTER CAMPUS

This Update newly defines the Medical Center Campus as the Medical Center Campus core and the Wall Street district.

Medical Center Campus core: Current flagship location for UMHS research, education and inpatient and specialty care (Figure 2).

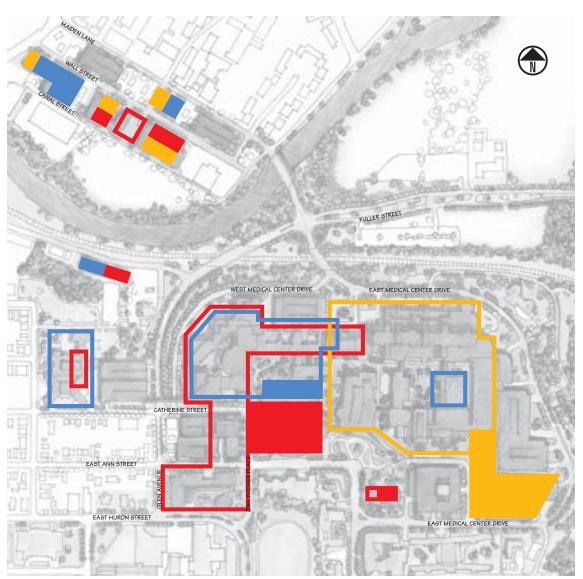
Wall Street district: Current home to the W.K. Kellogg Eye Center (Figure 5).

Land is the limiting resource on the Medical Center Campus. Because of its geographic constraints, this area will be densely built with each building footprint optimized, while being sensitive to surroundings.

The Functional Use Zones diagram (Figure 1) identifies existing research, clinical, education and administrative activities on the Medical Center Campus sites and proposes future functional uses for remaining development zones. Locating future activities and programs within this framework will help strengthen existing synergies and forge new relationships.



FIGURE 1 Existing and Proposed Functional Use Zones



MEDICAL CENTER CAMPUS CORE



MEDICAL CENTER CAMPUS CORE

The Medical Center Campus core concentrates uses. It balances inpatient and ambulatory care; secondary, tertiary and quaternary services; basic and clinical research; and medical education. The core is located on 84 acres of University-owned land within East-West Medical Center Drives, Observatory Street, East Huron Street and Zina Pitcher and bordered by the Arboretum on the south and the Huron River on the north.

The core is comprised of approximately 6 million gross square feet of building space (hereafter referred to as "gsf") and 34 buildings dating from the early 20th century to the present. The Medical School alone occupies more than 2 million gsf of research and education space.

The major growth and investment opportunities within the Medical Center Campus core (Figure 2) lie in redevelopment of the Kresge complex (B1, B2, B3, B4 development zones), which would provide approximately 350,000 incremental gsf, and the new C.S. Mott Children's Hospital and Women's Hospital facility (development zone C1) which will provide almost 1 million gsf of state-of-the-art space for children's and women's programs. Once vacated, the existing Mott Hospital will provide the opportunity to increase University Hospital bed capacity to accommodate anticipated growth in patient care activities. Details of these plans are highlighted in Figure 3 and Figure 4.

FIGURE 2

Medical Center Campus Core Potential Development Sites



- B1 Existing Surface Parking
- B2 Medical Science Building I
- B3 Kresge I, II, III

- Kresge Hearing Research, Upjohn Center, Lloyd Memorial
- C.S. Mott Children's Hospital and Women's Hospital Site
- C2 Simpson Memorial Institute



