

UNIVERSITY OF MARYLAND, BALTIMORE

FACILITIES MASTER PLAN

2017

Contents

- 3** PRESIDENT'S MESSAGE
- 5** INTRODUCTION
- 11** INSTITUTIONAL PROFILE
AND SPACE NEEDS
ANALYSIS
- 31** EXISTING CONDITIONS
- 59** KEY THEMES
- 67** PLAN CONCEPTS
- 73** CAMPUS PLAN & KEY
FEATURES
- 113** IMPLEMENTATION

An aerial photograph of a city, likely Boston, showing a dense urban landscape with numerous buildings, streets, and a river in the upper right. The image is used as a background for the text overlay.

“ UMB is a beacon for people committed to improving human health and well-being. ”



President's Message

JAY A. PERMAN, MD,
President

Every 10 years, UMB has a cherished opportunity to imagine how our physical campus—our buildings, walkways, and open spaces—can advance our noblest goals: to improve the human condition and serve the public good.

In this Facilities Master Plan, we imagine a campus that serves our students with better and more ample spaces for learning, discovery, and interaction; a campus that encourages collaboration between disciplines and schools and speeds the translation of discoveries from bench to bedside; a campus that binds us more closely to one another and to our neighbors and partners in Baltimore.

On the north end of campus, we will transform outdated buildings and vacant lots in a way that creates cohesion while accommodating future development. We will continue to strengthen UMB's identity within Baltimore by establishing clearer streetscape connections and reinforcing major gateways to campus. We will partner with city institutions and agencies to build a vibrant and safe Westside community—a place that's rich in art, culture, and entertainment and in the creative people they attract.

UMB is a beacon for people committed to improving human health and well-being. They deserve a campus that facilitates this work, as does everyone who relies on that work each day. And so I'm indebted to the large group of stakeholders—inside and outside the University—who mapped this way forward for us all.





Design UMB's campus at two scales

- 25 minutes – campus focused design
 - Use building footprint pieces and markers to
 - Where should certain program elements be s
 - What anchors north campus?
- 15 minutes – larger urban context relationship
 - Use icons and markers to diagram connections
 - How does the University promote relationships
 - How does the University promote relationships

Introduction

The 2016 University of Maryland, Baltimore (UMB) Facilities Master Plan is the culmination of many ideas generated through a rigorous planning process that involved the active participation of a diverse range of stakeholders. It is intended to be a framework for physical planning of the campus over the next 10 years and beyond. The plan grows from a comprehensive and inclusive analysis of the existing campus and its ability to support the University's mission and strategic plan. The plan expresses a vision that encourages innovation and collaboration while responding to the increased needs of UMB's educational, research, and service missions through renovation, redevelopment, and new construction of facilities. It seeks to create a vibrant, urban environment that attracts the best students, faculty, and staff and supports the University's ongoing role as an anchor for the community and leader in sustainable practices. Finally, the plan underscores the need for significant investment in the existing physical plant to ensure that it continues to support the University's record of excellence.

Founded in 1807, UMB is a 71 acre, approximately 6.9 million gross square feet (GSF)* health sciences and human services campus in downtown Baltimore. UMB is Maryland's only public health, law, and human services university. There are seven schools that comprise UMB: dentistry, law, nursing, medicine, social work, pharmacy, and the Graduate School. These schools confer the majority of health care, human services, and law professional degrees in Maryland each year. The larger University community includes partner institutions such as the University of Maryland Medical Center (UMMC), the Veterans Affairs Medical Center (VA), the University of Maryland BioPark, Faculty Physicians, Inc., sports and entertainment venues, retail, offices, apartments, and residential neighborhoods.

** Total square footage of buildings and garages owned by UMB.*

Purpose of the Report

The 2016 UMB Facilities Master Plan identifies current and projected physical space needs for the University and provides a general strategy and recommendations for the future development of the campus. The recommendations suggest building footprints, program locations, landscape and open space networks, circulation, transportation, parking, and utilities. The foremost goal of the Master Plan is to establish a framework for future development that aligns with and supports the Strategic Plan and mission of the University.



Work group members engaged in the planning process.

Master Planning Process

To develop the Master Plan, the planning team organized the process into three major phases:

- Data gathering, needs analysis, and existing conditions assessment
- Development of plan alternatives
- Final plan development

Guiding the planning process was an Executive Committee, composed of the UMB president, deans, and vice presidents. The Executive Committee was responsible for setting direction and approving the different components of the plan. The plan's development was managed by a Work Group consisting of representatives from each school and major administrative department, as well as the student government association, and faculty and staff senates. This group met regularly to provide information, develop options, and guide the development of the final plan. The process also involved participation and input from others in the campus community, adjacent institutions, nearby neighborhoods, and Baltimore City agencies through a series of formal meetings and informal open forums.

Individuals and groups involved in the planning process:

- President
- Deans
- School of Dentistry
- Carey School of Law
- School of Nursing
- School of Medicine

- School of Social Work
- School of Pharmacy
- Graduate School
- Vice Presidents
- Students (Open Forums)
- Student Government Association
- Faculty Senate
- Staff Senate
- University of Maryland Medical Center (UMMC)
- Veterans Affairs Medical Center (VAMC)
- UMB BioPark
- Southwest Partnership
- Facilities Management
- Auxiliary Services
- Parking and Transportation
- Baltimore City Planning Department
- Baltimore City Department of Transportation
- Baltimore Development Corporation
- Downtown Partnership of Baltimore
- Lexington Market
- Internal community (open forum)
- External community (open forum)

During the planning process, three community forums were held to solicit feedback from internal and external campus stakeholders. The first open forum was held during the day in the Southern Management Corporation Campus Center and mostly attracted faculty, staff, and students. The second open forum

was held in the evening at Westminster Hall and mostly attracted neighbors and community members. The third open forum was back in the Campus Center and attracted a mix of community members and internal stakeholders. These community forums were interactive and allowed those who attended to share their thoughts about the campus, verbally and diagrammatically, through a series of stations organized around planning themes and facilitated by members of the planning team. The forums also exposed all stakeholders to the Facilities Master Plan and its process. All three forums were advertised through email and direct invites to external community groups.

Planning Assumptions

The University System of Maryland provides Facilities Master Plan Guidelines for all campuses within the system. As stated in the Guidelines, a Facilities Master Plan establishes a framework for orderly growth and development of capital improvements on campus. It is responsive to the institution's current and projected needs and sufficiently flexible to accommodate changes that can be expected to occur. The plan describes the optimal, desired development of available land, consistent with the approved mission statement of the institution. The plan looks inward as well as outward and addresses those issues that benefit the campus and its surroundings. A serious environmental commitment to the concept of reducing greenhouse gas emissions and combating climate change, for instance, is an ongoing theme. The Facilities Master

Plan is a working document that will require consistent evaluation and periodic updates. Furthermore, though the goals of the plan should have temporal components to encourage their achievement, the plan is not tied to a commitment to a specific timetable for the funding or completion of projects. That occurs as part of the university system's capital budgeting process.



Community open forums in the Southern Management Corporation Campus Center.



“To improve the human condition and serve the public good of Maryland and society at-large through education, research, clinical care, and service.”

UMB'S MISSION



Institutional Profile and Space Needs Analysis

A man with a shaved head, wearing blue scrubs, is sitting on a red office chair in a hospital or clinical setting. He has his arms crossed and is smiling. The background shows medical equipment, including overhead lights and other chairs, in a blue-tinted environment.

UMB's Vision

The University will excel as a pre-eminent institution in its missions to educate professionals, conduct research that addresses real-world issues affecting the human condition, provide excellent clinical care and practice, and serve the public with dedication to improve health, justice, and the public good. The University will become a dominant economic leader of the region through innovation, entrepreneurship, philanthropy, and interdisciplinary and interprofessional teamwork. The University will extend its reach with hallmark local and global initiatives that positively transform lives and our economy. The University will be a beacon to the world as an environment for learning and discovery that is rich in diversity and inclusion. The University's pillars of professionalism are civility, accountability, transparency, and efficiency. The University will be a vibrant community where students, faculty, staff, visitors, and neighbors are engaged intellectually, culturally, and socially.

Strategic Plan

During the first phase of the facilities master plan process, UMB updated the Strategic Plan. UMB's 2017–2021 Strategic Plan is an integrated strategy to guide UMB's next leap forward over the next five years. The proposed Facilities Master Plan is in alignment and reflects the priorities of the Strategic Plan.

1. HEALTH, JUSTICE, AND SOCIAL IMPACT

Deepen and expand local and global engagement by providing health, legal, and social work programs, and engaging in research to promote social justice and improve health.

2. RESEARCH AND SCHOLARSHIP

Harness the power of research and scholarship to deepen understanding of systems, institutions, and basic and translational sciences in the search for solutions to complex problems impacting individuals, families, and communities.

3. STUDENT SUCCESS

Design contemporary teaching and learning environments that are accessible and affordable to prepare students to be exemplary professionals and leaders in society.

4. INCLUSIVE EXCELLENCE

Foster an environment that recognizes and values each member of the UMB community, enabling members to function at their highest potential to achieve their personal and professional goals.

5. PARTNERSHIP AND COLLABORATION

Collaborate internally and externally to provide impactful education, services, and expertise to benefit Maryland and society at-large.

6. EFFICIENCY, EFFECTIVENESS, AND ASSESSMENT

Incentivize efficiency, effectiveness, and assessment to make more responsible and impactful use of UMB's resources.



NO TRASH PLEASE!

Sustainability

UMB is a signatory of the American College & University Presidents Climate Commitment and completed its first Climate Action Plan in 2009. In this plan, UMB outlined a number of practices to reduce the campus' greenhouse gas emissions and promote environmental sustainability more broadly across the University. In 2016 this plan was supplemented with an update that outlined actions the University will take to address climate resiliency. These updated measures include flooding and hurricane preparedness, redundancy planning for major utility systems, various approaches to mitigating the urban heat island effect, and a process for coordinating with neighboring communities.

UMB strives to integrate environmental sustainability, particularly as it relates to energy efficiency, landscaping, and transportation, into the day-to-day operations of the campus. More specifically, UMB consistently incorporates green building practices into capital projects, promotes a variety of transportation options, and works to increase the campus' tree canopy and pervious surfaces. Sustainability principles have been, and will continue to be, integrated into the design, planning, and operations of the University.

Campus History

The University of Maryland's health and human services campus in downtown Baltimore began in the early 19th century as independent schools that educated physicians, dentists, pharmacists, lawyers, and nurses. In 1807, the State General Assembly established the founding element, the College of Medicine of Maryland, which was re-chartered as the University of Maryland in 1812. In the following years, several schools were consolidated under the governance of the University of Maryland. After 1920, consolidation continued with the merger of the University of Maryland in Baltimore and the (then) Maryland State College of Agriculture in College Park as the public University of Maryland under a state appointed Board of Regents. In the middle of the 20th century, the need for graduate education in the medical and social services profession resulted in the formation of additional programs in graduate education and social work.

SCHOOL OF MEDICINE

John Beale Davidge, MD, James Cocke, MD, and Mr. John Shawe founded the School of Medicine in 1807. At their own expense, the three built a medical laboratory behind Davidge's house on Saratoga Street. That same year, they petitioned the Maryland State Legislature to establish the College of Medicine on a firm basis and under the protection of the law. Legislators approved a charter incorporating the College of Medicine in Maryland and authorized a lottery to finance construction of a building



School of Medicine

to house the school. Dr. Davidge became the first dean and took the chair in surgery. In 1810, a class of five young men was awarded the first Doctor of Medicine degrees; in 1812, the school was re-chartered as the founding school of the University System of Maryland. The School of Medicine is the fifth oldest medical school in the country.

The University's first true academic building was Davidge Hall. Built in 1812 on land purchased from John Eager Howard that was then "quite some distance from town," Davidge Hall is now located in the heart of campus. Having the distinction of being the oldest building in the United States used continuously for medical teaching, Davidge Hall remains the only tangible evidence of how medicine was taught in this country in the early 19th century. In 1997, Davidge Hall was designated a National Historic Landmark.

From its inception, the School of Medicine has placed strong emphasis on bedside teaching. Accordingly, in 1823, a hospital was formed for the express purpose of clinical instruction—the first such institution established by a medical school. The Baltimore Infirmary, as it was known until 1896 when it became University Hospital, also was the site of the first intramural residency program in the United States.

In 1960, the school relocated most of its programs from the small buildings in the vicinity of Davidge Hall to the six-story Howard Hall. This was followed by a series of construction projects: the 14-story Bressler Research Building (1976), the 10-story Medical School Teaching Facility (1978), the Allied Health Professions Buildings (1992), the Health Sciences (research) Facility, Phase I (1995), and the Health Sciences Research Facility II (2003). Construction of Health Sciences Research Facility III is



Francis King Carey School of Law

scheduled to be completed in June 2018, adding approximately 429,000 GSF of research and related spaces to the UMB inventory.

FRANCIS KING CAREY SCHOOL OF LAW

At the beginning of the 19th century in Maryland, a prolific legal writer and commentator named David Hoffman helped to formalize legal instruction by persuading the state legislature to found the Law Institute at the University of Maryland in 1813. His contribution to legal instruction included a comprehensive Course of Legal Study, whose influence extended well beyond Maryland. The Hoffman program was quickly adopted by other law school professors around the country. Hoffman was also an early advocate of promoting ethical behavior among lawyers, giving rise to his enduring reputation as the father of American legal ethics. Through Hoffman's influence, instruction at Maryland's first law school

began in 1824. After a hiatus, it resumed in earnest in 1868 and has continued to grow in breadth and recognition to the present day.

The Francis King Carey School of Law is one of the oldest law schools in the nation, but its innovative programs make it one of the liveliest and most dynamic. Maryland Law stands among five other professional schools on the University of Maryland, Baltimore campus. It has taken advantage of this location to become an integral part of the Baltimore-Washington legal and business community.

The spirit of innovation at the school of Law co-exists with a strong appreciation of tradition. In 1983, the School spearheaded an effort with community leaders to restore the historic Westminster Church and Graveyard, home of the gravesite of Edgar Allan Poe. In subsequent years, the school renovated the historic 19th century Baltimore



School of Dentistry

Male Grammar School No. 1 to create the Maryland Bar Center and provide unique and attractive quarters for the Maryland State Bar Association and several public-interest attorneys. In 2002, the school moved into its state-of-the-art facility.

SCHOOL OF DENTISTRY

Formal education to prepare students for the practice of dentistry originated in 1840 when the Baltimore College of Dental Surgery (BCDS) was chartered by the General Assembly of Maryland. This represented

the culmination of the efforts of Dr. Horace H. Hayden and Dr. Chapin A. Harris, two dental practitioners who recognized the need for systematic formal education as the foundation for a scientific dental profession. They played a major role in establishing and promoting formal dental education and in the development of dentistry as a profession.

BCDS served as a prototype for dental schools gradually established in other American cities and originated the pattern of modern dental education, with equal emphasis on sound knowledge of general medicine and development of the skills of dentistry. Through the prominent role of its faculty and graduates and their contributions to dental and medical progress, the BCDS has exerted a remarkable influence on professional dentistry.

The present dental school evolved through a series of consolidations involving the Baltimore College of Dental Surgery, Maryland Dental College, founded in 1873; the Dental Department of the University of Maryland, founded in 1882; and the Dental Department of the Baltimore Medical College, founded in 1895. The final consolidation took place in 1923, when the BCDS and the Dental Department of the University of Maryland were combined to create a distinct college of the university under state supervision and control. In 2006, the School of Dentistry moved into a new, 367,000 GSF state-of-the-art building that provides the spaces and formats necessary to teach dental education and conduct research in the 21st century.



School of Pharmacy

BCDS has preserved artifacts from dentistry's past in its own collection, which is on permanent loan to the Dr. Samuel D. Harris National Museum of Dentistry located on the UMB campus.

SCHOOL OF PHARMACY

The School of Pharmacy, founded in 1841, is the direct descendant of the Maryland College of Pharmacy. It is the fourth oldest school of pharmacy in the nation and as the first pharmacy school in the South, the college operated as an independent institution at various locations in Baltimore until 1904, when it merged with the University of Maryland as the Department of Pharmacy. The School of Pharmacy was instituted in 1920 with formation of the present University System of Maryland. The school occupied a then modern building that it shared with the Dental School

from 1928 to 1958, when most of its programs moved to the former Dunning Hall, built for Pharmacy's specific use. In 1982, the school moved to its present location, Pharmacy Hall, and expanded into several other campus facilities, including the Pharmacy Learning Center, completed in 1998, and the Saratoga Building, completed in 2004. An addition to Pharmacy Hall was completed in 2010, adding approximately 138,000 GSF of research, teaching, and administrative space to the school's inventory.

SCHOOL OF NURSING

The School of Nursing was established as the Maryland Training School in 1889 under the direction of Louisa Parsons, a graduate of Florence Nightingale's Nursing School at St. Thomas' Hospital in London. By providing training in the University Hospital, the school's



School of Nursing

graduates became active in establishing the Maryland Nurses' Association and the Maryland State Board of Examiners. Many graduates were decorated for meritorious services to the country in World War I, a reflection of the military origins of the modern nursing profession. In 1920, the program became part of the University of Maryland and provided early leadership for the development of baccalaureate education in nursing. By 1952, a four-year curriculum leading to a Bachelor of Science in Nursing had been established, and the school became an autonomous unit of the University. Programs for master's and PhD degrees developed soon afterward, and today the school ranks as one of the best in the country.

In November 1998, the School opened its state-of-the-art facility, recognized as a model for the integration of research, teaching, and practice. Over one-third of this 154,000 GSF, comprehensive research,

instructional, and patient care facility is dedicated to research space for clinical, behavioral, health policy, and health services research. The school uses its 470-seat auditorium for instruction and special events. A computer teaching theater, informatics laboratories, and multiple computer stations afford faculty and students a technology- and media-rich environment in which to teach and learn.

THE GRADUATE SCHOOL

The Graduate School was established in 1917. In 1985, the University of Maryland Graduate School, Baltimore (UMGSB) was formed, merging the graduate programs at UMB and the University of Maryland, Baltimore County (UMBC) to combine the resources and expertise of outstanding facilities and faculties on both campuses. In 1995, the UMGSB was divided into autonomous administrative units at each campus. The administrative offices of



The Graduate School

the Graduate School are located in the Lexington Building. Most students and faculty reside in their respective campus schools. Additionally, in 2017 the Graduate School will open a facility in the UM BioPark, where students from all schools will have the opportunity to interact and learn from BioPark entrepreneurs.

SCHOOL OF SOCIAL WORK

The School of Social Work, the youngest school on the UMB campus, was established in 1961 in response to a long-recognized need within the state for professional education in social work. Early accreditation and close working relationships with the City of Baltimore, the Maryland Department of Human Resources, the federal VISTA training program, as well as others, resulted in the strong early development of the school. By 1970, it was seventh largest school of social work in the country.

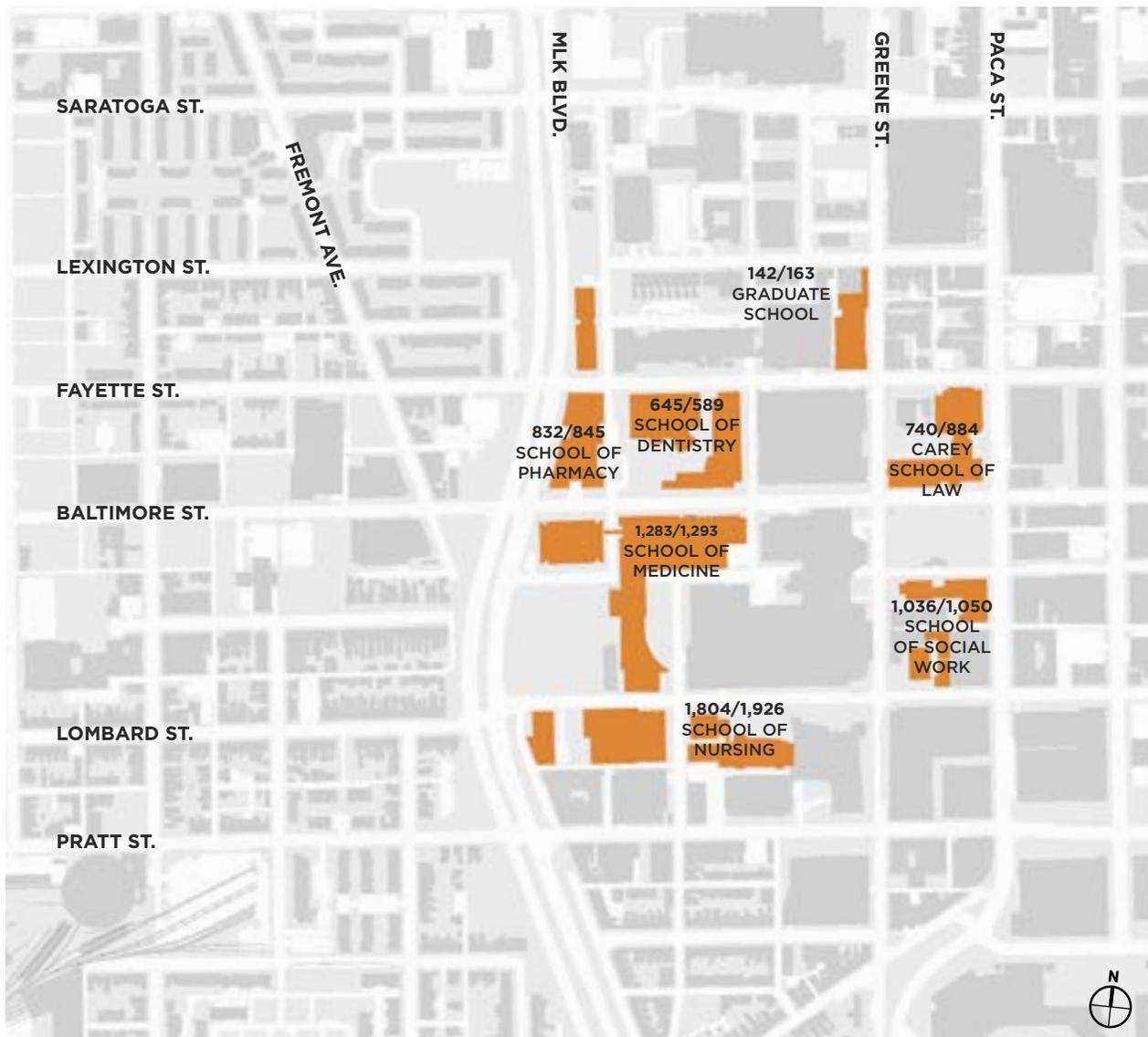


School of Social Work

In 1967, the school moved from scattered locations across campus into the renovated former Law School Building and, in 1983, occupied a substantial new addition to the building that was designed specifically for the school. In 2002, the school opened the Hilda Katz Blaustein Research Center in the new Law/Social Work facility located across University Plaza Park from its main building complex.

Campus Enrollment

Over the past five years, the total enrollment growth across the campus has remained steady, but is projected to grow over the next 10 years. The total FTE enrollment in FY 2016 was 6,419 students and is projected to rise to 6,455 students by FY 2026, a 0.6% increase. In terms of headcount, there is a projected increase of 4.1% between FY 2016 and FY 2026. The largest projected growth by school is the Graduate School. While enrollment on the UMB campus is projected to remain relatively constant, off campus programs, notably online education and at the Universities at Shady Grove, are expected to grow substantially over the next 10 years.



ACTUAL 2016 HEADCOUNT ENROLLMENT AND ESTIMATED 2026 PROJECTION

Academic Building

Campus Faculty and Staff

From 2011 to 2016 the total faculty FTE has grown by 188 and the total faculty headcount has grown by 160. For employees within the schools, the FTE was reduced by 75 and the headcount was reduced by 415. For administrative units, the FTE increased by 18 but the headcount decreased by 33.