Existing buildings



Proposed buildable zone



Existing parking structure



Proposed transit center



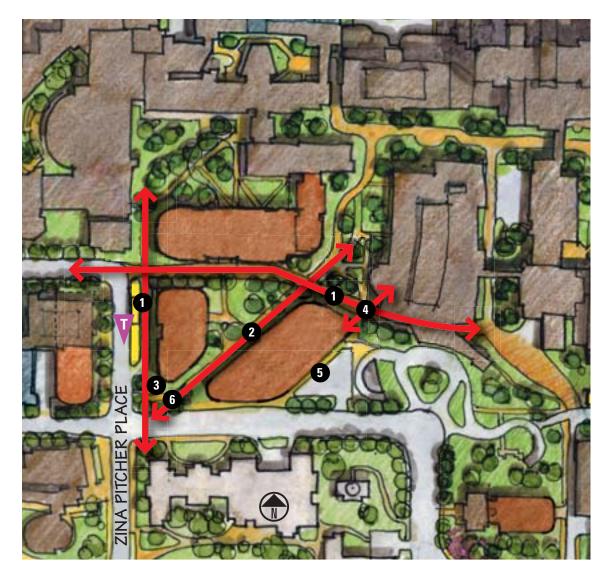
Underground parking deck

FIGURE 3 Kresge Complex Redevelopment Plan Highlights

- Maintain east-west and north-south connectors
- 2 Provide diagonal connection through Kresge site
- Create Medical School arrival zones
- Promote connection to Cardiovascular Center
- Provide service access
- Locate building entrance

Other Characteristics

Respect existing utility corridor



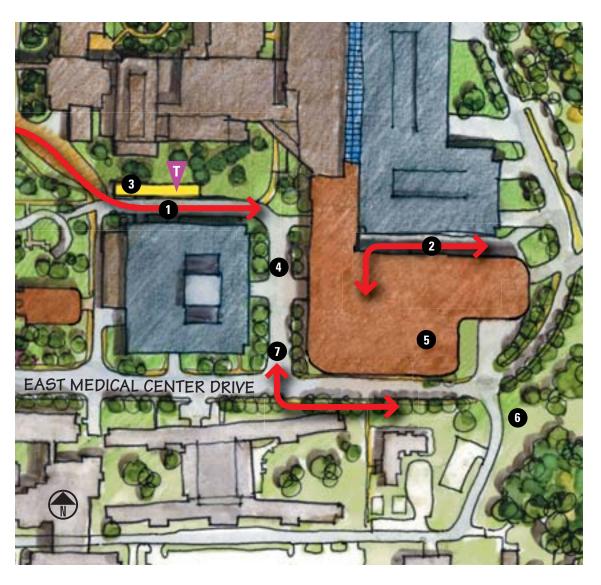




Proposed buildable zone



FIGURE 4 C.S. Mott Children's Hospital and Women's Hospital Development Plan Highlights



- Enhance east-west connector to accommodate pedestrian and bicycle use
- Maintain adequate setback from Taubman parking deck
- Provide a transit center
- Explore a connection to Mott parking deck
- Accommodate helipad on roof
- Create association with Nichols Arboretum
- Provide traffic signal to encourage pedestrian access to Nichols Arboretum and to facilitate vehicular movement

Other Characteristics

Provide landmark image and identity for front entrance

Respect existing building heights

Accommodate interior connections from Mott to Taubman Center and parking

Provide emergency entrance

Promote safe access for emergency and service vehicles



MEDICAL CENTER CAMPUS CORE cont'd





Vision

The vision for the Medical Center Campus core is to maintain a physical environment that promotes excellence in medical education, provides a positive healing experience for patients and their families, and enhances collaboration among researchers and collegiality among staff and faculty.

High-intensity patient care services will be located in the Medical Center Campus core, while less intensive patient care will be conducted at other Health System sites. In addition, inpatient care and other acute care activities will be located on the east side of the core, accessible by car to visitor parking, while research activities will be located primarily on the west side of the core.