CURRENT AND FUTURE FTE ENROLLMENTS BY SCHOOL

	<i>FY 2010 Actual</i>	<i>FY 2015 Actual</i>	<i>FY 2016 Actual</i>	<i>FY 2026 Estimate</i>	<i>FY 2016- FY 2026 % Change</i>
School of Dentistry	796	729	719	688	-4.3%
Carey School of Law	1,082	812	778	791	1.7%
School of Medicine	1,321	1,343	1,351	1,385	2.5%
School of Nursing	1,438	1,413	1,456	1,453	-0.2%
School of Pharmacy	799	947	948	920	-3.0%
School of Social Work	945	1,106	1,110	1,134	2.2%
Graduate School	-	17	57	84	47.4%
CAMPUS TOTAL	6,381	6,367	6,419	6,455	0.6%
Shady Grove Programs	418	459	453	558	23.2%
TOTAL WITH SHADY GROVE	6,799	6,826	6,872	7,013	2.1%

CURRENT AND FUTURE HEADCOUNT ENROLLMENTS BY SCHOOL

	<i>FY 2010 Actual</i>	<i>FY 2015 Actual</i>	<i>FY 2016 Actual</i>	<i>FY 2026 Estimate</i>	<i>FY 2016- FY 2026 % Change</i>
School of Dentistry	696	638	645	589	-8.7%
Carey School of Law	964	706	740	884	19.5%
School of Medicine	1,322	1,307	1,283	1,293	0.8%
School of Nursing	1,708	1,728	1,804	1,926	6.8%
School of Pharmacy	717	842	832	845	1.6%
School of Social Work	988	1,000	1,036	1,050	1.4%
Graduate School	-	108	142	163	14.8%
CAMPUS TOTAL	6,395	6,329	6,482	6,750	4.1%
Shady Grove Programs	492	499	552	716	29.7%
TOTAL WITH SHADY GROVE	6,887	6,828	7,034	7,466	6.1%

Summary of Space Needs

On the campus level the University of Maryland, Baltimore, along with the other University System of Maryland institutions¹, uses the Space Guidelines Application Program (SGAP) to provide key information regarding University-occupied buildings. Information provided in the SGAP includes space by type, condition, renovation and replacement costs, net assignable square footage, and gross square footage. Using current and projected demographic and course information, the SGAP also estimates current and projected space needs. The campus currently owns 2,364,000 net assignable square feet (NASF) but, based on demographics, the campus needs 3,428,000 NASF. This deficit of 1,064,000 NASF is mostly comprised of research lab space and office space. Based on a 10-year projection, the campus will need 3,656,000 NASF by the year 2026.

Based on changing trends in higher education, many space metrics used to calculate current and future needs have evolved since the last Facilities Master Plan. Space needs are typically based on peer metrics, industry standards, space guidelines, FTE counts and projections, proven trends, and best practices. Rightsizing the amount of space on campus will not happen overnight; instead it will be a process involving planning, coordination, commitment, funding, and perhaps a change in operations. An example of operational change includes considering ways to share spaces among schools

including classrooms, special event space, testing space, and study space. The SGAP analysis shows an increased need in study space that facilitates student learning and discovery in a modern setting. These types of spaces include a variety of private, open, and group study spaces; maker spaces, technology-rich spaces, and collaboration areas rather than rows of stacks.

Another change in space needs since the last Facilities Master Plan includes different ways of approaching research space. In the past, all SGAP research space needs were generated using the same metric across all institutions and various research types, including space for wet lab, experimental, clinical, and computational research. Revised guidelines, adopted in 2016, were created to align more realistically with the dominant types of research which occur in the health sciences. The revised guidelines resulted in the creation of a state approved health sciences module. The use of this new module has resulted in a more than 40% reduction UMB's reported research space deficit.

The remaining deficit is forcing UMB to lease 389,000 NASF off campus. This includes 52,000 NASF of lab space and 179,000 NASF of office space. While some of this space is ideally located off campus to accommodate programmatic needs, the bulk of it represents leased spaces that accommodate departments that don't have enough space on campus.

¹ St. Mary's College of Maryland and Morgan State University also use the SGAP for State space reporting.

UMB 2016 SGAP SPACE NEEDS²

Space Description	Existing Inventory	Current Allowance	Current Surplus/ (Deficit)	Ten Year Projection (2026)			
				Change to Inventory	Projected Inventory	Projected Allowance	Projected Surplus/ (Deficit)
Classroom & Class Lab	210,000	240,000	(30,000)	-	210,000	247,000	(37,000)
Research Lab	523,000	1,221,000	(698,000)	184,000	707,000	1,307,000	(600,000)
Office	759,000	1,019,000	(260,000)	28,000	787,000	1,092,000	(305,000)
Study/Library	131,000	155,000	(24,000)	1,000	132,000	162,000	(30,000)
Athletics	23,000	65,000	(42,000)	-	23,000	70,000	(47,000)
Support	9,000	14,000	(5,000)	-	9,000	15,000	(6,000)
Animal Quarters	51,000	51,000	-	33,000	84,000	84,000	-
Assembly & Exhibit	32,000	31,000	1,000	-	32,000	32,000	-
Food	10,000	10,000	-	-	10,000	10,000	(0)
Lounge	73,000	115,000	(42,000)	8,000	81,000	123,000	(42,000)
Rec & Meeting	54,000	54,000	-	-	54,000	54,000	-
Central Services	96,000	122,000	(26,000)	10,000	106,000	129,000	(23,000)
Health	65,000	3,000	62,000	-	65,000	3,000	62,000
Other	133,000	133,000	-	-	133,000	133,000	-
Residential	195,000	195,000	-	-	195,000	195,000	-
TOTAL	2,364,000	3,428,000	(1,064,000)	264,000	2,628,000	3,656,000	(1,028,000)

TABLE KEY

■ Significant SGAP space needs

²Select space types rounded to the nearest 1,000 NASF

Space Needs By School

In addition to identifying comprehensive campus space needs through SGAP, individual space needs studies were conducted for each school.

CAREY SCHOOL OF LAW

The Carey School of Law is predominately in the Law and Social Work Building. Additional space is also located in the 300 Russell Street Building, Baltimore Grand Garage, Maryland Bar Center, and Westminster Hall. Over the past five years, enrollment has been decreasing. However, the headcount increased in 2016 and enrollment is projected to increase over the next 10 years.

The space assessment indicates that the school is in relative balance compared to its existing space for both the baseline (Fall 2015) and the target growth.

The Carey School of Law requires having its own library to remain accredited with the American Bar Association. Currently the stack space within the Marshall Law Library is at 95% capacity and has limited opportunities to condense existing shelving in order to free up floor space.

SCHOOL OF NURSING

The School of Nursing has had notable changes in its research activities, enrollment projections, and space inventory. These changes have resulted in a shortage of research space and a reduced demand for instructional spaces.

While there is less than a 1% decline in FTE enrollment projected over the next ten years, headcount enrollments over the last couple of years have dramatically increased and will continue to increase. Long term, the school will need to be creative about incorporating more collaborative space within its building and will need to look for access to additional classroom space outside of its building as well.

SCHOOL OF PHARMACY

Pharmacy is located in four facilities on the UMB campus: Saratoga Building (offices), Pharmacy Hall (instruction and research), Pharmacy Learning Center (instruction), and Health Sciences Facility II (research). Its enrollment has been growing steadily over the past five years. Its newest facility is the Pharmacy Hall addition which opened in 2009. This addition has served its occupants and the school very well. Even though the school is spread out among the four buildings it has managed to create successful synergies within each building. Even with the 4% increase in enrollment, the school is in relative balance for space, now and in the near future.

SCHOOL OF SOCIAL WORK

Excluding leased space, the School of Social Work is located in three buildings: the Law/Social Work Building; Social Work East; and Social Work West. Since its last major capital project, Social Work has experienced growth in research activity, enrollment, and employees, of which all create a need for



additional space. The most notable area is the need for office space. Some of this need is being met through leased facilities. Presently, instructional space is sufficient, but if the enrollment continues to increase there will be a need for more instructional space. The need for study/collaboration may be present in the future as well.

SCHOOL OF DENTISTRY

The School of Dentistry has experienced a moderate decline in enrollment during the past five years but expects a small increase over the next five years. The school receives four times the national average in applications. The school's strength is its

location in Baltimore and proximity to other major cities. This will generate a need for more instructional space. However, the majority of Dentistry's space needs is in research laboratory and related space. Other spaces needed by the school include study space and clinical break-out spaces.

SCHOOL OF MEDICINE

In Fall 2016, the School of Medicine (SOM) had headcount enrollment of 1,283 students. Headcount enrollment is projected to increase almost 1% over the next ten years but FTE enrollment is projected to increase 2.5%. The School currently needs additional research, vivaria, and office space



as well as on-site collaboration/study space and a large meeting venue. With student and research growth, the need for these spaces will only increase.

SOM research space is dynamic and at a premium. A lot of disparity in quality exists among research labs. Renovated research labs have increased capacity and efficiency whereas the labs that have not been renovated are not efficient and are lacking in capacity. In addition to wet labs, there is a need for behavioral research areas and dry labs for bioinformatics. Some of the core facilities need to be expanded in addition to a need for new core facilities. Part of the research needs include vivaria space, which is

currently insufficient. Health Science Facility III (HSF III) will provide relief in this area.

RESEARCH LABS

For schools with intensive lab space, a deeper look at research lab space metrics was conducted. On the departmental level the number of wet lab modules allotted per principal investigator (PI) is dependent on the group size of individuals working in their lab. The standard size for a typical module assumes 3-4 people per module with wet lab bench space, write-up space, circulation space, and lab support space totaling 150-200 sf per FTE. Over and above this metric is space for core labs, vivarium, PI offices, conference rooms, and break rooms.



Also, research has evolved from strictly all wet/experimental space to a mix of dry/computational space. Dry research labs do not require as much space as wet labs and should be accommodated with a lower space metric. Departmental needs are constantly in flux depending on grant funding. The schools are continuously working to reassess, quantify, and move departments based on their changing needs.

GRADUATE SCHOOL AND INTER-PROFESSIONAL EDUCATION

The continued growth of the Graduate School is exciting and will be a key part of UMB's future space needs. The emergence of inter-professional education (IPE) will

continue to be a positive influence on health sciences education. Future space requirements for these areas include faculty and staff offices, flexible classrooms, simulation facilities, informal gathering/group learning spaces, creative "maker" areas, and smaller breakout rooms.

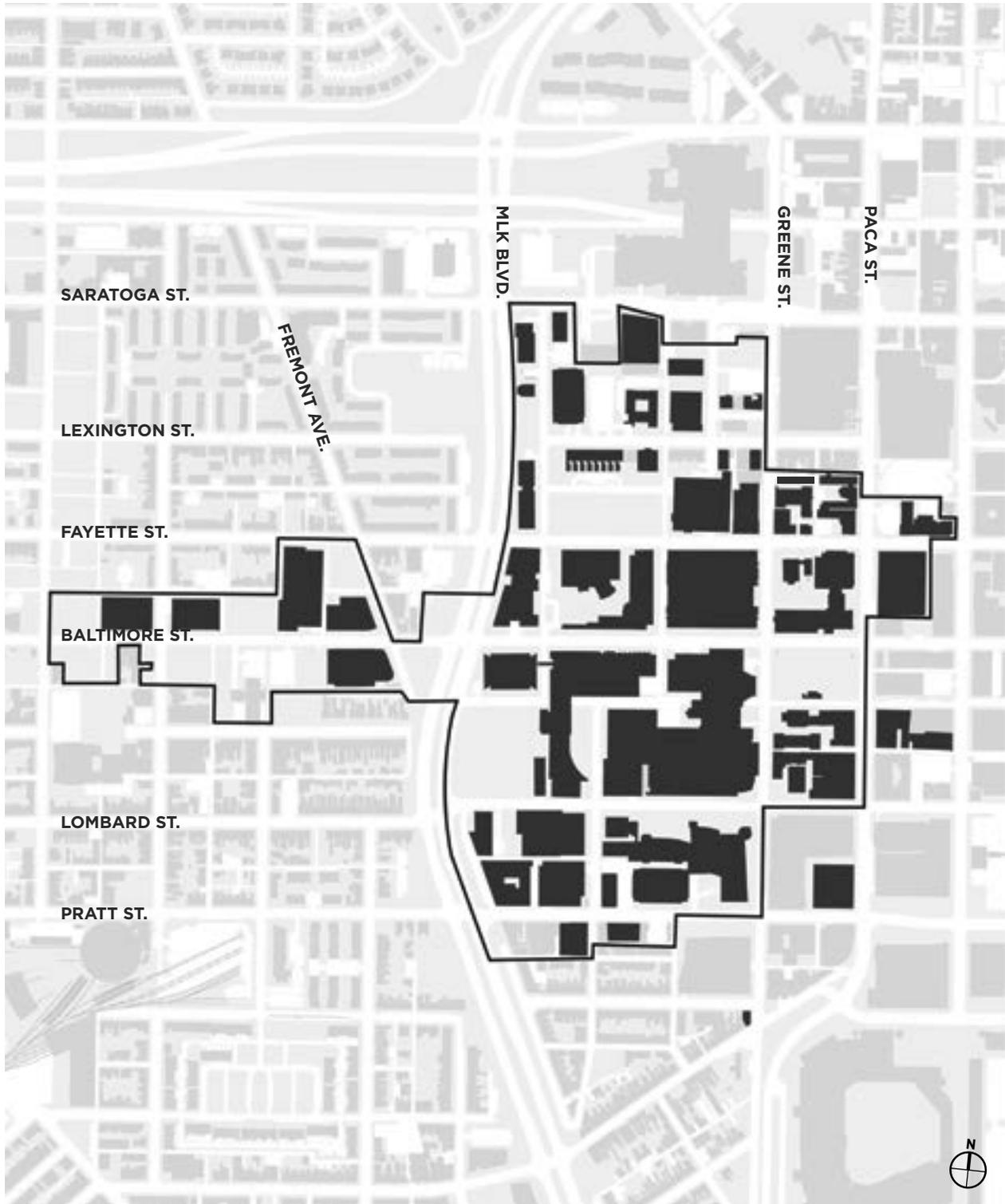




Existing Conditions

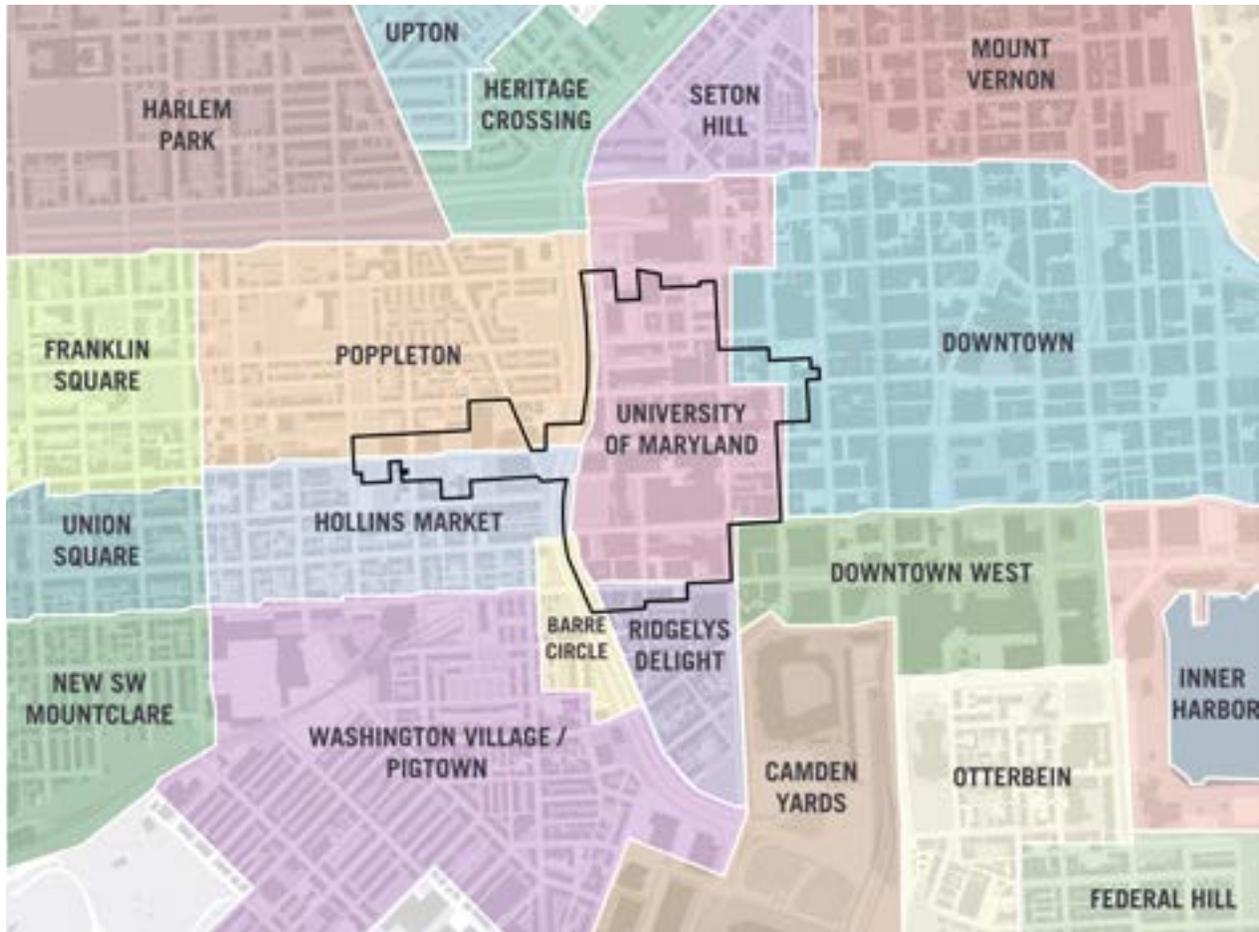
The University of Maryland, Baltimore encompasses a 71-acre health sciences and human services campus in downtown Baltimore. This urban University has matured over two centuries to 67 buildings across campus. The broader University community includes partner institutions, commercial and mixed-use retail, sports and entertainment venues, apartments, and neighboring historic residential neighborhoods.

Two major medical facilities, the University of Maryland Medical Center (UMMC) and the Veterans Affairs Medical Center (VAMC), are located in the heart of campus. The central location of these institutions generates a large number of patients and visitors to campus.



EXISTING CONDITIONS

- General Extent of UMB, UMMC, VAMC, and BioPark
- UMB Buildings, Partner Institutions, and Buildings of Immediate Influence



Adjacent Neighborhoods

Adjacent Neighborhoods and Areas of Influence

While the University is situated seamlessly in the fabric of downtown Baltimore, a few implied boundaries exist. These boundaries include Saratoga Street to the north, Pratt Street to the south, Paca Street to the east, and Martin Luther King Jr. (MLK) Boulevard to the west. MLK Boulevard generally serves as the western boundary for the University, although the affiliated University of Maryland BioPark extends the western boundary across MLK along Baltimore Street to Schroeder Street. The BioPark is nestled in the Hollins Market and Poppleton neighborhoods. These

neighborhoods, in addition to Pigtown and Barre Circle to the southwest and Seton Hill to the north, are all in various stages of transition into more stable communities. The University is committed to working with these communities to help bring about improvements and encourage safe environments. South of campus is Ridgely's Delight, a stable, historic residential neighborhood. East of campus is Howard Street, a once vibrant north-south commercial corridor that now creates a significant barrier between the campus and

downtown. The Howard Street corridor also separates the University from Mount Vernon, a historic Baltimore neighborhood that continues to stretch the development of new residential units southwest toward UMB.

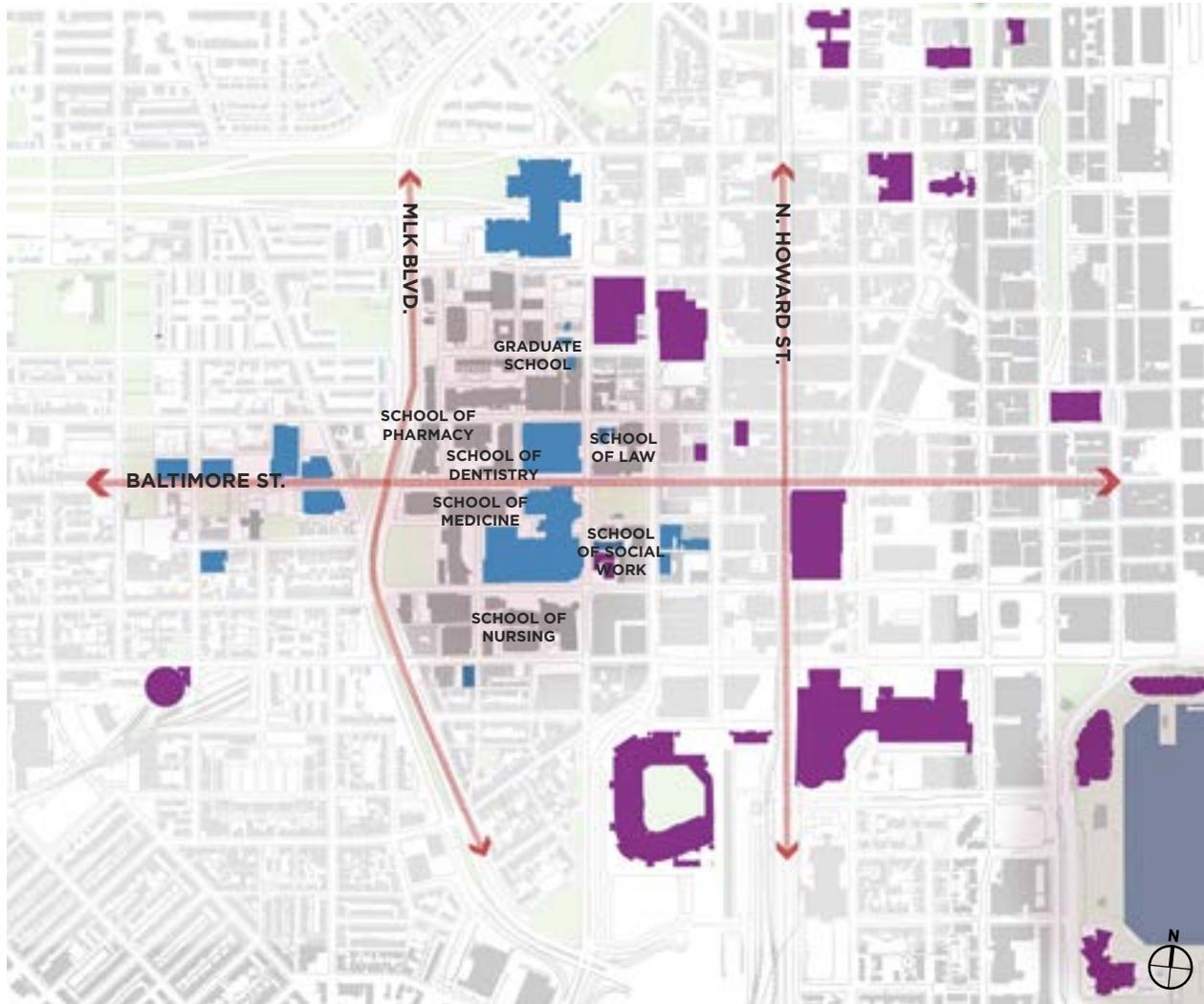
Six blocks southeast of UMB is Baltimore's Inner Harbor. The Inner Harbor is the largest open space in downtown, providing major recreational opportunities and serving as the center of activity and tourism in Baltimore. It includes hotels, retail, the National Aquarium, University of Maryland Columbus Center, the Maryland Science Center, and more. In addition to the Inner Harbor, M&T Bank Stadium and Oriole Park at Camden Yards are two major entertainment amenities close to the southern edge of campus.