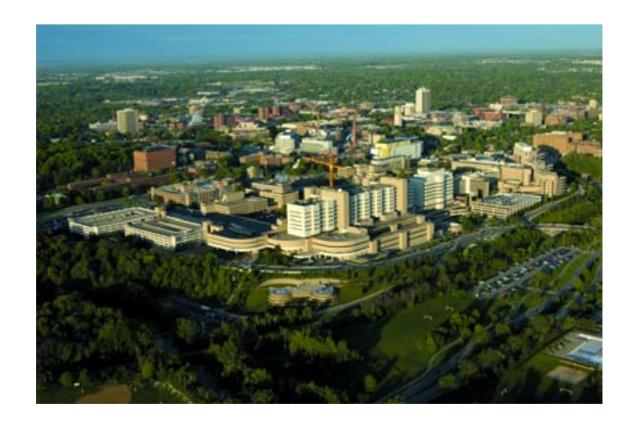
The vision includes clear wayfinding and identified entries to enhance the ability to navigate to and within the Medical Center facilities.

Pedestrian activity will be encouraged through a well-defined external pedestrian network in addition to the existing internal routes.

Vehicular traffic, except for emergency and service vehicles, will continue to travel on the campus perimeter. Shuttle service within the core may become necessary, and would likely be small electric or clean-fuel vehicles.

Defining Features

- Dense development
- > Geographical constraints of river and topography
- > Central Campus and Wall Street district adjacency
- Nichols Arboretum accessibility
- > Almost fully built-out with redevelopment opportunities



WALL STREET DISTRICT



Located within walking and bicycling distance of the Medical Center Campus core, the Wall Street district is the ideal area for Medical Center Campus expansion. It sits on University-owned land within Maiden Lane, Island Drive, Canal Street and Broadway. Wall Street is home to the nationally recognized W.K. Kellogg Eye Center and the University of Michigan Department of Ophthalmology and Visual Sciences. The Delores S. and William K. Brehm Center for Type 1 Diabetes Research and Analysis will be part of the Wall Street expansion.

The Wall Street district is easily accessible to patients and families. Its size, scale and visual cues provide the opportunity to design clear wayfinding for patients of all ages.

Growth and investment opportunities include optimizing building footprints while respecting adjacent buildings and the Lower Town neighborhood. There is capacity for nearly 1 million gsf of additional space, two 500-600 car parking structures and a transit center. Regional infrastructure and utility demands will need to be evaluated and coordinated.

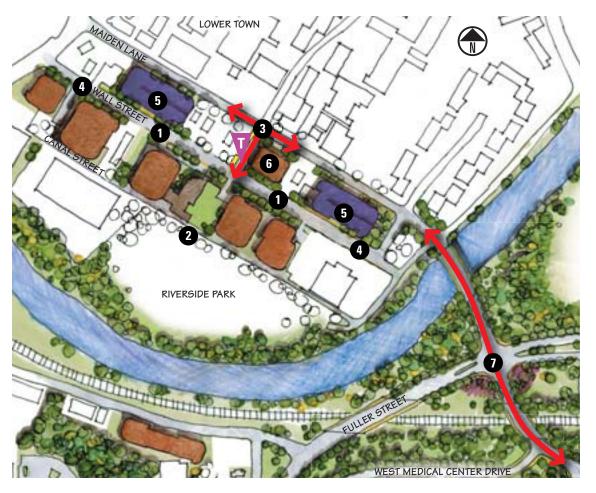
Vision

The Wall Street district will serve as a natural expansion of the Medical Center Campus core for ambulatory care, education and research, and will provide transit alternatives, amenities and administrative space for the Medical Center Campus. The district will keep its unique pedestrian-friendly identity and scale, which is greatly influenced by nearby Lower Town.