Lexington Market is a commercial anchor on the northeast corner of campus. As one of the largest and oldest markets in the country, it has the opportunity to become a vibrant retail neighbor for the campus. Much needed improvements to Lexington Market are planned to provide a safe and attractive retail experience for the campus community and the residents living in the surrounding neighborhoods. As a major institutional anchor, UMB is committed to improving Baltimore, particularly the communities along the campus edges, and has been involved in the UniverCity Partnership that brings together UMB and Baltimore City. UMB is also involved in the Downtown Partnership of Baltimore, the Bromo Tower Arts and Entertainment District, and the Market Center Merchants Association, representing the 300 plus businesses within the Market Center

area and promoting commerce, retaining and attracting business, and enhancing the customer and residential experience.

To the west of campus, UMB is one of the founding members of the Southwest Partnership, comprised of seven neighborhoods and six institutions working together to build a cohesive community that is "awesome, healthy, architecturally beautiful" and is "built on mutual respect and shared responsibility." (Southwest Partnership Vision Statement). The UMB Community Engagement Center (CEC), located on West Baltimore Street west of MLK Boulevard, was created to give West Baltimore residents a place to access services promoting neighborhood and economic development. The CEC strives to bring the University and neighboring communities together to solve complex and persistent problems that exist in West Baltimore.

North of campus is Metro West, a former location for the Social Security Administration. Vacant since 2014, the 1.1 million square foot property was recently purchased by developer who is in the process of recruiting a major tenant for the property. This could result in new and exciting partnership opportunities for UMB and promote a vibrant northern edge.



PARTNERS AND RESOURCES

- Partner Institutions
- Cultural and Public Resource

Partner Institutions

Located within the UMB campus core is the University of Maryland Medical Center (UMMC), including the world-renowned R. Adams Cowley Shock Trauma Center, and the Veterans Affairs Medical Center (VAMC). They occupy the two large city blocks bounded by Lombard Street to the south, Greene Street to the east, Fayette Street to the north, and Arch and Penn Streets to the west. UMMC is part of the larger University of Maryland Medical System (UMMS), including the following

additional buildings on the UMB campus: 29 South Greene Street, 701 West Pratt Street, and the Paca Pratt Building on the northwest corner of Paca and Pratt Streets. The UMMC Midtown Campus is located just 1 mile north and is accessible by Light Rail.

The VAMC facility was originally designed in the 1970s to serve 150,000 outpatient visits per year, but by 1994 the facility had 242,000 outpatient visits per year and has continued increasing services ever since. Further, its research activities have grown beyond the space available in the building. As a result, VAMC leases additional space downtown and has been undergoing renovation projects within its facility to alleviate some of the overcrowding. The VAMC is looking for other opportunities to expand beyond its current facility.

Faculty Physicians, Inc. (FPI) is the private practice organization for the School of Medicine's clinical faculty and provides outpatient care services in a series of facilities along Redwood Street, between Paca and Eutaw. FPI also offers family practice services and student and employee health services in the Marlboro Square Loft building at the northeast corner of Lombard and Paca Streets. The FPI facilities are completely occupied, and there is no room for much needed expansion of private outpatient services. At the same time, the existing facilities are in need of major upgrades and modernization.

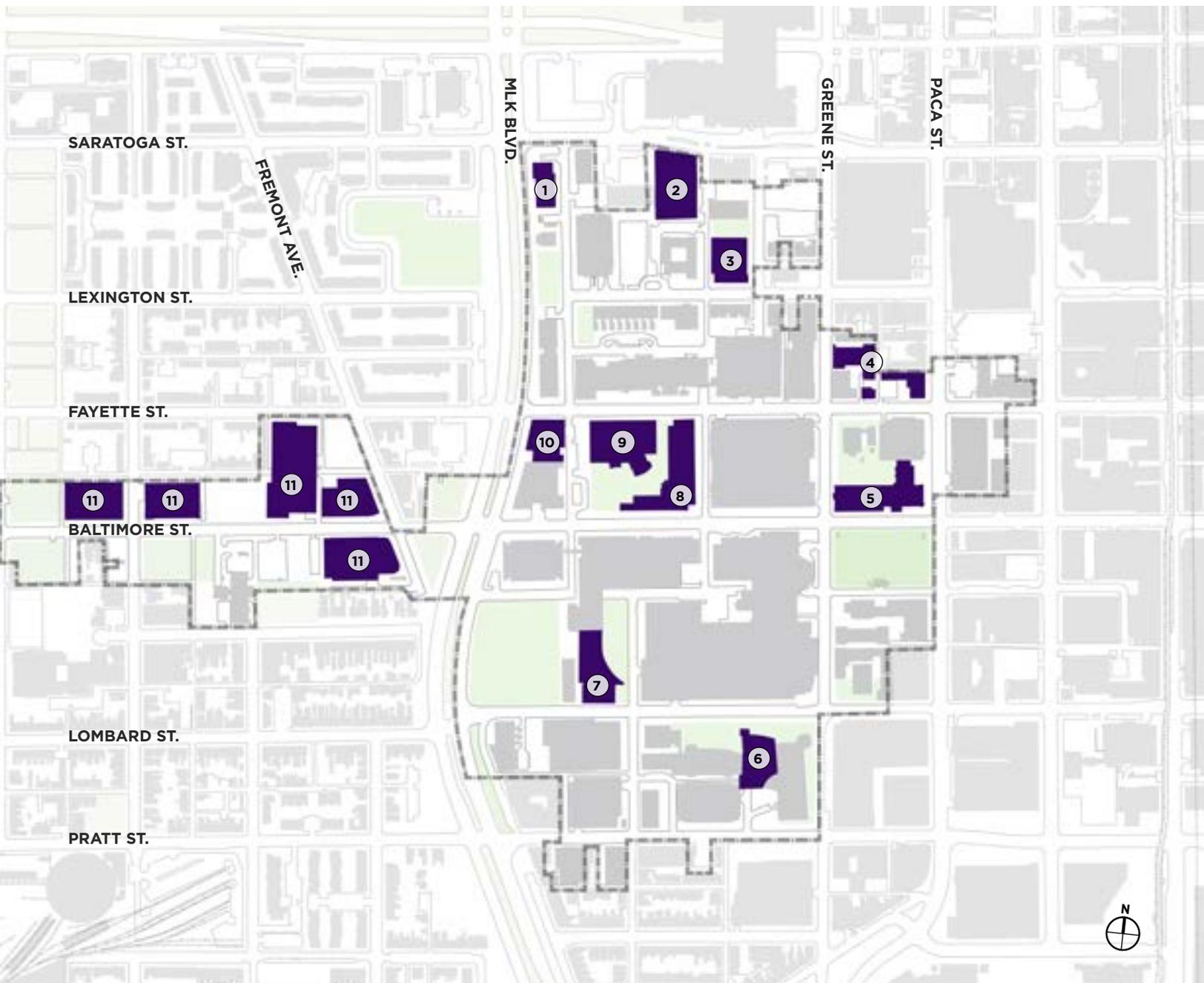
The UM BioPark is a collaborative biomedical research and discovery campus across MLK Blvd, immediately to the west of the UMB campus. The BioPark's mission is to accelerate the commercialization of new technologies and discoveries and promote economic development in the community and region. It is home to many UMB programs, private companies, the State of Maryland's new Forensic Medical Center, and the Maryland Proton Treatment Center. In addition, the BioPark has retail and open space amenities and is dedicated to supporting community development initiatives. The 12-acre BioPark is planned to become a campus of 12 buildings totaling 1.8 million GSF, building a community of science in partnership with UMB.

The Maryland Strategic Partnership: MPowering the State is a collaboration between the state of Maryland's two most powerful public research institutions: UMB and the University of Maryland, College Park (UMCP). It leverages the sizable strengths and complementary missions of both institutions to advance interdisciplinary research, create opportunities for students, and solve important problems for the people of Maryland and the nation. Working together, UMB and UMCP achieve innovation and impact through collaboration. The University of Maryland Strategic Partnership Act of 2016 strengthened and formalized the structured relationship between UMB and UMCP. The law deepens the alliance and energizes UMB and UMCP to pursue even greater transformative change and impact, far surpassing what each university could do independent of the other.

Development Since 2001

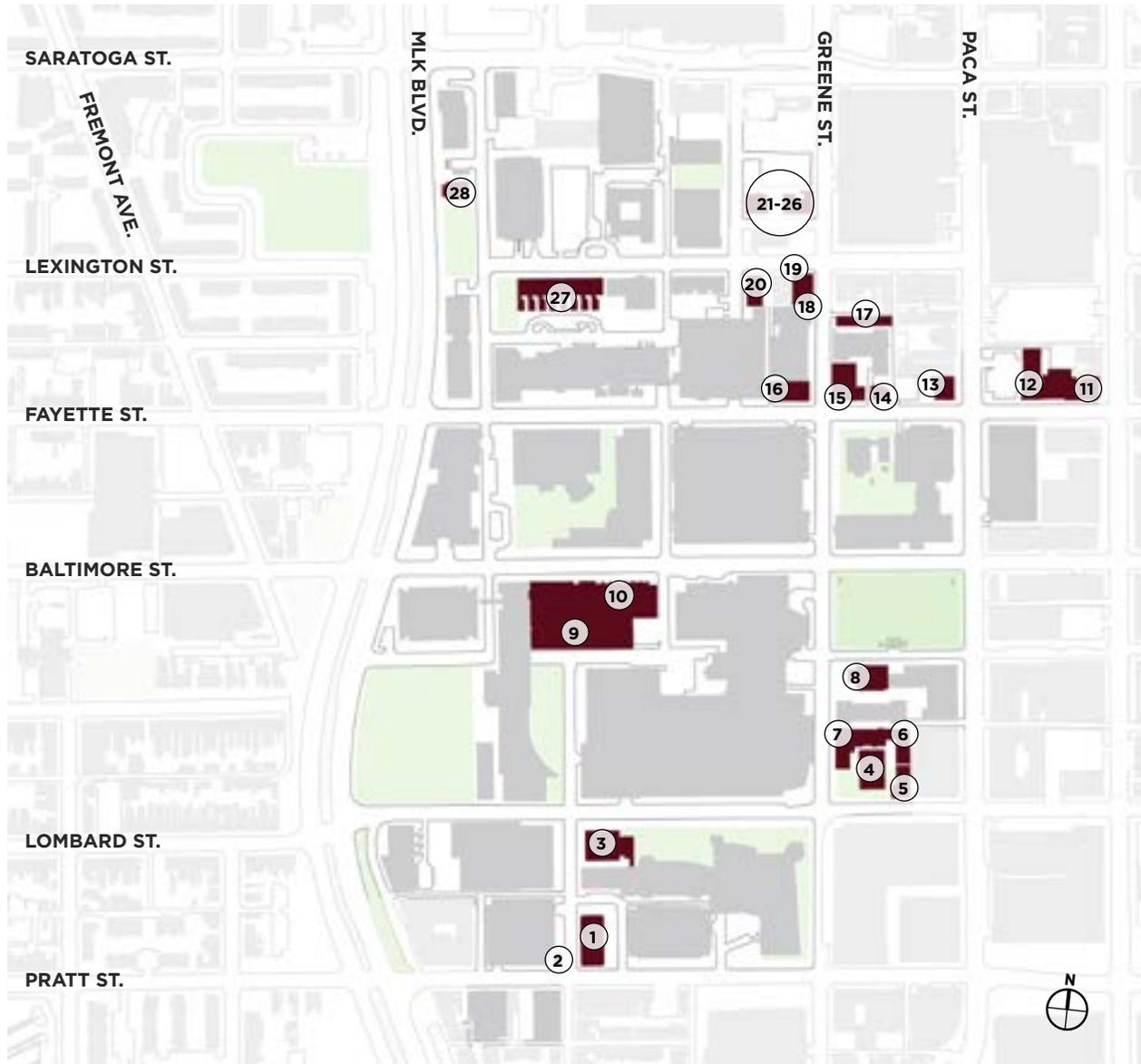
The UMB campus originated with construction of the College of Medicine, now Davidge Hall, in 1812 at the northeast corner of Greene and Lombard Streets. In the subsequent two hundred years, the University grew incrementally at first and rapidly during the 20th century. A full history of campus development, from 1812 to 2000, may be found in the 2001 Facilities Master Plan. Since 2001, the University has continued its growth by completing several new projects including:

- 2002** ● Nathan Patz Law Center
Thurgood Marshall Law Library
- 2003** ● Health Sciences Facility II
- 2004** ● Pine Street Annex
Saratoga Building & Garage
University Suites at Fayette Street
- 2006** ● School of Dentistry
- 2008** ● Lexington Building
- 2009** ● Pharmacy Hall Addition
Southern Management Corporation
Campus Center
- 2017** ● Health Sciences Facility III



DEVELOPMENT SINCE 2001

- | | |
|--|---------------------------|
| 1 Pine Street Annex | 7 HSF II |
| 2 Saratoga Building | 8 School of Dentistry |
| 3 Lexington Building | 9 HSF III |
| 4 University Suites at Fayette Square | 10 Pharmacy Hall Addition |
| 5 Carey School of Law | 11 BioPark |
| 6 Southern Management Corporation Campus Center. | |



HISTORIC RESOURCES (GREATER THAN 50 YEARS)

1 General Research Building	11 Drivers and Mechanics National Bank	21 600-602 West Lexington Street
2 Community Outreach Police Station	12 Sons of Italy Building	22 604 West Lexington Street
3 School of Nursing	13 Baltimore General Dispensary	23 610 West Lexington Street
4 Davidge Hall	14 Eddy Building	24 612 West Lexington Street
5 East Hall	15 Maryland Bar Center	25 614 West Lexington Street
6 George Gray Hall	16 Swiss Steam Laundry Building	26 616 West Lexington Street
7 National Dental Museum	17 H.C. Walterhoefer Building	27 Pascault Row Housing
8 School of Social Work - West	18 601 West Lexington Street	28 Pine Street Station
9 Howard Hall	19 603 West Lexington Street	
10 School of Medicine Building	20 613-615 West Lexington Street	



Pascault Row



100 N. Green Street



214 N. Pine Street

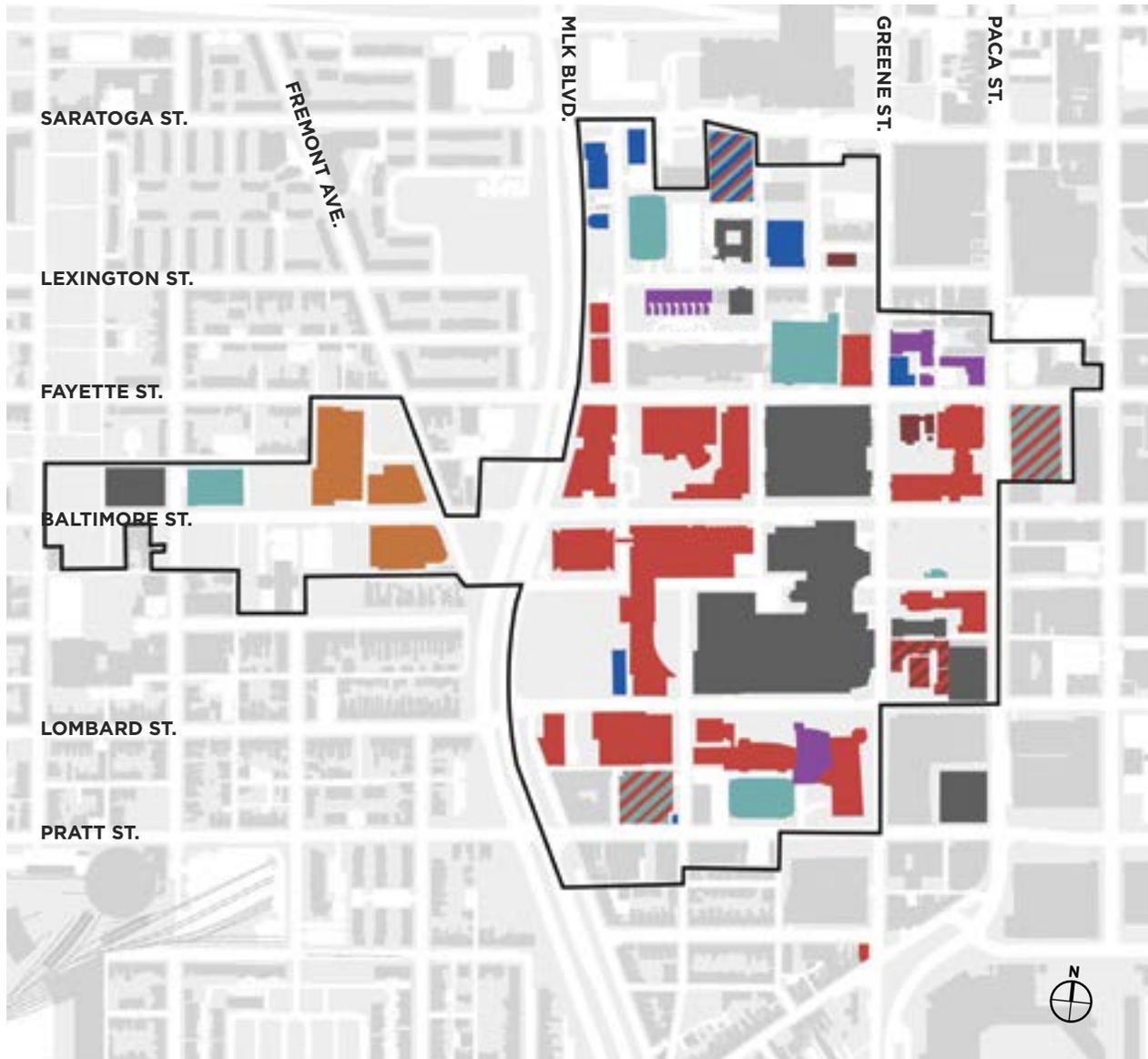
Facilities Analysis and Campus Character

HISTORIC RESOURCES

The history of buildings and districts in and around UMB is rich. Davidge Hall, named after the first dean of the College of Medicine of Maryland, is the oldest building in the United States in continuous use for medical education. Westminster Cemetery, adjacent to the University’s Carey School of Law, is the burial site of Edgar Allan Poe. St. Paul’s Cemetery, at Redwood and Martin Luther King Boulevard, is the second oldest cemetery in Baltimore, originally laid out in 1799. Samuel Chase, signer of the Declaration of Independence, John Eager Howard, General George Armistead of Ft McHenry fame, and Robert Carey Long, architect of Davidge Hall, are buried here. Pascault Row on Lexington Street is one of the few remaining examples of early 19th century townhouses in downtown Baltimore. The Queen Anne style terraced brick Rieman Block at the southwest corner of West Lexington and Pearl Streets records a post-Civil War Baltimore. The Old Western District Police Station at 214 North Pine Street is a

piece of quintessential brick Victorian Gothic architecture from the late 1870s. The Swiss Steam Laundry Company at 100 North Greene Street is an example of Romanesque Revival-style architecture built in 1895.

In addition to physical structures, parts of the campus fall within three different National Register Historic Districts (the North and South Loft Districts, Market Center Historic District, and Ridgley’s Delight Historic District), which include 19 manufacturing buildings dating between 1870 and 1915. These buildings are architecturally stunning and capture the history of Baltimore’s garment industry that grew to national renown.



BUILDING USE

- Campus Life
- Administration / Campus Support
- BioPark
- Academic Support / Research
- Medical Center / Health Care Related
- Historical / Cultural
- Parking

BUILDING USE

The majority of UMB buildings are not single use facilities; they tend to house a mix of academic, research, administrative, and support activities. Each school has a building or series of buildings that contain functions to support its needs, but there are other buildings across campus, such as the Southern Management Corporation (SMC) Campus Center and Health Sciences and Human Services Library (HS/HSL), that serve the entire campus.

ACADEMIC AND RESEARCH

Academic, research, and related support functions mostly exist within buildings assigned to specific schools. The majority of these buildings are located in a ring around UMMC and the VA. This area is the academic core of campus and includes buildings for the schools of dentistry, law, medicine, nursing, pharmacy, and social work as well as the Health Sciences and Human Services and the Thurgood Marshall Law Library.

PATIENT CARE

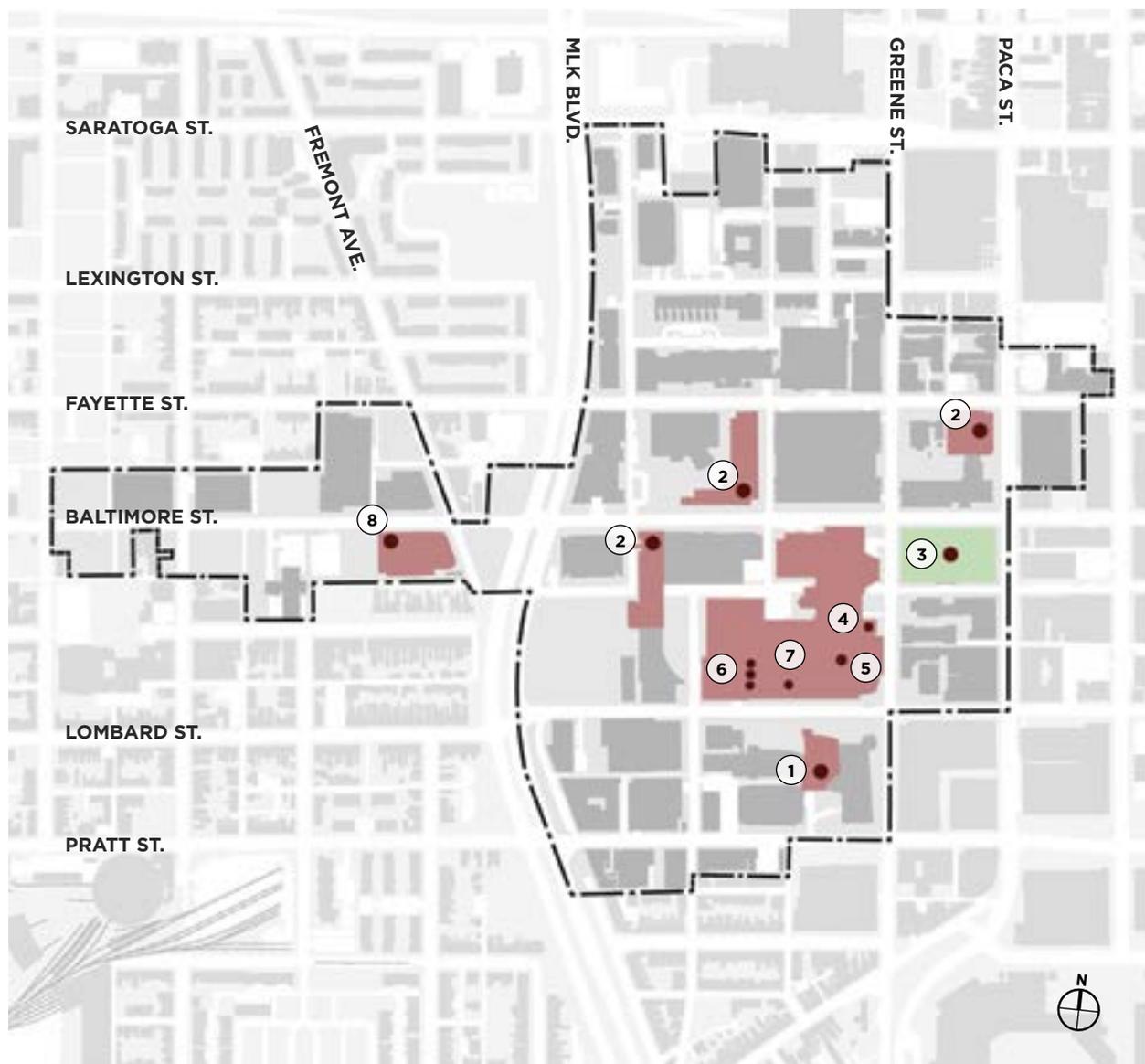
UMB provides a variety of clinics that serve Baltimore City, the state, and the region. The schools of dentistry, nursing, social work, and law all have clinics located on and off campus. The School of Medicine provides patient care in the University of Maryland Medical Center and Veterans Affairs Medical Center as well as in buildings along Redwood Street and Penn Street. It also has clinics off campus at sites across Baltimore and Maryland.