Defining Features

- > Adjacency to Medical Center Campus core
- Lower Town proximity
- Riverside Park adjacency
- > Huron River on the south
- Opportunity for enhanced Fuller/Maiden Lane intersection connection to the Medical Center core

FIGURE 5 Wall Street Potential Development Sites and Planning Highlights



- Promote Wall Street as the major route for patient, visitor, staff, faculty and student access to buildings
- Maintain Canal Street as service access
- 3 Promote a link to neighboring developments and the larger community
- Redefine Wall Street as a pedestrian-scaled environment with enhanced streetscape
- Locate parking decks with primary access from Maiden Lane
- Centrally locate a Transit Center and associated amenities
- Enhance pedestrian and transit connections between Maiden Lane and East Medical Center Drive



Proposed buildable zone

Proposed transit center





SYSTEM PLANNING

System planning encompasses vehicular circulation and access alternatives, pedestrian circulation, utilities and infrastructure, land use and open space. At the University of Michigan Medical Center Campus, access and mobility are crucial topics. Given a history of parking and space constraints, signage visibility and roadway configurations, the viability and vibrancy of the entire Campus depend upon planned access and mobility for all modes. In addition, with land use being the limiting resource, indentifying opportunities for new development and redevelopment has been critical toward promoting the Health System's strategy for growth and investment. Finally, the plan takes into consideration utility and infrastructure requirements.

Vehicular Circulation

Vehicular circulation will remain primarily on the perimeter of the Medical Center Campus core; the primary access point will be East Medical Center Drive from Fuller Road. Additional vehicular access points to the core are from Huron, Observatory and Glen Street. The Wall Street district is accessible from Maiden Lane and from Wall Street. Service vehicle access will be primarily from Canal Street.

Roadway improvements to accommodate University of Michigan facility growth and the growth of the surrounding area will require coordination with the appropriate jurisdictions.





Access Alternatives

Given the limits of available parking for staff, accessibility to the Medical Center Campus will need to focus increasingly on transit and alternatives to cars.

Two proposed transit centers within the Medical Center Campus core and one proposed transit center in the Wall Street district will be strategically located and should be designed to provide a comfortable and safe waiting area for the passengers to encourage ridership.

Support for transit centers, a vital element of this Update, reflects the more prominent role for commuter circulation that U-M buses, Health System shuttles and Ann Arbor Transportation Authority transit services will have as the Medical Center Campus evolves.

Remote parking lots and shuttle service, the U-M/AATA MRide program, parking permit pricing as an incentive/disincentive, and promotion of U-M Parking and Transportation's car pool/van pool should continue to be used and expanded. Individuals who choose to use alternative forms of transportation will continue to be provided a means to their vehicle in the event that they need to return home unexpectedly.



Alternative methods of storing cars in parking facilities may allow parked cars to be stored more efficiently in the limited amount of space available; this concept should be explored in the future.

This Update represents a shift in emphasis toward pedestrian and bicycle facilities and will provide commuting options for faculty, staff and students.

In addition to pedestrian and vehicular solutions the university is committed to exploring new technologies such as telecommuting and teleconferencing.







"Big Bird" at the entrance to Mott Children's Hospital has become a memorable and welcoming landmark for visitors of all ages.

Pedestrian Circulation

An important element of the Update is to establish clearly defined pedestrian corridors that provide connectivity within the Medical Center Campus core, as well as link the core to the Wall Street district and Central Campus. Acknowledging that an internal network of pedestrian routes exists, this plan focuses on the external pedestrian routes, as noted in the Pedestrian Circulation Plan (*Figure 6*).

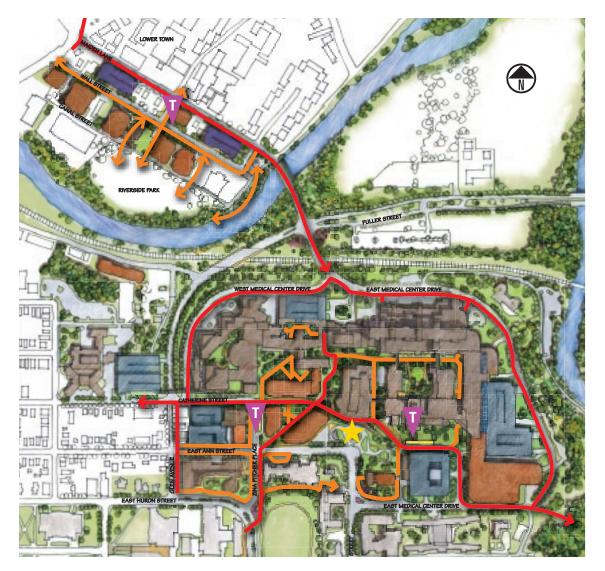
The plan enhances the east-west corridor as a pedestrian route from Central Campus to within the heart of the Medical Center Campus core. It provides for safe and convenient pedestrian access to destinations from proposed transit centers and bus stops.