SUPPORT SERVICES

Support services exist mainly along the northern edge of the campus. Most administrative functions are located north of Fayette Street. Administrative space in this area includes the Lexington Building, the ground and first floors of Pearl Street Garage, two office levels of Saratoga Garage, Pine Street Annex, and the Pine Street Station. Inefficient pedestrian access to and from the core of campus makes this area of campus feel disconnected from the greater campus community.

HOUSING

On-campus housing consists of the University Suites at Fayette Square and Pascault Row, totaling 405 beds. It has been the tradition of UMB to have student housing provided by the private sector. As a result, the residential on-campus community is small and leads students to find housing off-campus, which in turn disperses the student population to other neighborhoods in Baltimore and the surrounding suburbs. This presents challenges to creating a vibrant and safe campus community especially during the evening hours and on weekends. However, there are opportunities for public/private partnerships to increase affordable and safe student housing close to the campus, which would contribute to enhancing the UMB neighborhood. The Drovers Bank site is an example of this type of partnership.



CAMPUS DINING OPTIONS

1. Culinart To-Go / Culinart Café
2. Crema Coffee Café and Deli
3. Farmers Market
4. Au Bon Pain
5. The Great Cookie
6. Cypriana Café / Mamma Iardo's Pizzeria / Subway
7. Courtyard Café
8. Café Gourmet

STUDENT LIFE

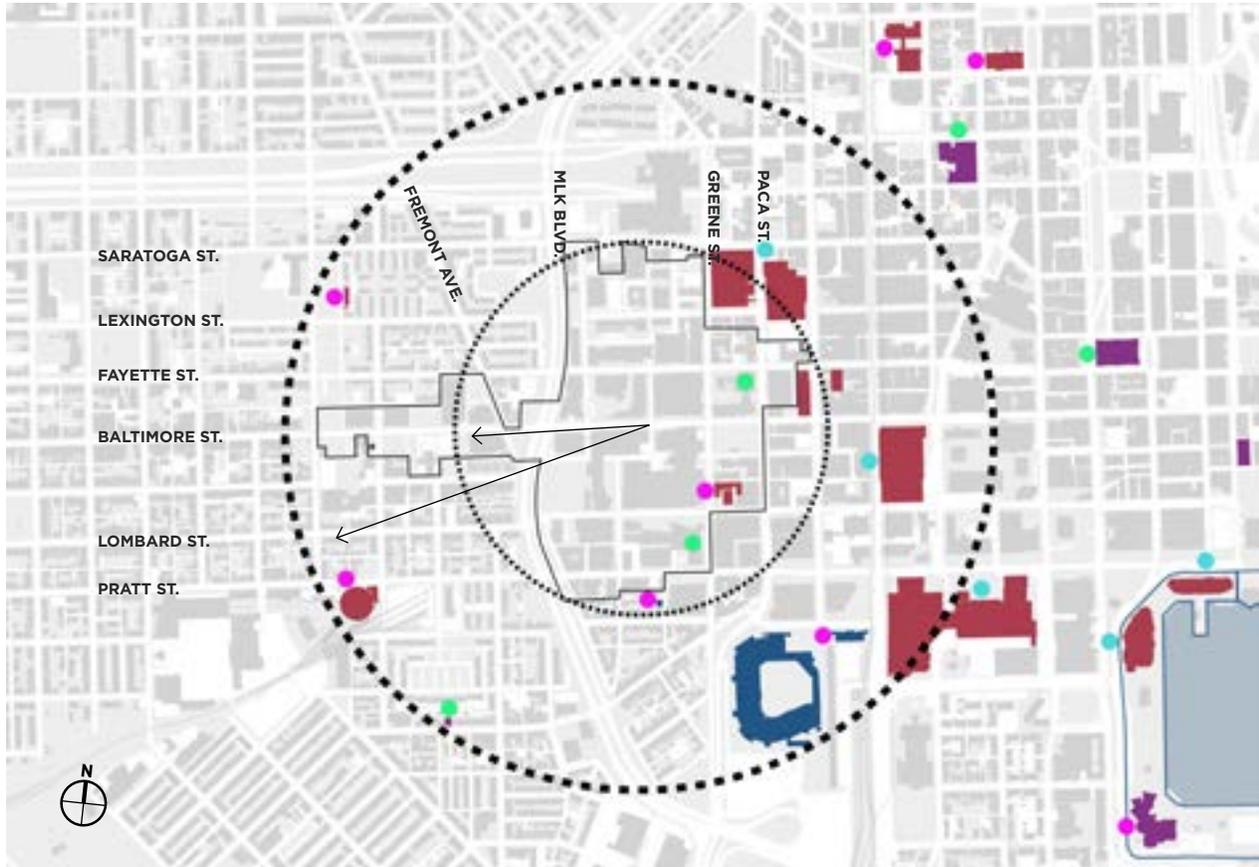
The majority of student life functions are situated around the perimeter of campus, while teaching, research, and clinical practices are concentrated in the central academic core. The Southern Management Corporation Campus Center is the most popular hub for student life on campus. It is adjacent to the Health Sciences and Human Services Library, creating one of the few areas on campus that offers places for



CAMPUS AMENITIES

students from the various schools to meet, interact, and learn from each other. The Southern Management Corporation Campus Center provides space to study, socialize, exercise, and eat. Resources at the Southern Management Corporation Campus Center include academic coaching, Relaxation Zone, a café, coffee shop, the URecFit Center, and the campus bookstore. Other food services on campus are located in the University of Maryland Medical Center, VA Medical Center,

Carey School of Law, School of Dentistry, and Health Sciences Facilities I (HSF I). The Health Sciences and Human Services Library also provides a place for all students across disciplines to meet, study, and learn. Together, these facilities create a hub of activities to serve students, faculty, and staff across the University and encourage cross-pollination among schools.



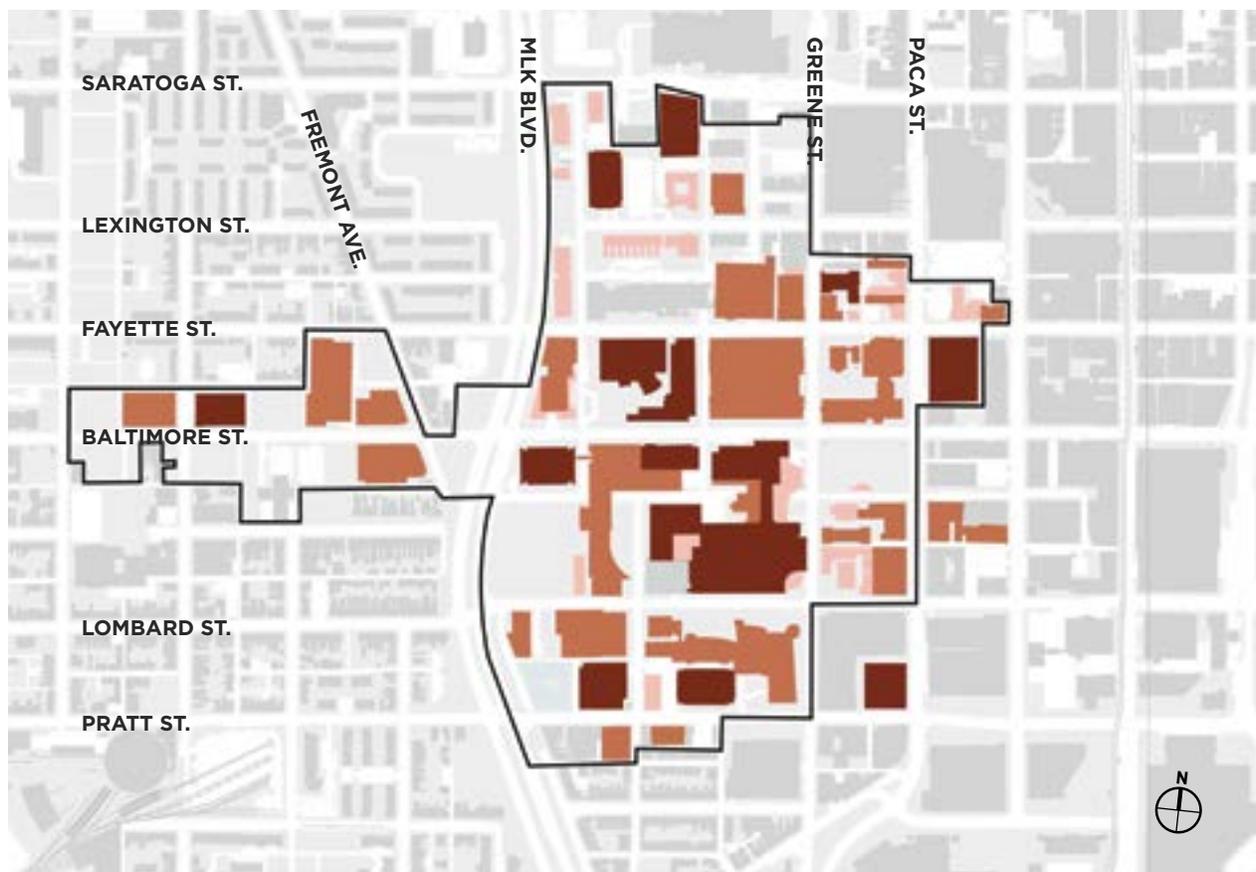
PLACES OF INTEREST

- Educational
- City Attraction
- Recreation
- 5 Minute Walking Radius
- 10 Minute Walking Radius
- Museum
- Commercial
- Library

NEIGHBORHOOD AMENITIES

UMB is adjacent to the Bromo Tower Arts District and near a number of art and recreational facilities. The presence of a variety of institutions such as the Hippodrome Theatre, Everyman Theatre, Oriole Park at Camden Yards, the Royal Farms Arena, and the Inner Harbor are an asset to UMB. Improved connections to nearby cultural institutions would help create a more vibrant campus environment. The

400 block of West Baltimore Street and Eutaw Street across from the Hippodrome Theatre provides the few dining options in close proximity to the campus.



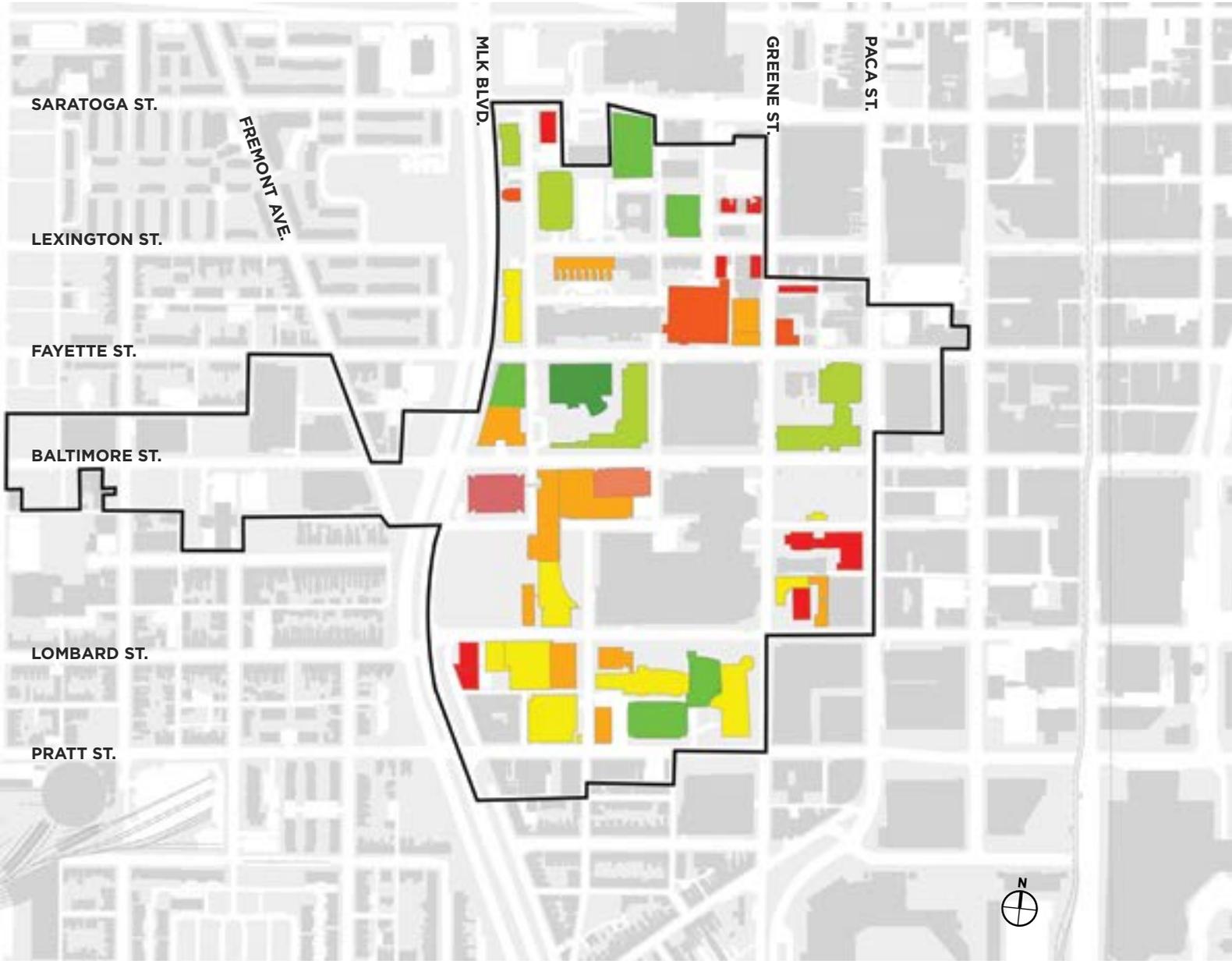
BUILDING HEIGHT



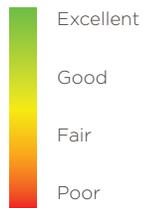
BUILDING HEIGHT

Sitting immediately west of downtown, most of UMB's campus has a dense, urban feel. The prevalence of brick cladding and traditional architecture fits seamlessly into the fabric of Baltimore City. The campus consists of buildings with varied heights, from high-rise research and teaching facilities to small-scale support buildings. While there is a variety of building heights, the majority of the taller buildings are situated

in the central academic core, with buildings stepping down in height as they reach the edges of campus. The construction of Health Sciences Facility III (HSF III) emphasizes this pattern, as the campus adds another high-rise research facility in the academic core. Outliers include parking garages that average eight stories toward the edge of campus. As a whole, the verticality of major campus buildings emphasizes the campus presence in Baltimore.



BUILDING CONDITION



BUILDING CONDITION

UMB has recently invested in new buildings such as HSF III, the School of Dentistry, Pharmacy Hall Addition, and The Southern Management Corporation Campus Center, yet there are many existing structures that are in need of renewal and reinvestment. More than 46% (1.9 million GSF) of state-owned campus space is located in buildings that are more than 25 years old. These aging buildings continue to deteriorate while in daily use, housing research programs and classes. As a result, the facilities renewal backlog is large, more than \$600 million in 2016 dollars, and the building deficiencies are profound. They include critical building infrastructure such as mechanical systems – chillers, cooling towers, building automation and elevators; electrical distribution systems; and exterior components such as, roofs, building walls, windows, masonry and entry door systems.

Across the University, the quality of space is inconsistent among UMB's older buildings. Also, several buildings have inefficiencies due to their age and/or original design. This presents an opportunity to re-think the way space is used on campus to support modern teaching pedagogies, research trends, and cohort sizes. Examples of buildings in poor condition include the Medical School Teaching Facility (MSTF) and the School of Social Work. Built in 1978, MSTF was designed to create an austere street level environment. MSTF needs interior and exterior renovations to function more efficiently and better serve the campus. The School of Social Work is also an aging facility that does not support a collaborative learning environment.

It is in need of extensive renovations or a new building to resolve overcrowding and poor conditions.

Other buildings, such as the School of Nursing and the School of Dentistry, although not that old, are in need of partial renovations to improve the quality of their space or to accommodate changes in operations. The School of Nursing is embarking on a multi-phase renovation of its older north wing and is also in need of infrastructure investments such as a more efficient HVAC system and new windows. The School of Dentistry wants to reconfigure the ground floor of the Dental School Building to improve the entry, enlarge some classrooms, enhance the clinics, and better utilize space.

ZONING

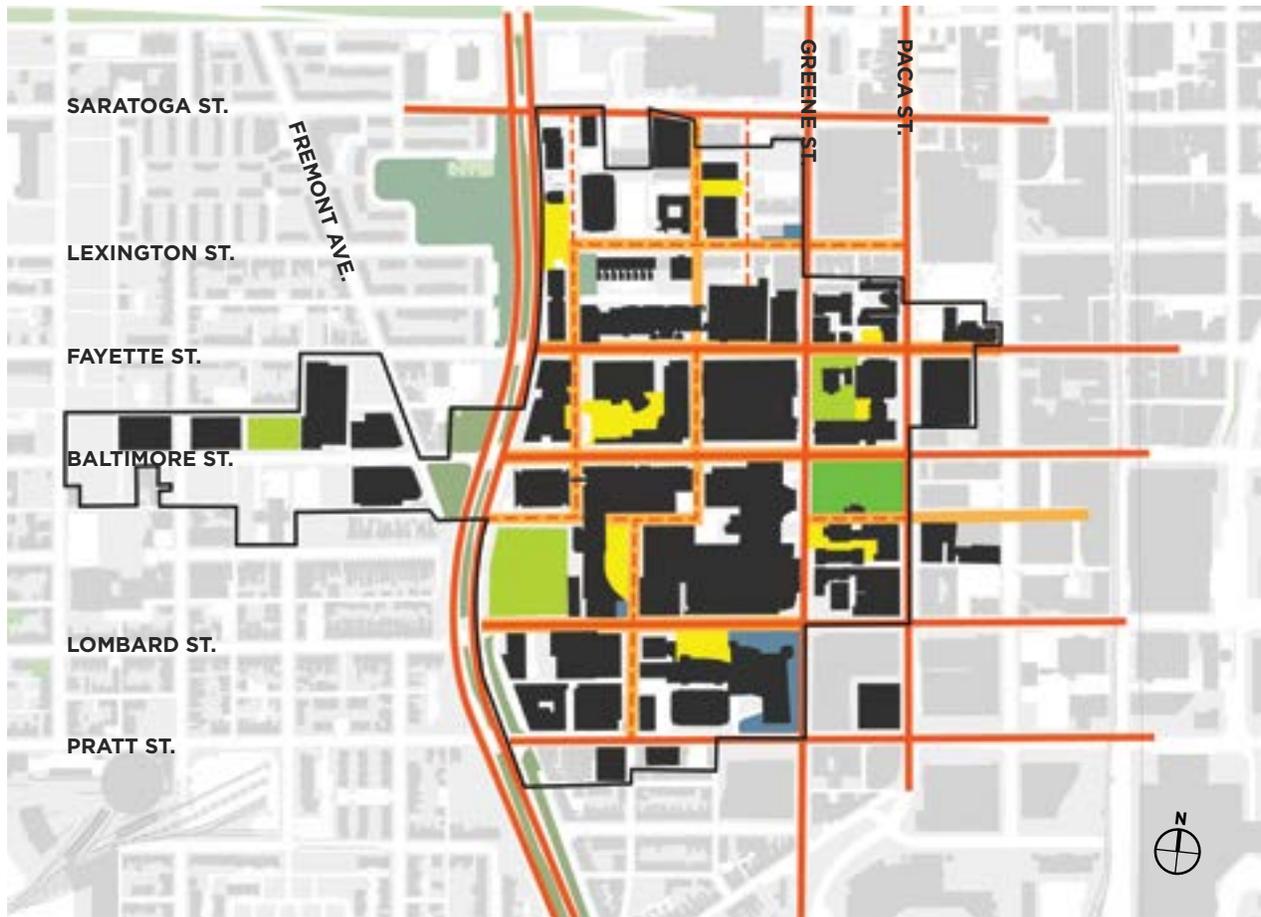
The University by its nature as a state agency is not subject to the Baltimore City Zoning Code. However, zoning does apply in certain instances including partnership projects with developers and utility projects in public right-of-ways. Baltimore City recently adopted a new zoning code, which establishes the majority of campus as a Downtown District (C-5 zone), with the properties south of Pratt Street designated as Neighborhood Business Zoning district (C-1) and properties within the BioPark designated as Bio-Science Campus Zoning Districts (BSC) or Rowhouse and Multi-Family Residential Zoning Districts (R-8). The C-5 zone specifies a minimum building height of 36 feet and does not specify maximum height limits in the overall downtown core.



School of Nursing green space



School of Dentistry streetscape



LANDSCAPE TYPOLOGIES

- Urban Connector Streets
- Campus Connector Streets
- Pedestrian Routes
- Plazas
- Courtyards
- University Plaza Greenspace
- Inward-Focused Greenspace
- MLK Drive Landscape

Landscape Analysis

OPEN SPACE

As an urban campus, the UMB landscape is primarily defined by streetscapes and walkways. Within each city block, the landscape components consist of smaller scaled spaces including plazas and courtyards. This diversity of spaces enhances the UMB aesthetic experience while also providing an opportunity for a comprehensive open space framework to accommodate the wide needs of campus.

University Plaza Park is the singular defining large-scale open green located on campus and has significant opportunity for improvement. Although it is currently divided into a series of small planters and paved walkways, University Plaza Park has great potential because of its visible, central location and scale. UMB also has several successful courtyards and plazas, including the School of Nursing Courtyard, the School of Law Courtyard, and the Southern Management Corporation Campus Center Plaza. They include a combination of fixed and movable seating, plants that do not overwhelm the scale of the space, and consistent material palettes set within the defined campus-wide aesthetic. The HSF III plaza, currently under construction, promises to be another successful urban plaza.

STREETSCAPE

UMB's use of consistent design and materials has helped unify the campus by establishing a clear identity within the larger urban setting along its streetscapes. These streetscapes

can take many forms including pedestrian malls, like Redwood Street, and walkways defined along building's edges, like Arch Street adjacent to the School of Dentistry.

The urban design guidelines call for a select group of materials, although there are some variation pavement patterns across campus. There are a handful of places on campus where the design guidelines and some minor tweaking of street trees and green skirts is needed to improve the overall look and feel of campus. The images below show the dramatic difference on two sections of Paca Street, one with consistent street trees and green skirts, the other without.



Paca streetscapes

Circulation Analysis

Campus circulation and activity are divided between the northern and southern sectors of campus, with the majority of activity occurring south of Fayette Street. All of UMB's schools, the Southern Management Corporation Campus Center, and HS/HSL Library are located in this area of campus, resulting in a significant concentration of students, faculty, and staff. Students and faculty typically do not frequent the northern portion of campus unless it is for parking or to visit an administrative office. The southern sector of the campus also includes partner institutions (UMMC and VAMC) that bring a significant number of patients and visitors to the heart of campus.

North of Fayette Street, there is a significant decrease in campus activity. Administrative offices, support services, and four major parking garages are all located on the northern half of campus. Most of the pedestrian activity in this area consists of people walking to and from their cars to the southern half of campus and to and from administrative offices. Lexington Market offers great potential as a historic market immediately adjacent to campus, and the proposed changes to the Market will hopefully curtail the illegal activities and loitering that occurs inside and outside the Market.