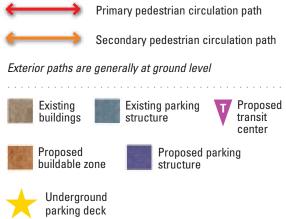
The pedestrian connectivity between the Wall Street district and the Medical Center Campus core should be enhanced to provide adequate sidewalks and a safe and attractive walking environment to accommodate the increasing numbers of pedestrians that will take advantage of this 10 minute walk.

This plan identifies Wall Street as becoming more pedestrian-friendly by adding benches and banners, installing a strategically located transit center, providing ample pedestrian lighting and improving sidewalks. The connection to Lower Town from the Wall Street district provides amenities such as food and retail.

Access to and use of parks and recreation will be promoted by clearly defined routes to the Arboretum and Riverside Park.

FIGURE 6
Primary and Secondary Exterior Pedestrian Circulation Plan







Utilities

Development must take into account the location and new demands placed upon the existing campus and regional network of underground utilities and infrastructure.

The Wall Street district's gas, high voltage and information technology (IT)/telecommunications will likely require additional capacity to support development and requires further investigation. Regional storm water solutions and sanitary sewer demands will need to be considered and coordinated for all development. In addition, future planning should:

- Minimize the impact on existing utility locations and rights-of-way
- Coordinate utility demands with regional supply networks and routings
- Identify relocations required by development
- Phase development in a sequence that is coordinated with required utility and infrastructure improvements
- Consider centralized regional chilled water and steam/hot water production plants
- Identify land requirements for utility corridors







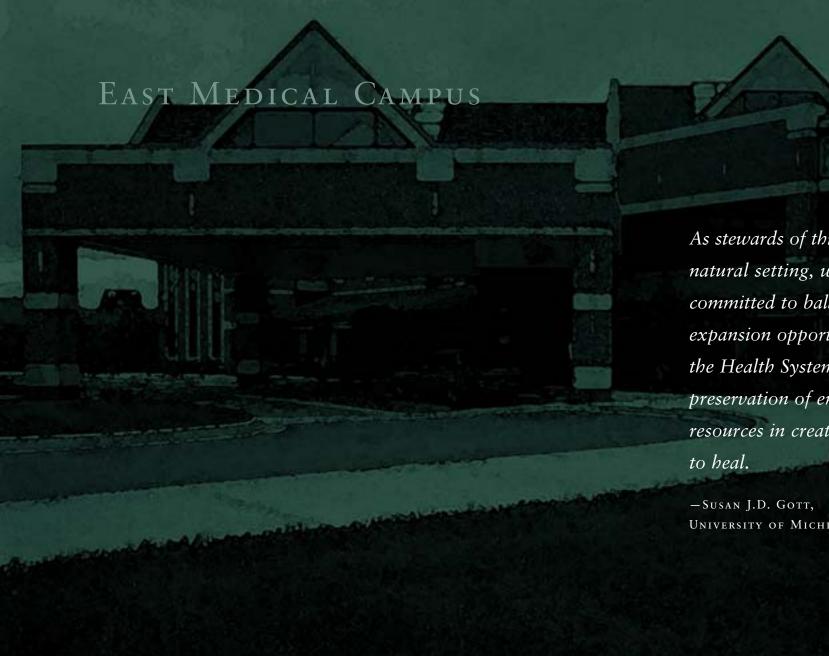


Open Space Plan

As density increases at the Medical Center Campus, identification and preservation of significant open spaces becomes more critical. Open spaces that are pleasant, accessible and in harmony with their building sites will help promote a healthy, healing environment as well as provide views from within the buildings.