Baltimore Street is an active corridor for campus, especially as retail expands east from University Plaza Park. UMB students, faculty, and staff are commonly seen frequenting the restaurants along Baltimore

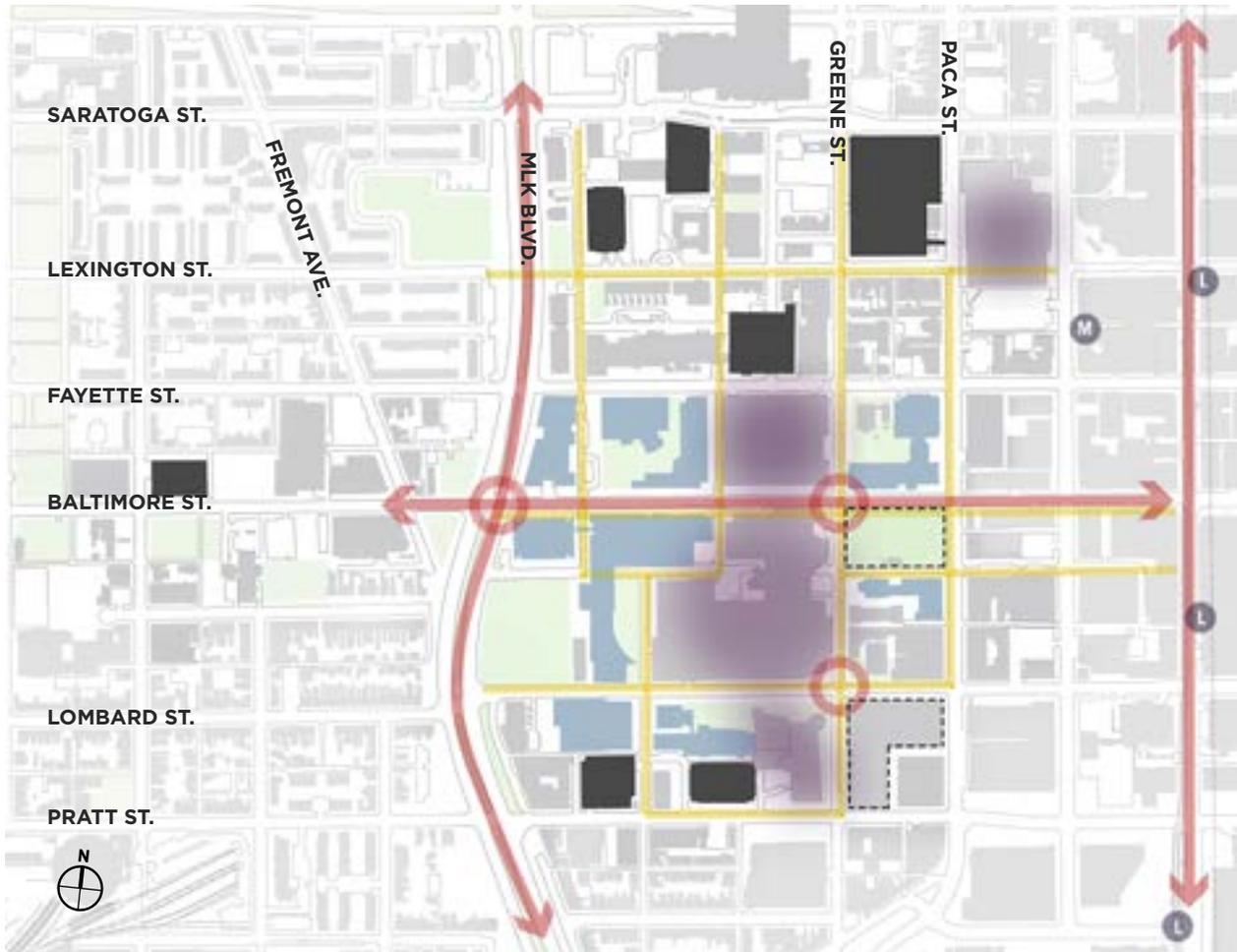
Street. University Plaza Park is also a major activity hub as there are many bus lines that pass along its northern edge. UMMC, VAMC, and UMB uses intersect at this park. Additional programming and activities also activate University Plaza Park, such as the farmers market every Tuesday, but the true potential of the park has yet to be realized.

The intersection of Lombard and Greene Streets is another major activity node on campus. This intersection is the nexus of the HS/HSL Library, Southern Management Corporation Campus Center, UMMC, and historic Davidge Hall. The mix of uses at this intersection results in heavy pedestrian activity and movement, which can often be in conflict with the heavy vehicular traffic that also exists at this intersection.

While there are a number of activity nodes across campus, pedestrian activity is mostly during the day. Since UMB has little housing on campus, there is very little 24/7 activity as the majority of daytime users leave campus in the evening. While there are a few good outdoor spaces on campus, there is a lack of outdoor recreation opportunities, furthering the desire for people to remain in their buildings.

GATEWAYS

First-time visitors frequently have difficulty navigating campus because of the one-way street system, lack of consistent signage, and unmarked entries. Pass-through motorists often do not recognize that they are within



EXISTING CIRCULATION DIAGRAM

- | | | |
|---------------------------------|-----------------------|---------------------------|
| Pedestrian Walkways (Sidewalks) | ○ Major Intersections | - - - Below Grade Parking |
| — Vehicular Corridor | ■ Academic | |
| ■ Parking Garage | ■ Community | |

a campus where pedestrians are prevalent. However, UMB has been making great strides in adding clear and consistent signage to help reduce confusion for visitors and create a sense of identity. The campus would benefit from marking all key entry points with gateway features.

VEHICULAR CIRCULATION

While many people come to campus as pedestrians, bicyclists, or public transit and shuttle riders, most drive private automobiles.

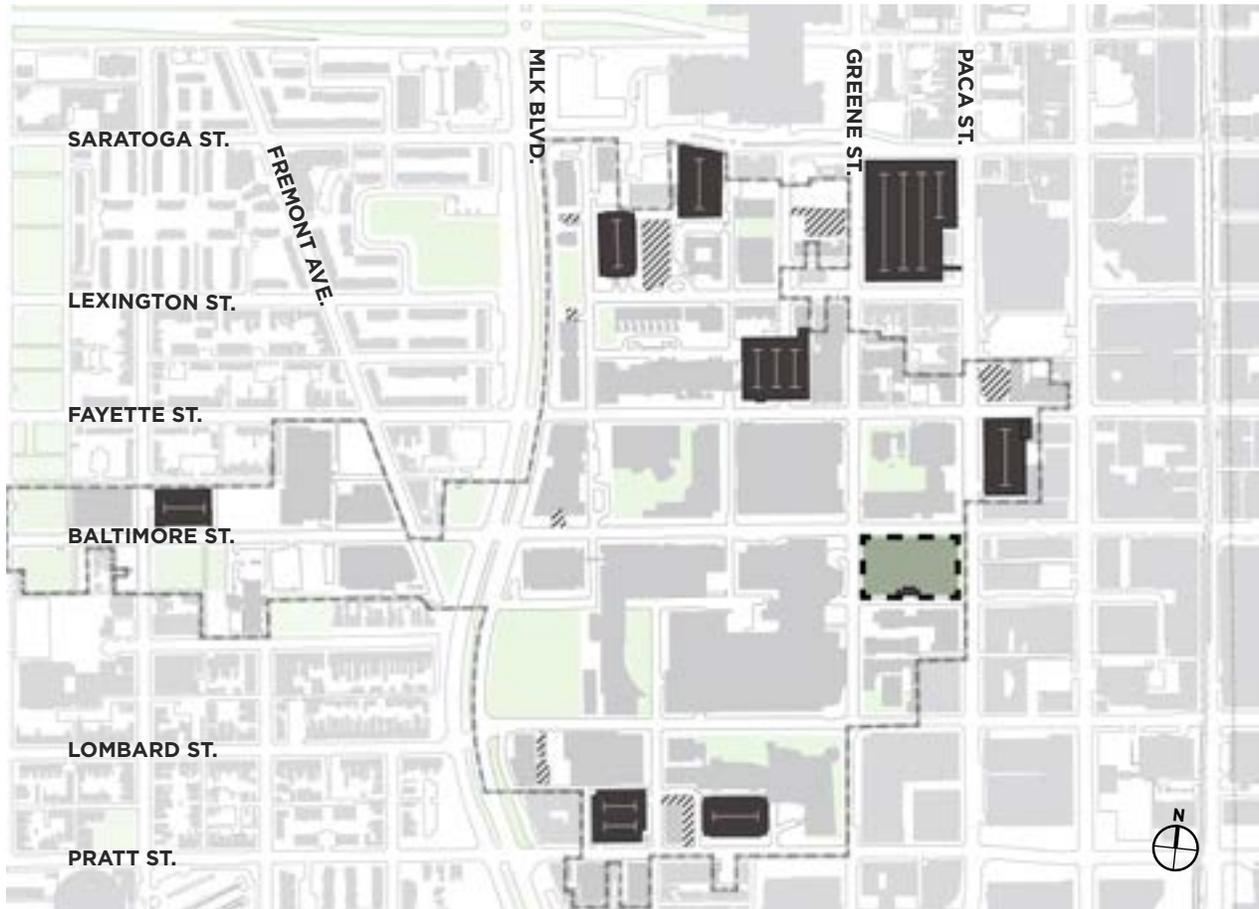
Major streets running through campus (MLK Boulevard, Fayette Street, Baltimore Street, Pratt Street, Lombard Street, Greene Street, and Paca Street) are the backbone of the downtown Baltimore transportation system and are critical points to and from the UMB campus. They carry significant traffic, especially during the morning and evening commutes, and can be sources of congestion for ingress and egress to parking garages and delay pedestrians as they make their way across campus.

PEDESTRIAN CIRCULATION

Once on campus, walking is the primary mode of travel within and around UMB. Greene Street, Arch Street, Pine Street, and Penn Street are key pedestrian corridors for people making trips to/from parking garages on the north and south side of campus. Eutaw, Lexington, and Redwood Streets are key streets for people accessing UMB via subway or light rail. These important pedestrian routes highlight opportunities to make safety and comfort improvements to the built environment to enhance mobility.

While sidewalks and crosswalks at signalized pedestrian crossings are provided throughout campus, there are several issues associated with pedestrian comfort and safety. The key issues include:

- Long crossing distances
- Long block lengths
- Aggressive driver behavior
- High turning-movement volumes
- Pedestrian-vehicle conflict at intersections
- Inadequate pedestrian waiting areas



PARKING RESOURCES

- Structured Parking
- ▨ Below Grade Parking

- ▨ Surface Parking

- High vehicle speeds
- Security concerns
- Pedestrian obstructions

PARKING

To accommodate people driving to campus, UMB manages a combination of parking garages and surface lots. Overall, the combination of the facilities controlled or leased by the University contains 7,270 total functional parking spaces. Over 1,000 of these spaces are made available to UMB through lease agreements with other parking entities. Parking garages represent the majority of the automobile capacity within the campus boundary. On-street parking typically serves short visits to campus. However, due to the high demand on these streets as commuter routes into and out of downtown, many streets have all-day parking restrictions or restrictions effective during peak demand periods.

TRANSIT

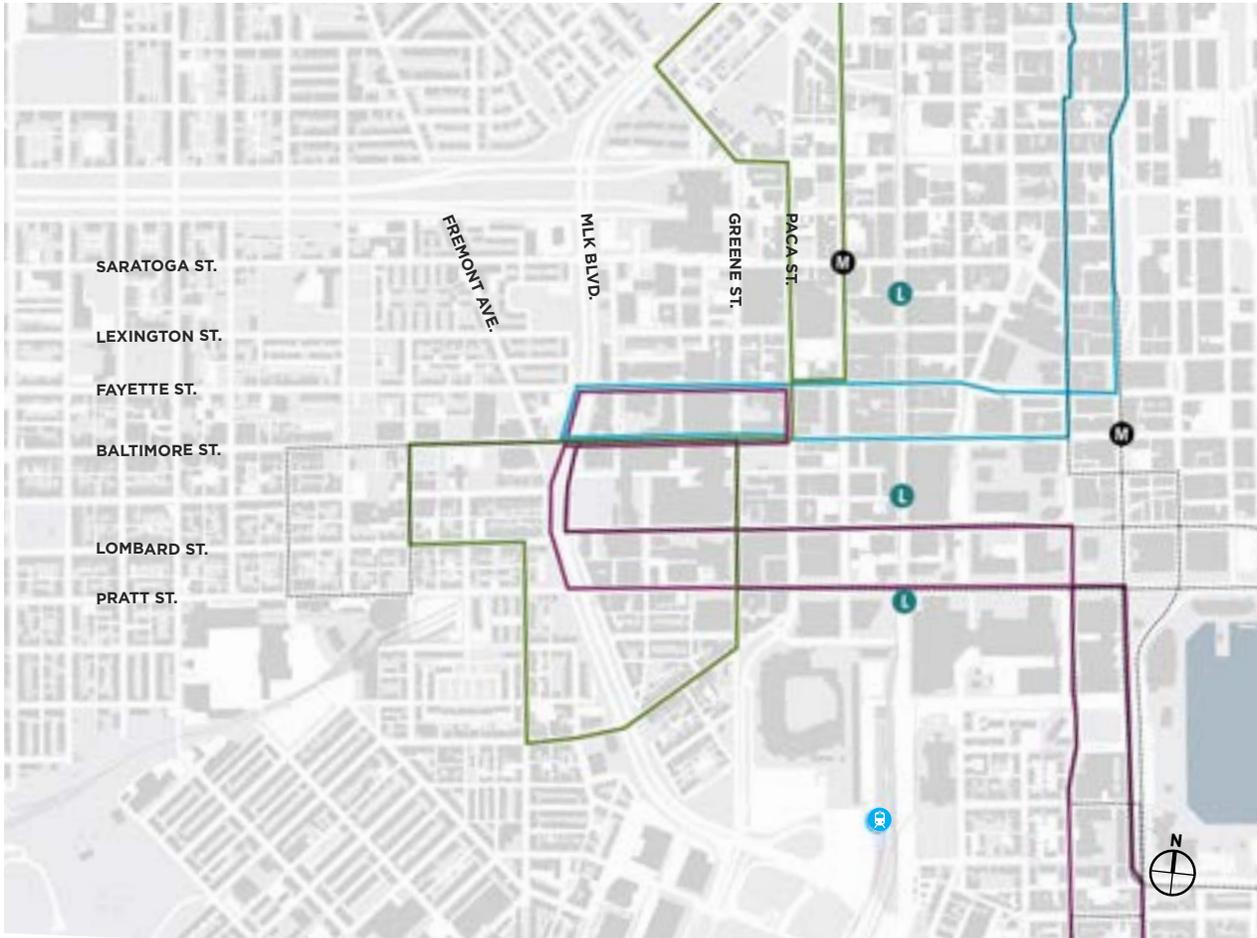
The UMB campus is transit rich but mobility poor. Even though there are a variety of transit options, they are not highly utilized because the quality of the walk to get there is often perceived to be unsafe and/or the transit routes don't go where people live. According to a recent campus parking and travel survey, only 18 percent of UMB employees travel to and from campus by transit. The Maryland Transit Administration (MTA) provides fixed route services in the form of local, commuter, and QuickBus bus routes. The City's major downtown east/west transit corridors include Fayette, Baltimore, Lombard, and Pratt Streets, with more than

18 buses running through the campus during the peak hours. MTA also controls Baltimore Central Light Rail Line and Subway, located one block east of the campus. Baltimore City provides the Charm City Circulator and UMB provides shuttles. On demand service is also provided to eligible users through MTA's Mobility/Paratransit service.

UMB provides fare-free shuttle service for students, faculty, and staff to and from the campus via four routes. The shuttle service supplements existing public transportation and provides a level of convenience, comfort, and safety that is often felt to be lacking from MTA's service. Additionally, the shuttle service plays a critical role in reducing the number of vehicles traveling to campus and utilizing the limited parking supply.

BICYCLE NETWORK

While bicyclists account for approximately 3 percent of total trips to and from UMB today, this figure is likely to grow given national trends and expanded bike facilities in the future. In the past, UMB has generally lacked bicycle infrastructure but recent improvements have made a drastic impact to the campus. UMB provides a number of bicycle parking options and amenities to encourage bicycle mobility and the city recently implemented its first bikeshare program, with two locations on campus.



TRANSIT

- 701 Bio Park
- 702 Mount Vernon
- 703 Federal Hill
- Ⓜ Baltimore Metro Station

- Ⓛ Lightrail Station
- ⓂARC MARC Station
- - Charm City Circulator

EXISTING TRANSPORTATION DEMAND MANAGEMENT (TDM) PROGRAM

The UMB Office of Parking and Transportation Services offers a variety of programs to encourage more active transportation modes that reduce both impact on the environment and on the University parking system. Limited awareness of these initiatives is a significant barrier to participation in many of the programs but these programs do serve as a strong foundation for future initiatives to

influence campus commute mode share and allow for campus development without further straining limited parking assets. The program includes:

- Guaranteed Ride Home (those who participate in carpools or vanpools or those who bicycle, walk, or take transit to work are eligible for up to four free rides home via cab or rental car in the event of unforeseen circumstances)

- UMCommuterPOOL, CarPool Zone, vRide, UMB Rideshare (carpool programs)
- Zipcar (shared vehicles)
- MTA Commuter Benefits (monthly passes via a pre-tax payroll deduction)
- Bicycle Parking Facility (secured bike parking and showers)
- Bike Share (docking stations located at the corner of Baltimore and Greene Streets and the BioPark)
- UM Shuttle (fare-free shuttle service to and from the BioPark, Mount Vernon, Federal Hill, and Canton/Fells Point)

Infrastructure Analysis

TOPOGRAPHY AND SOILS

The University's terrain typifies physiographic characteristics existing on the western side of downtown Baltimore, with slopes directing surface water runoff from the north/northwestern portion of campus to the south and ultimately southeast toward the Inner Harbor. The highest point of the general region is just north of the Saratoga Street/Paca Street intersection, roughly at elevation 104. The lowest point is located just south of the Pratt Street/Penn Street intersection (elevation 36, approximately). The soil variations on campus generally exhibit conditions one would expect to see in a major city's downtown environment. These types of soils exhibit very poor percolation properties. In recent years, construction activity on campus has also revealed shallow depths to groundwater tables.

HYDROLOGY

While the campus has high water tables, it is an area of minimal flood hazard. However, the southeastern corner of the UMB campus is roughly 5 blocks away from the Chesapeake Bay Critical Area. As expected in an urban setting, UMB utilizes a significant network of public storm drains to collect and convey stormwater runoff. However, the regulatory need for stormwater management creates opportunities for valuable investments in the campus landscape and sustainability. These working landscapes perform important ecological functions while helping manage rain events on campus.

WATER AND SANITARY UTILITIES

Water and sanitary utilities on campus are operated by Baltimore City. Recent sinkholes, such as the one just northeast of campus on Mulberry Street at Paca Street, show the aging nature of the City's underground utilities and lack of investment in replacing old infrastructure. This is a concern for UMB moving forward as the need to replace many of these networks will increase in years to come.

ELECTRICAL

Electricity is distributed throughout campus from a single substation located below UMMC. This substation has aged beyond its useful life and is also incapable of supporting future load growth. Furthermore, several elements of the campus' distribution system also require replacement.

More detailed information can be found in the Appendix.

**“ Creating a campus environment
that fosters collaboration
advances discovery.”**





Key Themes

After engaging the campus stakeholders and analyzing the physical qualities of the campus, strong themes emerged. These themes guided the planning team's decision-making throughout the process and shaped the final plan recommendations. While the themes are diverse and address a variety of important topics, some aspects of each theme overlap with the others.



Address Program Needs

At the heart of UMB are its academic programs. Ensuring these programs have the proper facilities to support their mission is fundamental to the success of not only this Master Plan, but of the University as a whole. Overall, the full-time equivalent student enrollment is expected to increase by 0.6% over the next 10 years. This is a dynamic time for higher education. Teaching pedagogies are changing and influencing the type of educational spaces needed across campus. Increased demand for computational and dry labs is affecting the quantity and type of research space needed. As collaborative and inter-professional education continue to expand, the University must provide sufficient space for socialization, study,

special programs, and interaction. Changing approaches to clinical and service programs also need to be accommodated. The Facilities Master Plan proposes opportunities to address all of these evolving trends to ensure that programs have sufficient facilities (quantities, types, and conditions) to carry out teaching and research, now and in the future.



Support Innovation and Collaboration

Creating a campus environment that fosters collaboration across all facets of research advances discovery. This ranges from bench-to-bed connections between research labs and clinical care environments to inter-professional settings that bring together different disciplines to foster new ways of thinking. Shared spaces that support the needs of all schools naturally provide an opportunity for formal and informal collaboration across disciplines. Technology transfer fuels economic development, advances new ideas, and improves health and wellbeing. UMB remains committed to supporting innovation, collaboration, and enhancements to health care delivery at all levels.



Renew and Reinvest

UMB has made significant investments in new buildings, but older buildings are still in need of renewal. Due to building age and changes in programmatic function, some buildings on campus have spaces that are improperly sized, in marginal condition, or inefficient. The Facilities Master Plan considers ways to renew and rethink the use of buildings to support modern teaching pedagogies, research trends, and cohort sizes. Improvements include creating consistent technology across the campus and paying special attention to the ground floor conditions to ensure facades are pedestrian friendly and creating a successful campus streetscape experience. UMB will continue to work with the City to improve the neighborhoods and infrastructure in and around the campus.



Create a Vibrant 24/7 Environment

UMB is part of an evolving downtown community. Mirroring the resurgence of cities nationwide, downtown Baltimore is shifting from a traditional business and institutional hub into a multi-use neighborhood. To create a more vibrant atmosphere and promote a safer environment, more people need to live around the campus. Additional housing, retail, and restaurants will generate new activity within the neighborhood and improve the campus community. To accommodate this growth, the Facilities Master Plan develops a cohesive strategy for properties that UMB can influence, especially on the edges of campus. The plan promotes active street life and safety. This includes locating public spaces and campus amenities on the ground floor of buildings, installing new and brighter street lamps, and adding art and additional landscaping to enhance the street experience. Incorporating arts and culture across campus through partnerships with the Bromo Arts District and Lexington Market will build on the neighborhood's diversity of uses, helping to create a more vibrant, 24/7 environment.



Enhance Circulation and Connectivity

The UMB campus has an established identity within downtown Baltimore, but the edges are often undefined. The creation of clearly defined boundaries through unified streetscape and visible gateways establishes an easily recognizable campus precinct and strengthens the identity of the University. The plan builds on the success of outdoor spaces, such as the one in front of the School of Nursing, and connects green spaces throughout campus. Creating stronger connections to the BioPark and neighborhoods across MLK Blvd is an important part of establishing a walkable campus. Likewise, drawing connections to the east across "The Gap" in the urban fabric between UMB and the rest of downtown will link the campus with recreational opportunities, the business center, arts and culture amenities, and a burgeoning residential community. Continuing to support connections to the established neighborhoods to the south and growing neighborhoods to the north are also critical to the campus.



Improve Transportation Elements

UMB is rich in transit options but lacks successful connections to all of the mobility options in and around campus. Safety, design, and condition improvements to pedestrian routes leading to the subway and light rail stops will encourage more people to take public transportation, thus reducing the number of vehicles coming to campus. Continuing to build a bike-friendly environment by improving bicycle infrastructure will also help reduce the number of cars on campus. Capitalizing on the Maryland Transit Administration's new bus network and providing transit incentives for students, faculty, and staff will reduce parking demand. There are also parking resources outside of the campus boundaries that could be better leveraged to reduce the number of people bringing cars to campus, which can be a financial incentive for UMB and its faculty, staff, and students.