Open spaces should be used as a wayfinding tool for all users, with appropriate landscape treatments to define arrival zones for the Medical School and the University of Michigan hospitals and clinics.

Development should be sensitive to the floodplain and other significant environmental conditions.



As stewards of this beautiful natural setting, we are committed to balancing the expansion opportunities for the Health System with the preservation of environmental resources in creating a place

University of Michigan Planner



EAST MEDICAL CAMPUS

The East Medical Campus is situated on 200 acres of University-owned land at Earhart and Plymouth roads in Ann Arbor Township. The natural setting encourages a healthy lifestyle and provides the opportunity to create a peaceful, nurturing environment.

East Medical Campus is primarily an outpatient clinical care complex that includes associated research and medical education activities. The Campus consists of the 86,000-square-foot East Ann Arbor Health Center and two buildings under construction. The Rachel Upjohn Building for Ambulatory Psychiatry and Depression Center will provide about 110,000 square feet that will accommodate research, education, training and treatment. The 50,000-square-foot Ambulatory Surgery and Medical Procedures Center will provide six operating rooms, four procedure rooms and related support areas. Radiology services also will expand.

Opportunity for growth and investment includes a 700,000-800,000 gsf new "cluster" for ambulatory care and/or academic activity (Figure 7).

Vision

Using the natural features of this unique site, the Master Plan Update creates opportunities for many active, outdoor spaces that balance the Health System's mission with the best practices of land stewardship. In addition, the Update allows for expansion of outpatient clinical care, including associated clinical research and medical education.

Development will continue to be clustered to minimize impact on the natural environment, and scaling will be modest to respect the surroundings.

The openness of East Medical Campus, even with building clusters, makes it highly accessible and allows successful wayfinding through both visual cues and signage.



East Ann Arbor Health Center

FIGURE 7
East Medical Campus Proposed Development Plan





System Planning

Transit centers will be conveniently located in core areas of campus to facilitate movement among U-M campuses and the Ann Arbor community.

Impacts to existing woodlots will be minimized and native plants will be used. A proposed trail system will provide opportunities for patients and staff to experience the site's natural beauty.

Development of East Medical Campus should be coordinated with required utility and infrastructure improvements. Additional gas, high voltage, and IT/telecommunication capacity may be required and should be studied further. A regional approach to storm water management should be taken. In addition, centralized, regional chilled water and steam/hot water production plants should be considered.

Defining Features

- > Natural environment/parklike setting
- Ease of vehicular accessibility
- > Township setting
- Clustered development
- Transit centers in the core





Conclusions

People deserve access to a world-class medical center.

Our challenge is figuring out how to provide them with access while maintaining our commitment to the stewardship of all our resources. We are working to meet that challenge.

-LARRY WARREN, DIRECTOR AND CEO, University of Michigan Hospitals AND Health Centers

CONCLUSIONS

This Master Plan Update is to be used as a tool to help balance the programmatic goals and demands of UMHS with the physical features and constraints of the campuses and sites available for development. Inevitable shifts of priorities in health care delivery, medical research and education will evolve, individually and in relation to one another. The tenets of this Master Plan Update should span these realignments by identifying issues of concern and highlighting a framework in which future development should occur.

The major issues that have emerged include:

- Clear wayfinding, access and arrival
- Campus connectivity
- > Open space and amenities
- ⇒ Building and massing
- Parking and roadway capacity
- Transit alternatives
- Regional approach to utilities
- Future development and redevelopment opportunities

These issues, as well as the detail described in the Plan Update, are crucial to the creation and maintenance of campuses and sites that serve the many disparate users of the Medical Center Campus and East Medical Campus sites and provide a safe, healthy, inspiring and healing environment for all.



ACKNOWLEDGMENTS

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