Unify All Aspects of Planning Through Sustainability

The University is dedicated to stewardship of the environment and ensuring that the campus continues to develop in ways that are ecologically, socially, and economically sustainable. Encouraging alternate modes of transportation, as opposed to single occupancy vehicles, promotes environmental sustainability. Encouraging students, faculty, and staff to live close to campus minimizes commuting and greenhouse gas emissions. Improving existing building systems and designing new buildings with the latest sustainable methods increases energy efficiency. Expanding the number of open spaces, enlarging and increasing the number of tree pits, and modernizing stormwater management strategies reduces the amount of runoff and impervious surface. Sustainability is an overarching theme that manifests itself in all planning decisions to ensure the University reaches its sustainability goals and the campus continues to thrive in the future.



Uphold UMB as an Anchor Institution for the Community

UMB is bordered by many diverse neighborhoods whose conditions vary greatly. The University has the opportunity to help connect these neighborhoods and promote healthy living conditions and the development of positive, strong, and resilient communities. Leveraging strategic

partnerships, considering the campus edges, and exploring opportunities for community development is mutually beneficial to UMB and the surrounding neighborhoods. More opportunities for community integration, including inviting the community onto campus, is encouraged.

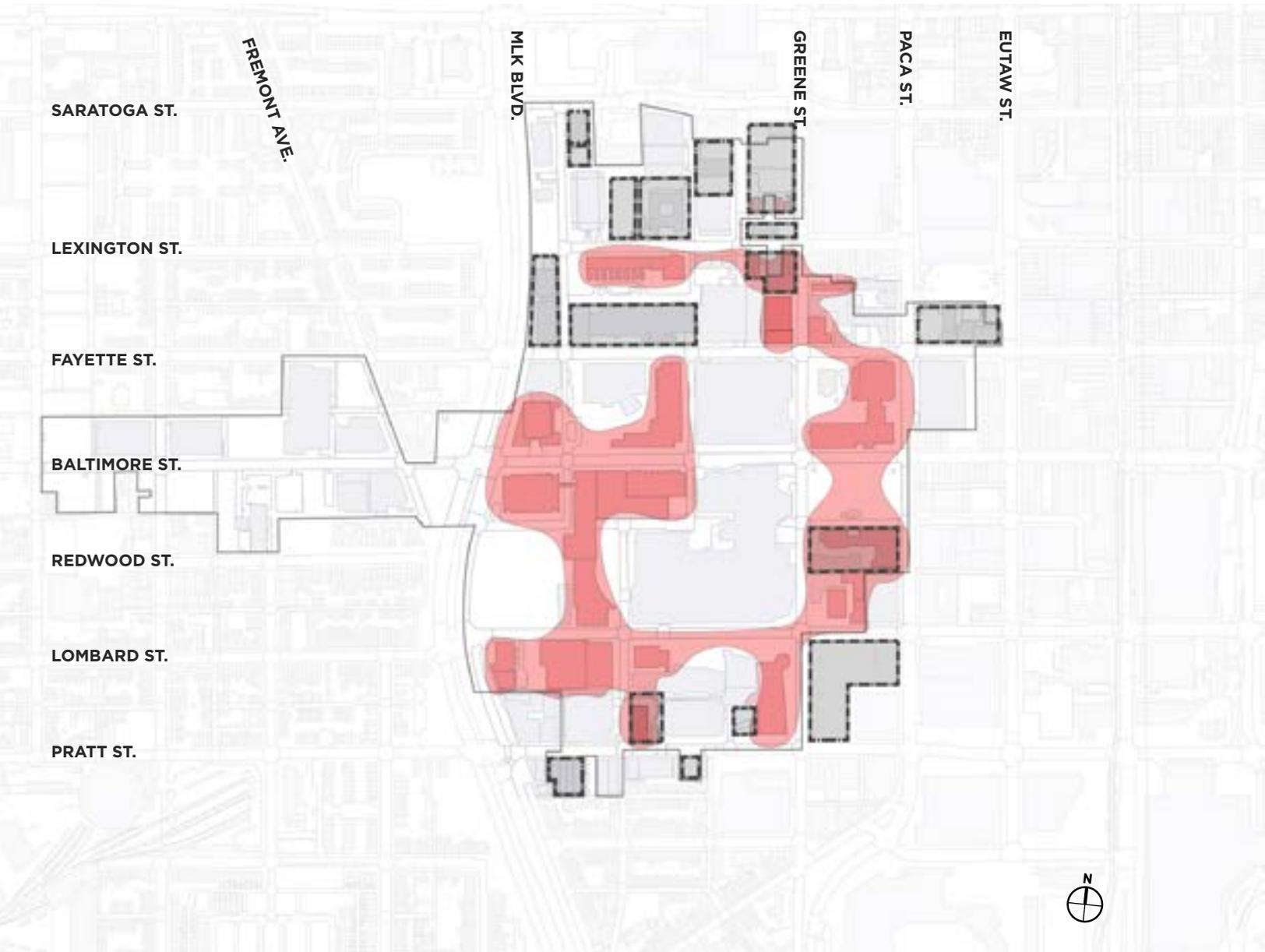




**“ High-quality open spaces
and streetscapes create places
where people want to live,
work, and study.”**

Plan Concepts

The Facilities Master Plan concepts illustrate how the key planning themes relate to the physical opportunities on campus. There are four concepts that reflect the vision of the University and the direction of future campus development.



PLAN CONCEPTS

■ Building and Infrastructure Renewal

▣ Redevelopment and Infill

1. BUILDING AND INFRASTRUCTURE RENEWAL

The most mature part of campus is south of Fayette Street, which forms a ring around two of UMB's partner institutions, UMMC and the VAMC. While some of the buildings are new or recently renovated, the majority of these buildings need some degree of renewal because of their age, outdated infrastructure, and/or evolving teaching pedagogies and research needs.

Building and infrastructure renewal is a perennial issue for higher education institutions. UMB's deferred maintenance backlog is over \$600 million and is expected to keep growing if current investment levels are not increased. Continuing to invest in campus buildings maintains and extends their useful life and provides opportunities to adapt to changing needs.

2. REDEVELOPMENT AND INFILL

North of Fayette Street, the campus has significant opportunity for the redevelopment of outdated and underutilized buildings as well as infill of open lots in between buildings. This is a rare opportunity for an urban campus, which typically has limited redevelopment and infill potential due to high demand for real estate. The University needs to capitalize on these large sites and underutilized or blighted properties to maintain capacity for large footprint buildings and interdisciplinary activities. This land bank to the north will be developed strategically in the short- to mid-term to improve the campus's character while still protecting the University's ability to accommodate large footprint developments in the long term. Developments in the north will also aim to translate the successes of the more mature parts of campus, building on the campus' sense of cohesion and thoughtful design.



PLAN CONCEPTS

- Building and Infrastructure Renewal
- Campus Rejuvenation

- Redevelopment and Infill
- Partners and Areas of Influence

3. CAMPUS REJUVENATION

High quality open spaces and streetscapes create places where people want to live, work, and study. These environments aim to be pedestrian-friendly, safe, and walkable. To continue evolving as a premier urban campus, UMB needs a framework that identifies important connections—to downtown, to public transit, to adjacent neighborhoods, and across the campus.

The plan focuses on two important elements of a functional, welcoming, and sustainable public realm:

- Transportation: Increasing pedestrian safety and mobility options
- Landscape: Creating campus identity and welcoming spaces for people

The University will preserve and enhance its identity by maintaining and strengthening streetscapes and continuing to invest in high quality, distinctive open spaces. It is essential to expand the campus identity that exists in the mature, southern part of campus to the north and reinvest in stronger streetscape connections to all parts of campus. The green network will extend to the campus edges and the University will have the opportunity to capitalize on partnership opportunities to enhance the public realm surrounding campus. Martin Luther King Jr. Boulevard, Greene Street, and Baltimore Street are major campus links and gateways; they are key locations to target rejuvenation efforts to promote a distinguished campus precinct within downtown Baltimore.

4. PARTNERS AND AREAS OF INFLUENCE

As an anchor institution in Baltimore, the University assumes a critical role in the City's renaissance. Its physical relationship with medical center partners and surrounding communities is key to establishing an urban environment where health, justice, and social impact are at the forefront.

Partnering with city institutions and agencies, UMB will continue to have a positive influence on the Westside community and beyond. Increasing activity and diverse uses around the campus will result in a more vibrant, attractive University neighborhood. Stronger pedestrian environments in and around the campus connect to communities and downtown, encouraging the mixing of students, faculty, staff, residents, and patients.

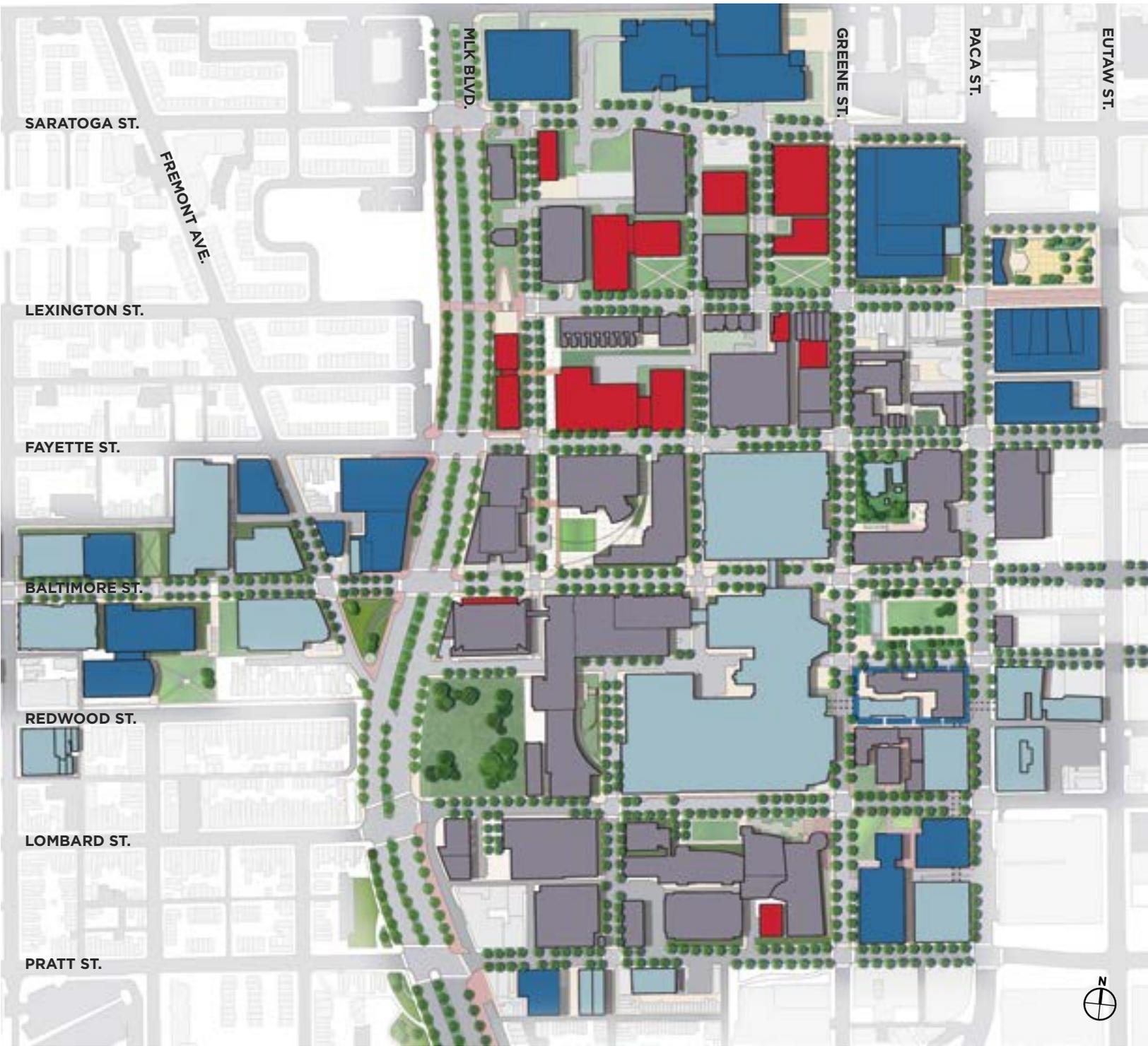
“The Facilities Master Plan promotes sustainable practices through responsible infrastructure, landscape, and transportation elements.”





Campus Plan and Key Features

The Facilities Master Plan establishes an additional 1.5 million gross square feet of capacity for institutional growth. It also outlines improvements that renew aging facilities, enhance the campus environment, promote sustainable initiatives, and create stronger physical connections within UMB and the neighboring communities. The plan sets a general strategy whereby the University can direct the physical development of the campus. As with past planning, this master plan identifies a variety of sites for specific projects to be developed over the next 10 years while providing a more general framework for potential sites in the period beyond. This approach allows campus leadership to respond flexibly to conditions that exist at the time of project development.



FACILITIES MASTER PLAN

- UMB Existing
 - UMB Proposed Project Sites
- Existing Partnerships
 - Proposed Partnership Projects





Artist's rendering of the campus looking southeast after Facilities Master Plan implementation

Key Features of the Plan

The following features support the overall vision and key themes of the Master Plan.



1 | Collaboration and Facilities Renewal

- Address deferred maintenance to ensure the usefulness of facilities
- Preserve appropriate historic resources and renew facilities to support the mission of the schools
- Upgrade critical campus-wide infrastructure necessary to support the activities of UMB
- Create interdisciplinary and inter-professional facilities to promote innovation and collaboration across all schools
- Plan for the future redevelopment of older, underutilized, and/or blighted properties while maintaining large development sites for future use
- Promote the development of shared campus resources that can be available for use by all schools
- Identify site opportunities for the new School of Social Work, Community Engagement Center, Inter-professional Education Center, and *MPower* initiatives

2 | Landscape and Transportation

- Create a functional, iconic campus green by improving Plaza Park
- Invest in distinctive open spaces, especially to the north
- Collaborate with campus partners to address streetscape and crosswalk improvements
- Enliven blank building facades that detract from pedestrian-friendly streetscapes
- Create a safer pedestrian environment through crosswalk enhancements and curb extensions at key intersections
- Focus on creating gateways that clearly identify the campus
- Improve lighting across campus to promote safety and pedestrian comfort
- Expand stormwater management through rainwater harvesting, micro-bioretenion, green roofs, and controlled roof runoff
- Promote sustainable practices through responsible infrastructure, landscape, and transportation elements
- Establish additional dedicated bicycle facilities and routes in partnership with Baltimore City
- Encourage alternative modes of transportation by expanding transportation demand management strategies
- Improve connections to the light rail and subway to encourage ridership





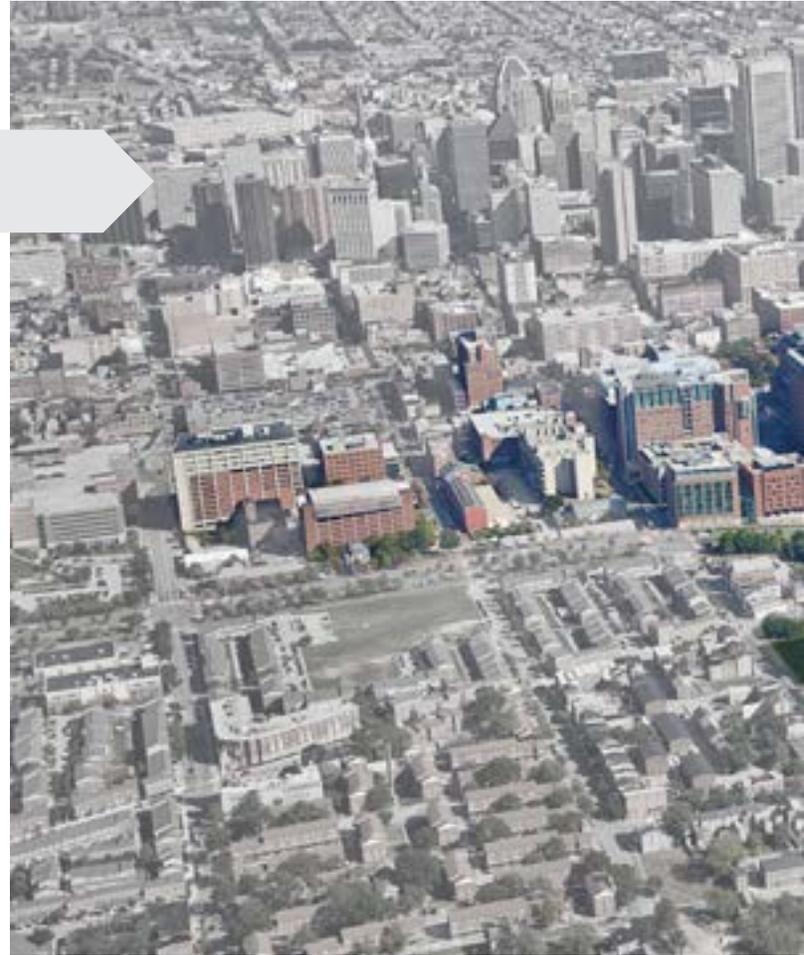
Existing Baltimore Street looking west with HSF III under construction in the foreground



Artist's rendering of Baltimore Street streetscape improvements and MSTF renovation with new entry

3 | Partnerships and Campus Edges

- Embrace BioPark activities as an extension of UMB
- Focus on the growth and expansion of the Community Engagement Center
- Work with the City to improve MLK and create safer pedestrian crossings
- Enhance connectivity by creating stronger, safer connections to Lexington Market, BioPark, MetroWest, communities to the west and public transportation along Howard Street
- Revitalize Lexington Street to be a mixed-use, pedestrian-oriented corridor that anchors the northern part of campus
- Pursue partnerships with local developers to increase the amount of housing and neighborhood amenities on and around campus
- Work with the City and local developers to bridge “The Gap” in urban activity along Howard Street that separates UMB from the rest of downtown
- Establish a Museum District centered around Davidge Hall and further expand collaborative synergies with the Bromo Arts District



BioPark



Bromo Arts District



Artist's rendering of Drover's Bank



Metro West



Artist's rendering of Lexington Market



Existing view of the Lexington Street and Greene Street intersection looking southwest



Artist's rendering of the proposed Lexington Street and Greene Street intersection looking southwest

PlanMaryland

PlanMaryland is a roadmap for Maryland's future to accomplish primary goals of growth, preservation, and sustainability. The Facilities Master Plan supports these goals and is compatible with their objectives.

Facilities Renewal

Facilities renewal is an ongoing activity to maintain and renew existing buildings as well as campus wide infrastructure so that they remain useful to the schools and programs. It is a major issue on college and university campuses across the country. The Board of Regents of the University System of Maryland has mandated that 2 percent of the current replacement value of campus facilities should be expended on facilities renewal each year in order to keep pace with continuous needs. In some instances, where facilities are 20 or more years old, individual building systems needs have been bundled into larger capital projects. Examples of this include the renovation of Bressler Research Building and Medical School Teaching Facility. Smaller projects are addressed through annual capital facilities renewal or deferred maintenance allocations.

Capital Projects

A list of projects has been generated to address the facilities needs identified during the planning process. Detailed programs for each project will need to be carefully considered and developed as projects advance in the implementation plan. Except for school and site specific projects, more than one site has been identified for a project to provide maximum flexibility. Such a strategy enables the campus to take advantage of opportunities as they arise and to adapt to a changing environment. It is necessary because there is strong competition for land in urban settings, and a particular site may not be available when a project is ready to begin.

SCHOOL AND SITE SPECIFIC RENOVATION PROJECTS

These projects have been identified as renovation or renewal projects with deferred maintenance. They are unique in that there is only one site proposed for each project.

SCHOOL OF MEDICINE

- Maryland School Teaching Facility (MSTF)
- Davidge Hall
- Bressler Research Building
- Howard Hall
- Allied Health Building
- Health Sciences Facility I & II
- 100 N. Greene
- 737 W Lombard St.
- Biomedical Research Facility
- Institute of Human Virology (IHV)



FACILITIES MASTER PLAN

- Existing Buildings
- Proposed Renovation/Renewal
- Proposed UMB or Partnership Building

SCHOOL OF LAW

- Carey School of Law

SCHOOL OF DENTISTRY

- Dental School

SCHOOL OF PHARMACY

- Pharmacy Hall South

SCHOOL OF NURSING

- School of Nursing North

CAMPUS WIDE

- Electrical Substation and Electrical Infrastructure
- Maryland Bar Center
- Pascault Row
- 121 N. Greene Street Building
- Lexington Street properties
- Former Ronald McDonald House

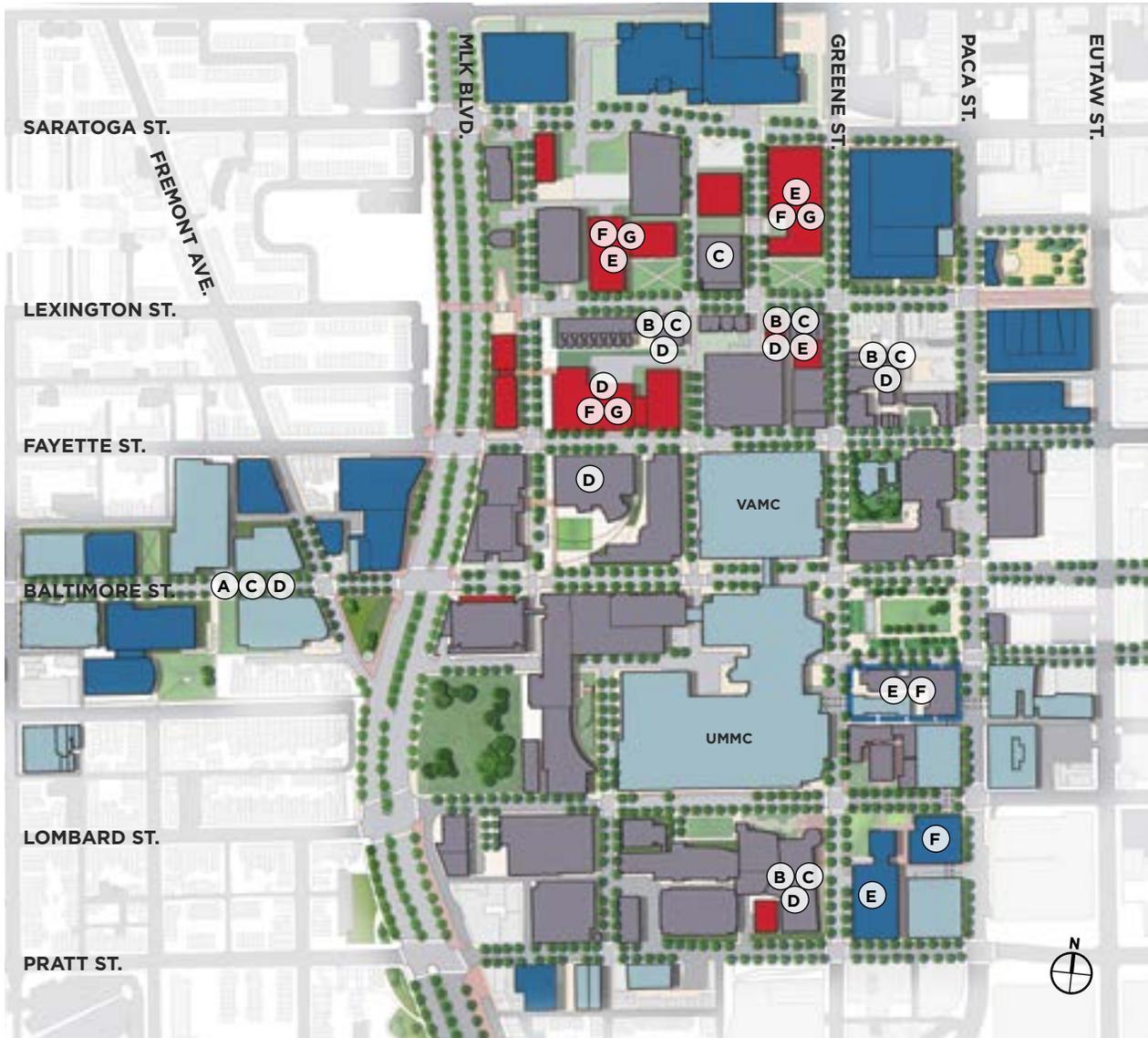
NEW CONSTRUCTION SITES

These sites have been identified as opportunities to redevelop older, underutilized, and/or blighted properties while maintaining large development sites for future use. The vast majority of campus sites are north of Fayette Street. Other partnership sites are located all around the campus, including the BioPark, Lexington Market, MetroWest, and UMMC.

MISSION-DRIVEN PROJECTS

These projects directly support the mission of UMB, have multiple site options, and have the flexibility to be renovation projects or part of a new construction site. Throughout the planning process, the School of Social Work generated a great deal of discussion. The Facilities Master Plan proposes three scenarios for the School of Social Work:

1. Renew existing buildings and renovate available buildings along Greene Street as an annex.
2. Build a new building at the corner of Lombard and Greene Streets across from Davidge Hall. This scenario would require a land swap with UMMC but would create a south gateway to the campus, infill an underutilized area of campus, allow for the hospital to expand in an ideal manner, and consolidate all School of Social Work functions at one site.
3. Build a new building at the corner of Lexington and Greene Streets to the east of the Lexington Building. This scenario would create a strong anchor as the campus moves to the north and consolidates all of the School of Social Work functions at one site. UMB owns the entire building site except for two parcels, which would need to be acquired.



FACILITIES MASTER PLAN

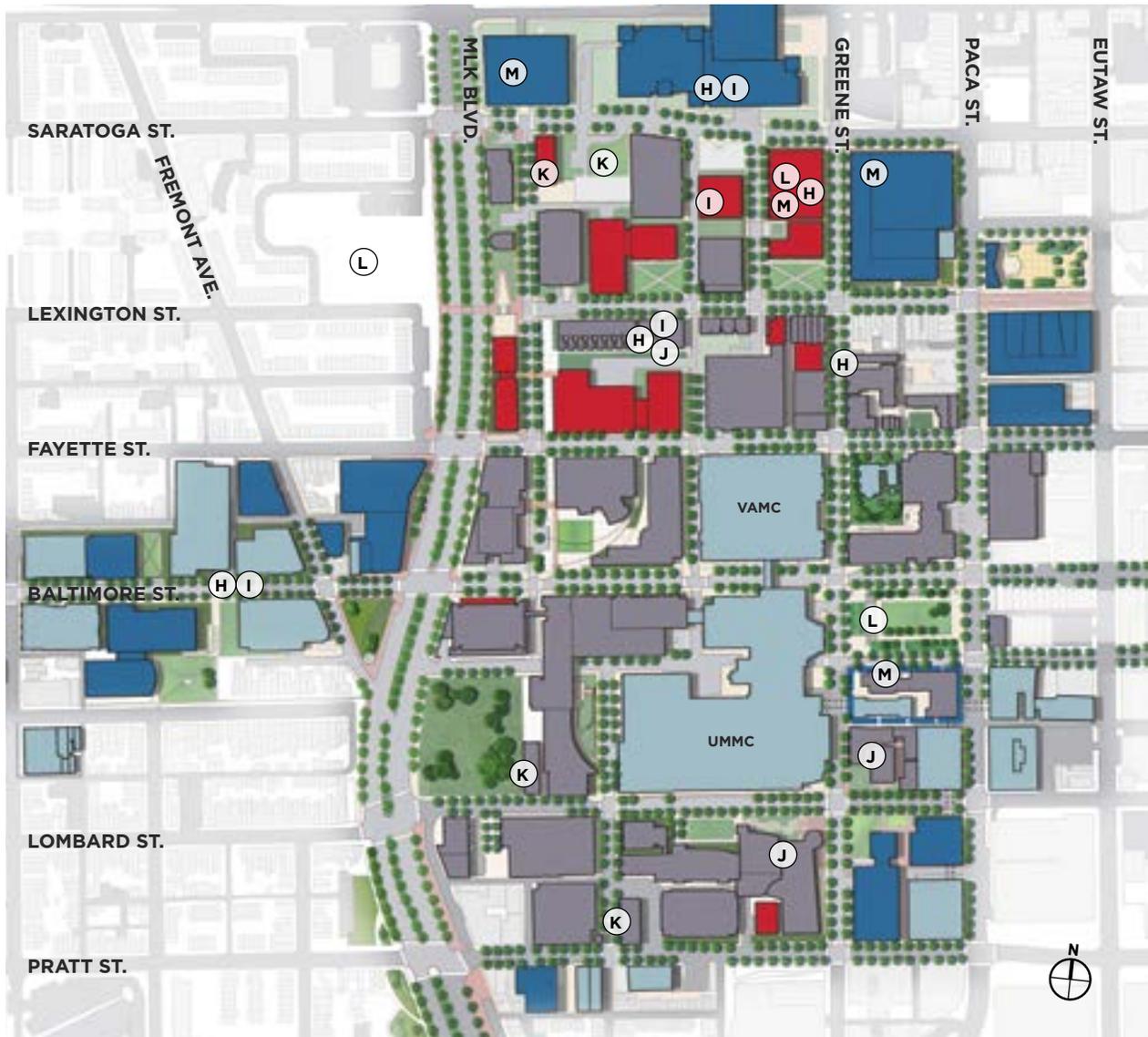
- UMB Existing
- UMB Proposed Project Sites
- Existing Partnerships
- Proposed Partnership Projects

- A Community Engagement Center**
- B Inter-Professional Education**
- C Graduate School**
- D Shared Resource Center / MPower Initiatives**
- E School of Social Work**
- F Neuropsychiatric Research Institute**
- G HSF IV**

RESOURCES AND AMENITIES

These projects are resources and amenities for UMB, have multiple site options, and have the flexibility to be renovation projects or part of a new construction site. Some of the site options are partnership opportunities.

- H Surge/Swing Space
- I Child Care Expansion/Relocation
- J Visitor and Development Center
- K Hazardous Materials Storage/ Electrical Substation
- L Outdoor Recreation (Interim Land Use)
- M Parking Garage



FACILITIES MASTER PLAN

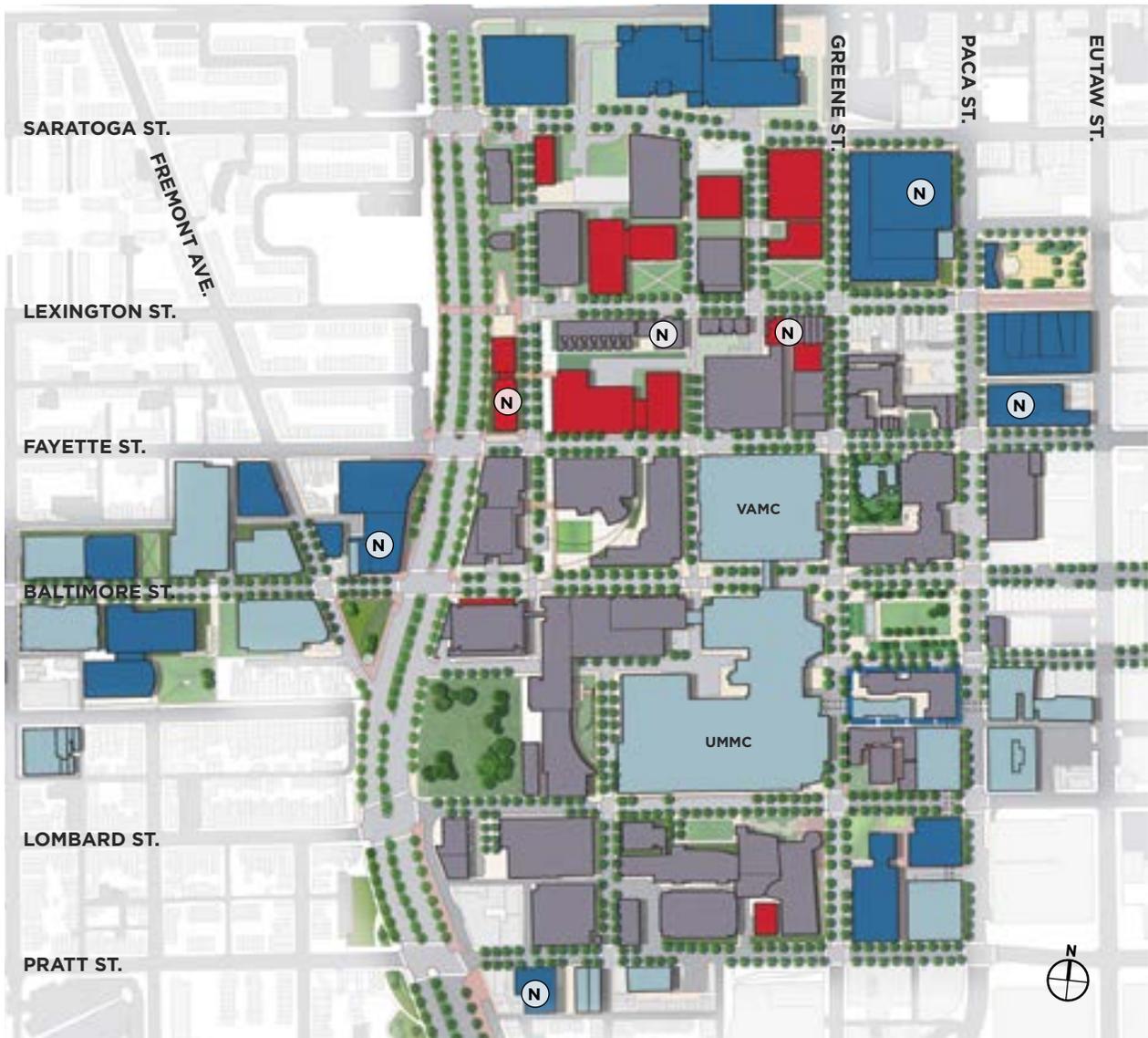
- UMB Existing
- UMB Proposed Project Sites
- Existing Partnerships
- Proposed Partnership Projects

HOUSING

To create a 24/7 campus environment, additional housing is needed to support a vibrant campus. There are housing opportunities on campus and well as immediately adjacent to campus. Ideally, new housing projects would be completed in

partnership with a developer. The Facilities Master Plan also encourages housing around the campus so that more faculty, staff, and students can be within walking distance of the campus.

N Housing



FACILITIES MASTER PLAN

- UMB Existing
 - UMB Proposed Project Sites
- Existing Partnerships
 - Proposed Partnership Projects

Campus Landscape

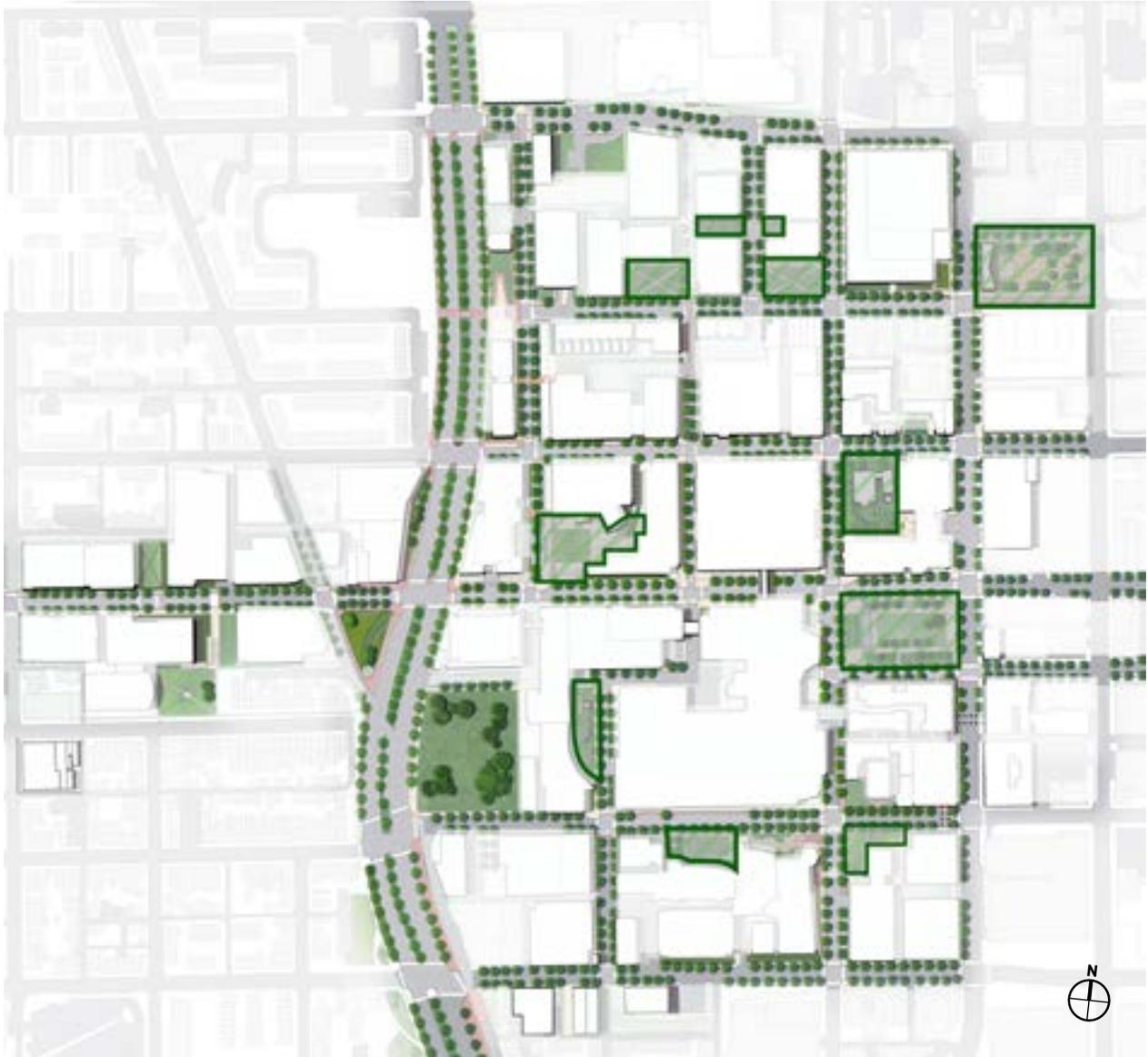
The Facilities Master Plan includes the enhancement of existing outdoor spaces as well as the creation of new, high quality open spaces that reinforce the larger connected open space network and create places where people want to live, work, and study. Investment in high-quality open space and pedestrian networks improves the overall campus aesthetic and functionality, enhancing the University’s image as a premier public urban research university. Successful open spaces and friendly streetscapes encourage people to come outside at all hours of day, reinforcing safety with more eyes on the street. The Facilities Master Plan calls for improved wayfinding, humanizing the landscape, and creating a sense of place with consistent materials and details. Clearly defined gateways and reinforcing campus standards in streetscapes will establish a campus identity within the urban context. The plan also recognizes that an improved landscape is critical to meeting the University’s sustainability and climate resiliency goals.



Precedent Image: Bryant Park, New York



Precedent Image: University of Delaware



Proposed Campus Landscape

CAMPUS GATEWAYS

Campus gateways help establish campus thresholds and its presence in the larger urban context. A well-designed campus perimeter landscape distinguishes the campus from its local surroundings, creates a welcoming environment and positive first impression, and helps establish a sense of place by using designed landscape elements including gateway structures. Recommendations for campus gateways include:

- Create a defined edge by implementing defined plantings and intersection treatments, including painted crosswalks as visual indications where entering campus
- Mark entries with identifiable signage, built elements, and landscape elements
- Use consistent paving materials within gateways to help unify the campus aesthetic

PEDESTRIAN-FRIENDLY CAMPUS

- Primary Vehicular Focused Gateways
- Vehicular and Pedestrian Gateway
- Primary Pedestrian Gateway





CAMPUS STREETSCAPES

Streetscapes are a key part of an urban campus' open space network. Successful streetscapes act as key green space connections across the campus while helping to define the university extents. They have significant pedestrian activity and vibrancy and are strong, identifiable, cross-campus routes. They also enhance connectivity by creating stronger, safer connections to Lexington Market, BioPark, MetroWest, and communities to the west. These spaces define the campus to pedestrians and vehicles alike. Recommendations for campus streetscapes include:

- Celebrate streetscapes as desirable gathering spaces as part of a high quality public realm and successful civic spaces. Reinforce vibrant activity along the walkway by providing places to stop, sit, and relax.
- Create crosswalk enhancements and curb extensions to help improve pedestrian safety by reducing the street crossing distance along streets with dedicated parking.
- Use consistent paving materials and tree plantings along walkways to help unify the campus aesthetic.
- Ensure width is adequate to allow for high numbers of pedestrian activity.
- Plan for adequate tree planting root zones in streetscapes to support healthy tree life and expanded canopy cover.
- Include stormwater plantings in streetscape designs to treat the runoff from the impervious surface of sidewalk

and, where, possible, roadway.

- Integrate seasonality into streetscape plantings of these spaces to provide seasonal change and added interest throughout the year.
- Locate site corridor connectors along major campus routes that link key campus locations, including active buildings.
- Whenever possible, use hardy native perennials to reduce maintenance, water use, and add a variety of color throughout the year.

Specific streetscape improvements identified in the master plan include Arch Street, Pine Street, Greene Street, Baltimore Street, and Lexington Street.

More detailed information can be found in the Landscape Appendix.



Precedent Images: Painted Crosswalks

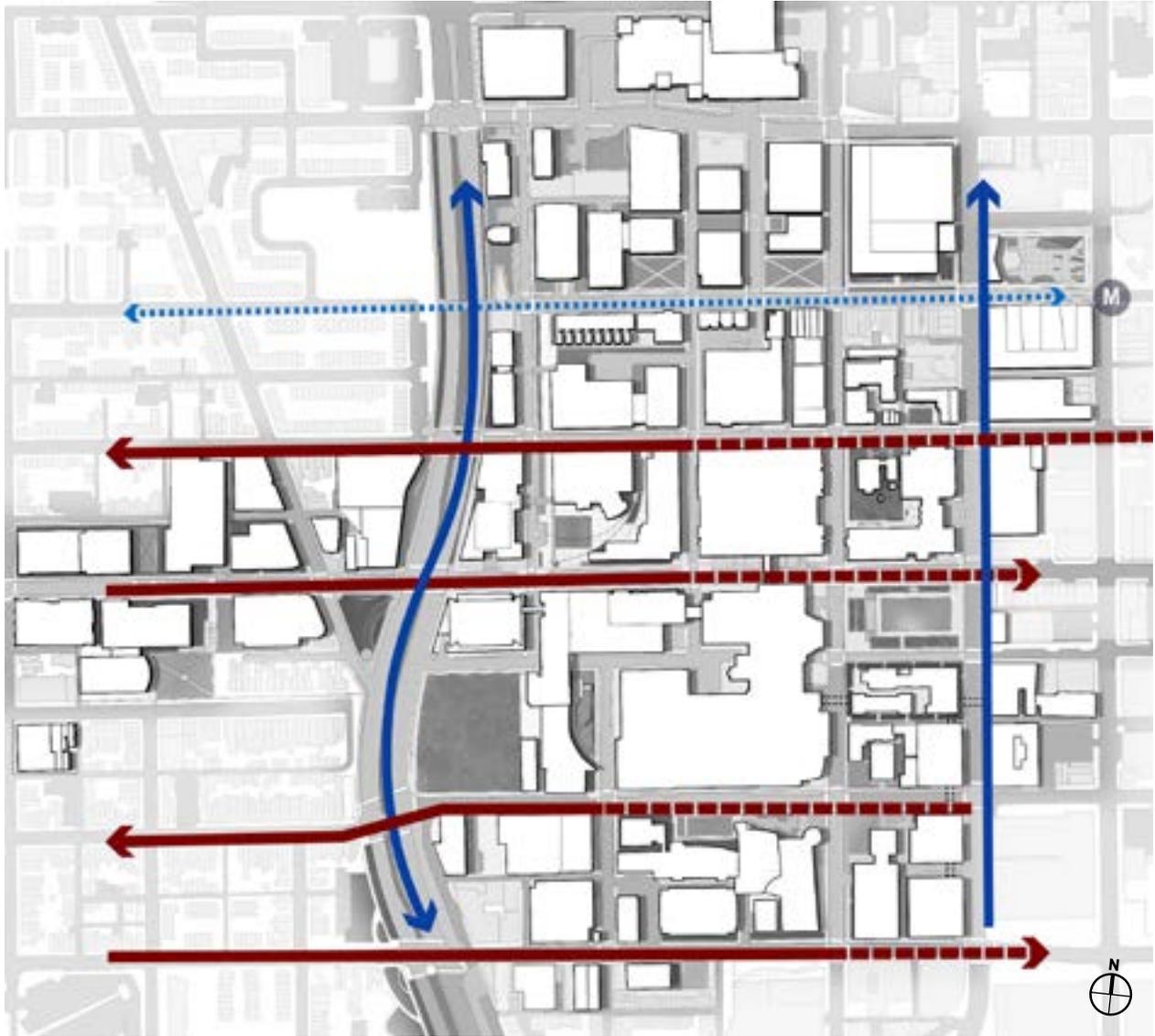
Campus Circulation

The role of parking and transportation is evolving rapidly, with an emphasis on multi-modal and advancing technologies. In addition to mobility, pedestrian safety is a high priority for the campus community. Improvements currently underway along Arch Street, between Lexington and Fayette Streets, and along Pine Street, between Fayette and Baltimore Streets, are good examples of the types of changes that create safer and more attractive campus circulation.

UMB's location along Martin Luther King Blvd and near multiple public transit stops makes the campus rich in transit access and options. However, this regional convenience places auto and bus traffic burdens on campus streets. Once transit users and motorists become pedestrians, they navigate across campus, making the

experience of paths, sidewalks, and transit stops important to their perceptions of safety and comfort. UMB's ability to reasonably manage the streets and public spaces that create its campus environment requires an approach to transportation assets that recognizes the balance needed to address conflicting demands on a system that plays dual roles of local access and farther reaching connectivity.

The Facilities Master Plan reflects the value of convenient regional access and the particular elements needed to retain and potentially enhance this function in support of future growth and sustainability. The plan also focuses on strengthening these same streets as part of a network of travel and civic connections that contribute to a comfortable and vibrant urban campus experience.



PROPOSED TRANSPORTATION NETWORK

- BaltimoreLink Bus
- BaltimoreLink Bus, Dedicated Bus/Bike Through Campus
- Dedicated Bike Lane
- Shared Bike Lane

CIRCULATION IMPROVEMENTS

The Facilities Master Plan transportation recommendations support existing and emerging forms of urban transportation that are sustainable and provide the full range of options for efficient travel. The recommendations make the most of the campus' close proximity to regional rail transit and suggest ways to leverage larger transportation trends in the city in ways that serve UMB's goals. High quality, comfortable transportation options can reduce the need to finance and build more parking structures, help to meet UMB's sustainability goals, and attract faculty, staff,

and students opting for car-free and car-light lifestyles they often expect when choosing an urban university setting.

The recommendations are designed to highlight ways the transportation system can be improved to support and manage the interrelated and sometimes conflicting goals of a multimodal access options and the presence of a high-quality pedestrian realm. They are meant to improve campus life for people working and visiting UMB while performing their critical system function as key connectors of Baltimore's larger transportation network.



Example of proposed curb extensions on eastbound street



Proposed curb extensions

TRANSIT RECOMMENDATIONS

1. Proposed BaltimoreLink Dedicated Bus Lanes

BICYCLE NETWORK RECOMMENDATIONS

2. Bicycle Boulevard
3. Separated Bicycle Lanes (Two-Way)
4. Road Diet - Two-Way Separate Bicycle Lane Alternative
5. Shared Bus/Bike-Only Lanes
6. Trail/Shared Use Path
Various Locations- Bicycle Parking

PEDESTRIAN RECOMMENDATIONS

7. Amenity Improvements for Pedestrians (pedestrian-scale lighting, active building fronts, trees, and informational signs)
Various Locations- Curb Extensions

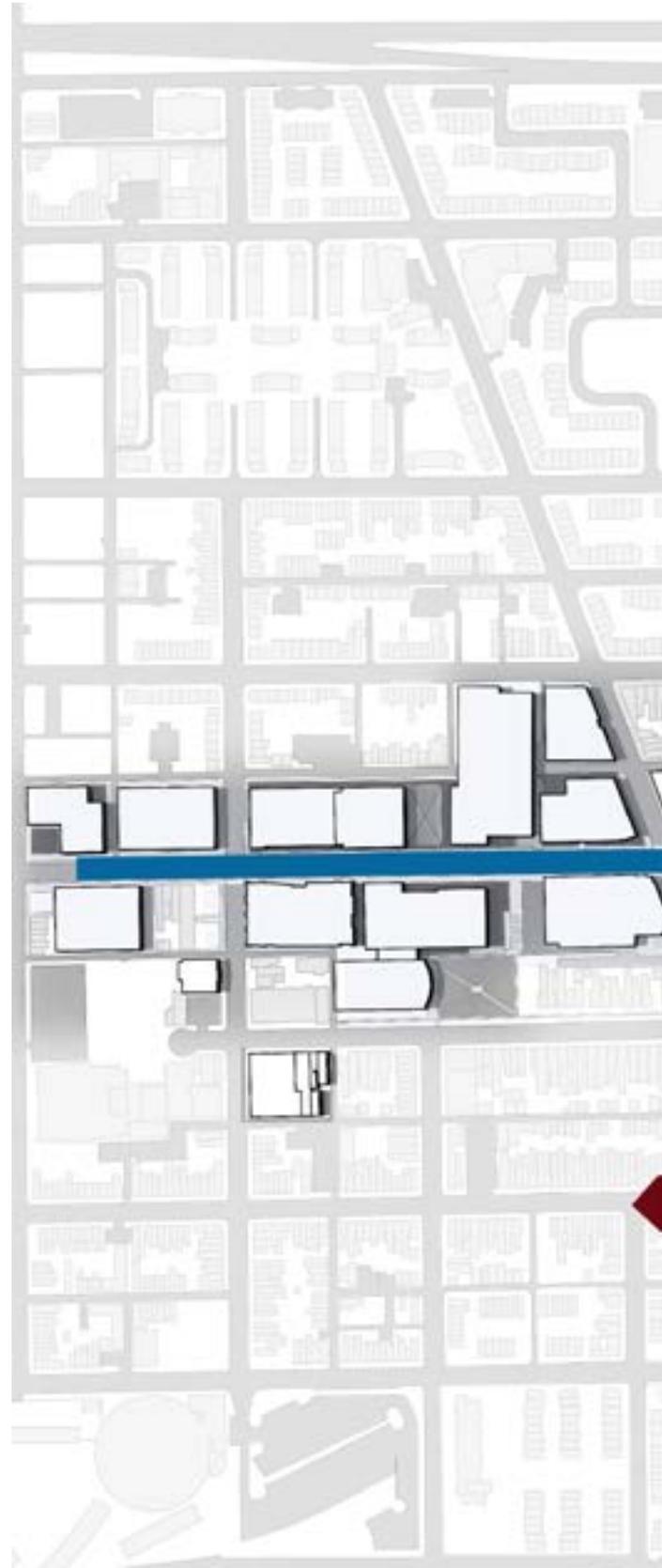
TRAFFIC OPERATIONS RECOMMENDATIONS

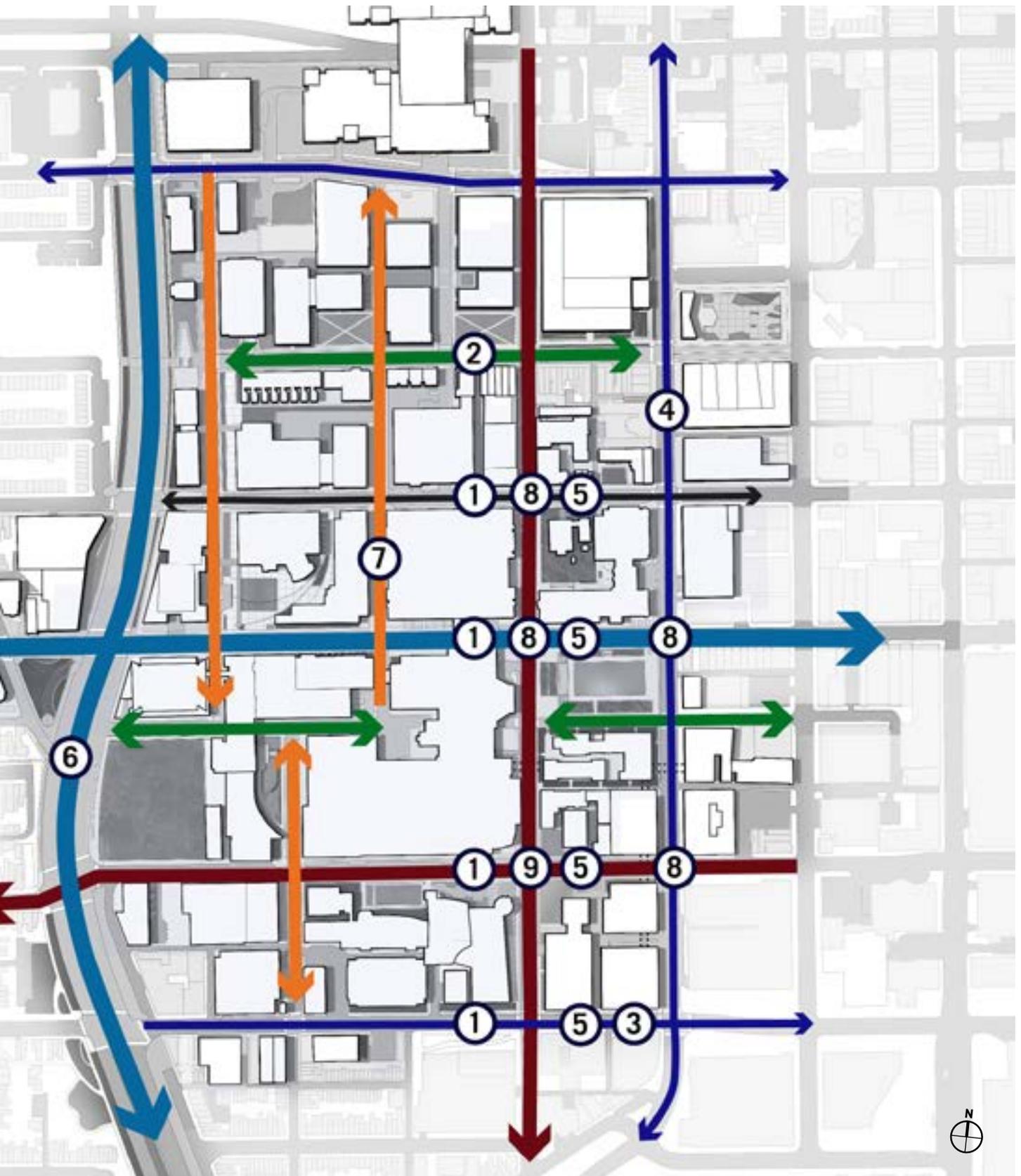
8. Leading Pedestrian Interval (LPIs)
9. Pedestrian Scramble
Various Locations- Travel Demand Management (TDM)

More detailed information can be found in the Transportation Appendix.

CAMPUS STREET FUNCTIONS AND TRANSPORTATION RECOMMENDATIONS

-  Regional Connectors
-  Major Campus Streets
-  Mixed-Use Lane Street
-  Mixed-Use Lane Street
-  Utilitarian Street
-  Edge Street





Campus Utility Infrastructure

STORMWATER

The master plan proposes a wide variety of stormwater management practices with an emphasis on Environmental Site Design (ESD). These “green” techniques replace traditional quality-management conventions and, in recent years, have become required components of stormwater management strategies in Maryland. Micro-bioretenion is most useful in specific areas where nearby storm drains are sufficiently deep underground. Because of UMB’s urban setting, there are opportunities to introduce bioretention practices in elevated “planter boxes” that collect roof runoff into the proper filtration-depth profiles. Another variation of bioretention involves curb extensions, which can incorporate vegetated bioretention cells as part of the roadway retrofit.

In areas where there are unfavorable soils, high water tables, and insufficient storm drain depths, widespread infiltration techniques may be challenging. Other opportunities include green roof technologies and rainwater harvesting. Green roofs provide aesthetic interest while also satisfying stormwater requirements. Rainwater harvesting can occur in below-grade cisterns that send collected water back into buildings and up to cooling towers. They can also be used in above-ground tanks as architectural features, intentionally woven into the site layout. All of the proposed stormwater management practices provide the opportunity for sustainability on display and



Examples of green roofs, micro-bioretenion, and roof runoff should be integrated into the design of the campus wide landscape aesthetic and overall design of campus spaces.

ELECTRICAL

The University is currently underway with an \$80M upgrade to the campus’ electrical



infrastructure. This project includes the replacement of the University's sole existing substation and the construction of second substation on the north end of campus. The two substations will be fed from different sources, creating redundancy in the event of a service disruption. The project also includes the construction of new duct bank, cabling, switchgear, and other assorted distribution components. The project has several phases and will be completed in 2026.

STORMWATER MANAGEMENT OPPORTUNITIES

- Micro-Bioretentation
- Green Roof
- Rainwater Harvesting

More detailed information can be found in the Infrastructure Appendix.

Public Realm Opportunities

To advance the public realm, a combination of landscape, transportation, and storm water improvements should be incorporated into building projects. There are also opportunities for some stand-alone projects.

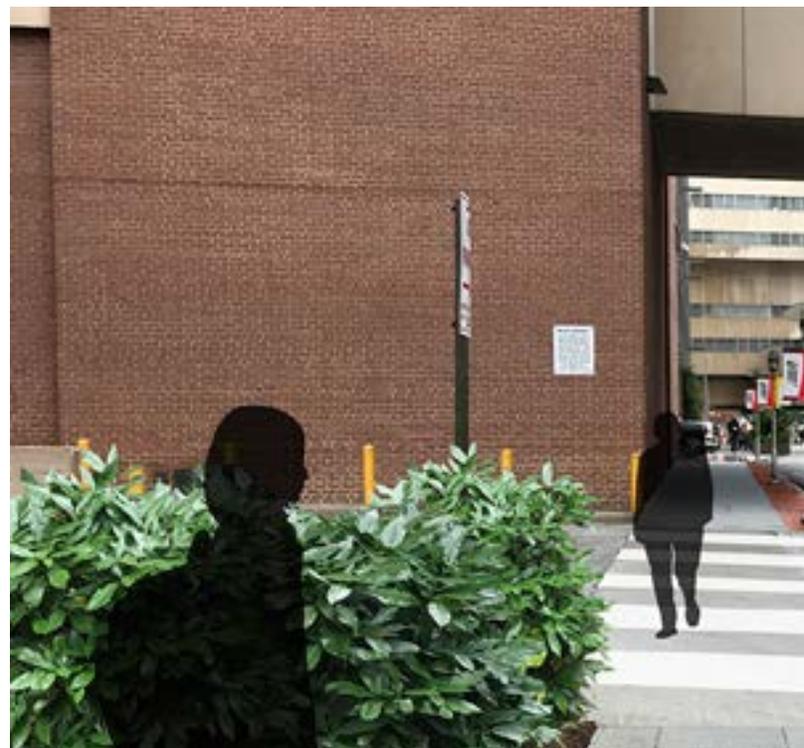
UMB PRIORITY PROJECTS

Projects that UMB should lead to improve the campus.

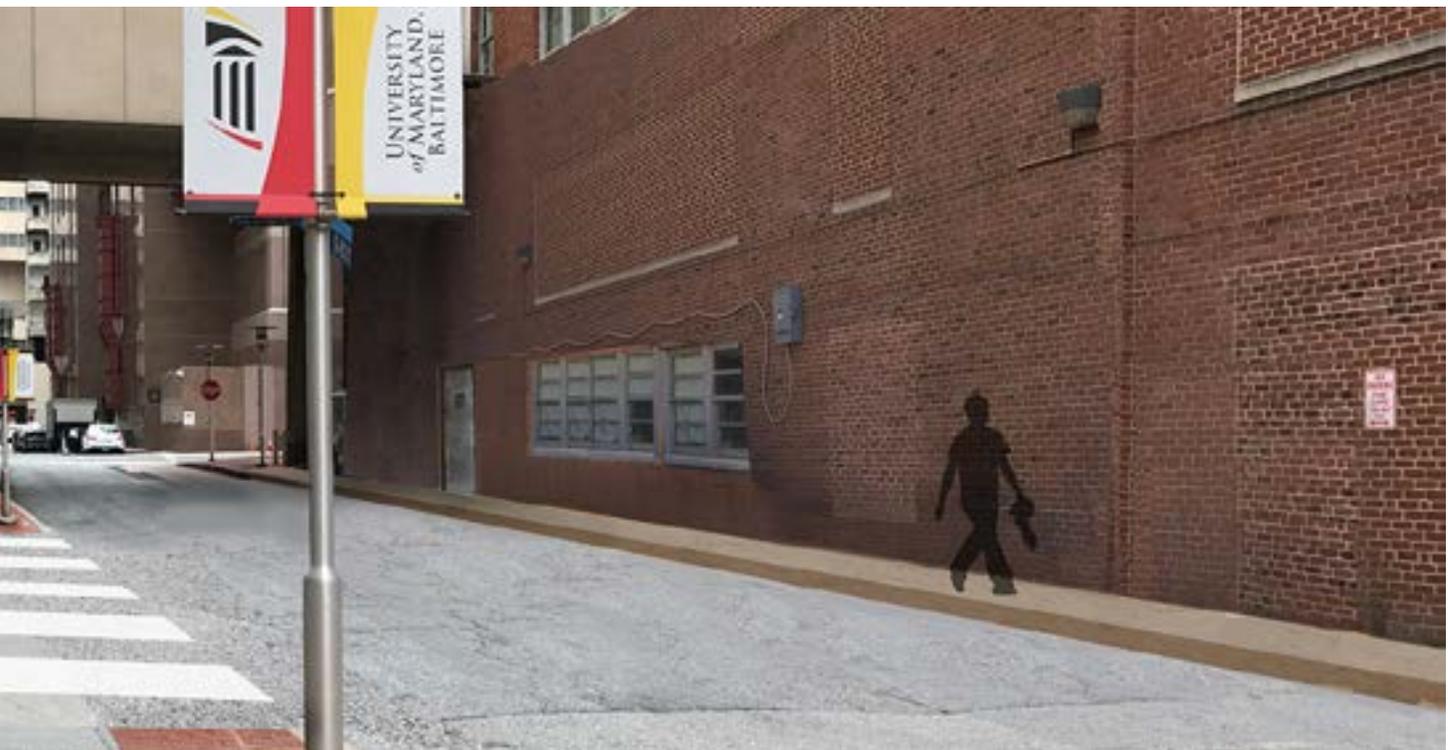
- South Arch Street between Baltimore Street and Redwood Street: streetscape and roadway improvements
- Arch Street between Vine and Lexington Streets
- Baltimore Street between MLK and Arch Street: streetscape improvements and curb extensions (north side) in conjunction with Baltimore Link
- Lexington Street between Pearl and Greene Street: streetscape improvements
- Greene Street between Lexington and Fayette Street: streetscape improvements
- Plaza Park: streetscape improvements and rejuvenation
- Fayette Street between Pine and Paca Street: curb extensions (south side) in conjunction with BaltimoreLink



Existing South Arch Street



Proposed South Arch Street with streetscape and roadway improvements



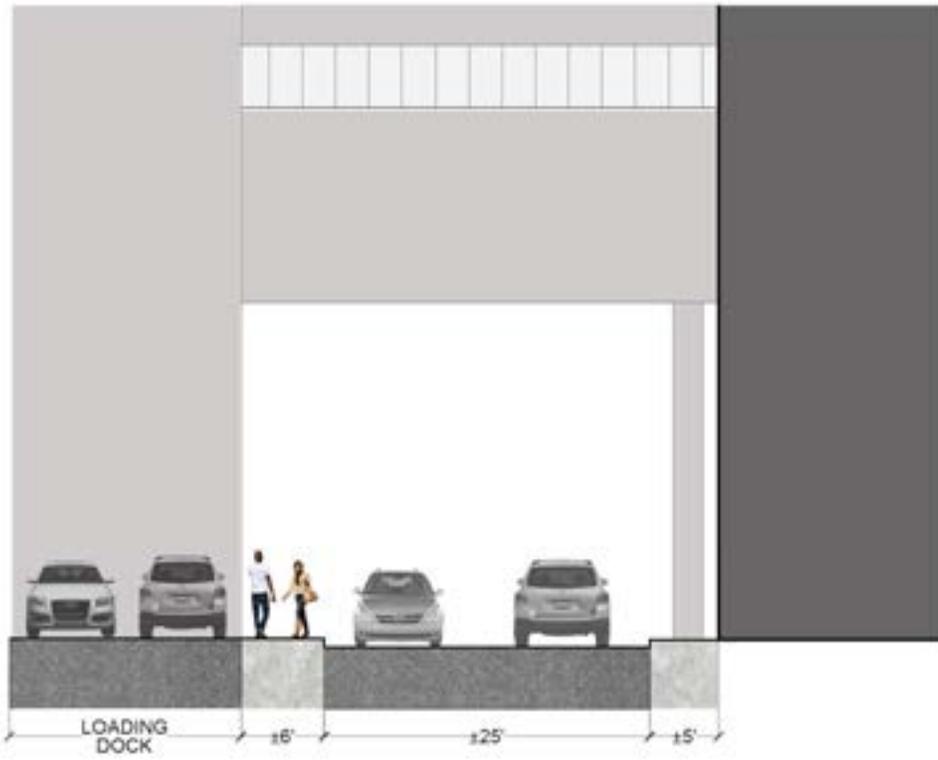
ARCH STREET IMPROVEMENTS

South Arch Street between Baltimore Street and Redwood Street (between Bressler Research Building and UMMC) is a highly utilized pedestrian connection across campus. However, the pedestrian experience is uninviting as there is only a narrow sidewalk on the west side of the street surrounded by vast areas of concrete. This length of Arch Street also has no sense of UMB identity. It passes by a small surface parking lot and loading dock for the Bressler Research Building that also interrupt the pedestrian experience. Other sections of Arch Street that similarly accommodate

major loading needs have been drastically improved, including the block of Arch Street between Baltimore Street and Fayette Street (between the School of Dentistry and the VAMC). In a similar fashion to the pedestrian treatment on that block, the Facilities Master Plan proposes narrowing the roadway from approximately 25 feet to 20 feet to expand the area for a wider sidewalk with brick banding, including lighting and banners for UMB identity while still allowing for emergency vehicle access. The surface parking lot has the potential to be screened with planting and crosswalks installed.



Proposed location of Arch Street improvements



Existing Conditions



Proposed Conditions

UMB FUTURE PROJECTS

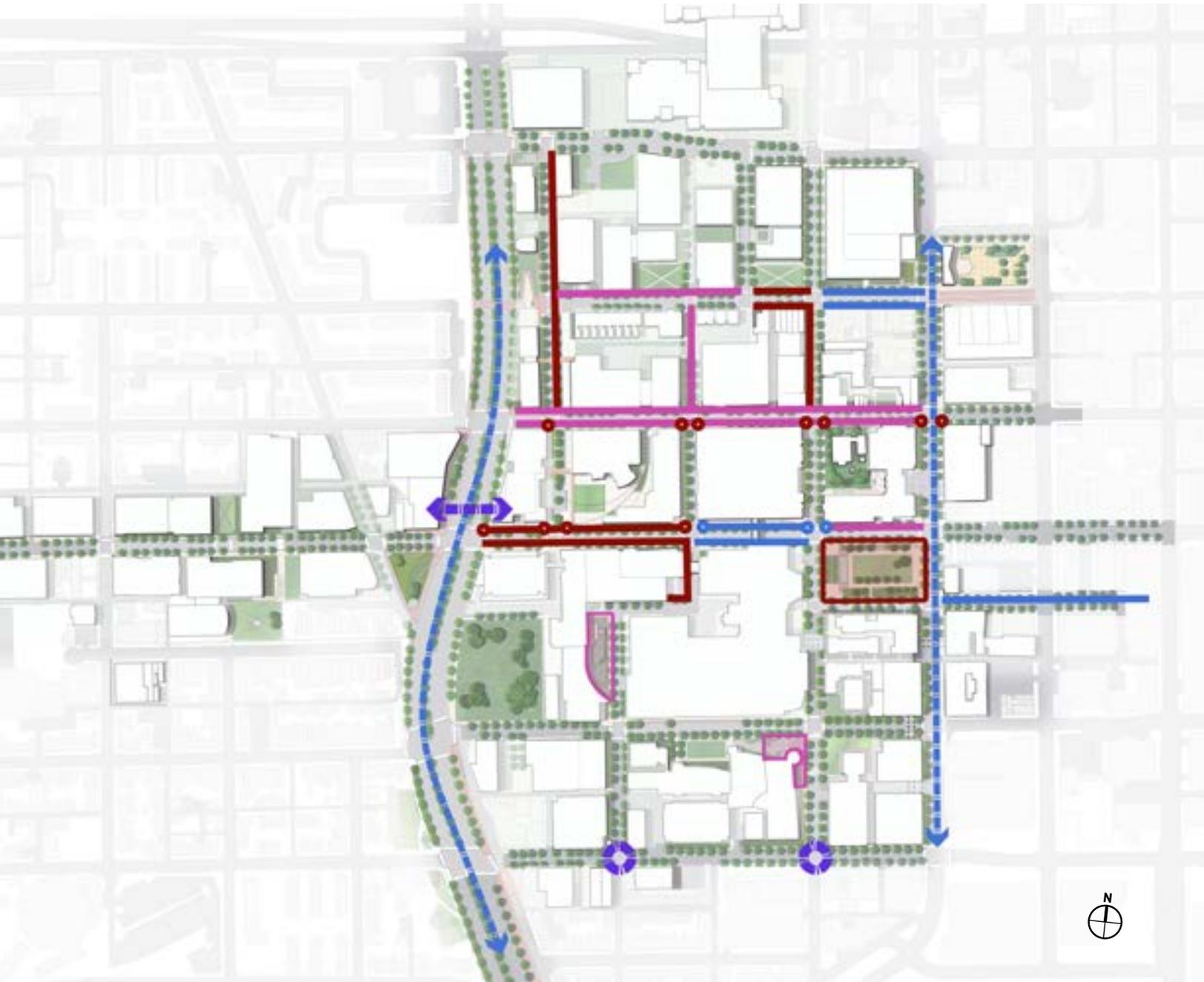
Prioritized projects that UMB should lead to improve the campus.

- Library Entry Plaza: Reduce hardscape and improve landscape including rainwater harvesting opportunities
- HSF II Green Space: Improve landscape
- Lexington Street between Pine and Pearl Street: streetscape improvements
- Baltimore Street (north side) between Greene and Paca Street: streetscape improvements
- Pine Street (east side) between Saratoga and Fayette Street: streetscape improvements and bioretention opportunities
- Fayette Street between MLK Blvd and Paca Street: streetscape improvements
- North Arch Street between Lexington and Fayette Street: streetscape and roadway improvements and bioretention opportunities
- Lexington Street open spaces associated with proposed building projects: rainwater harvesting opportunities

PARTNERSHIP PROJECTS

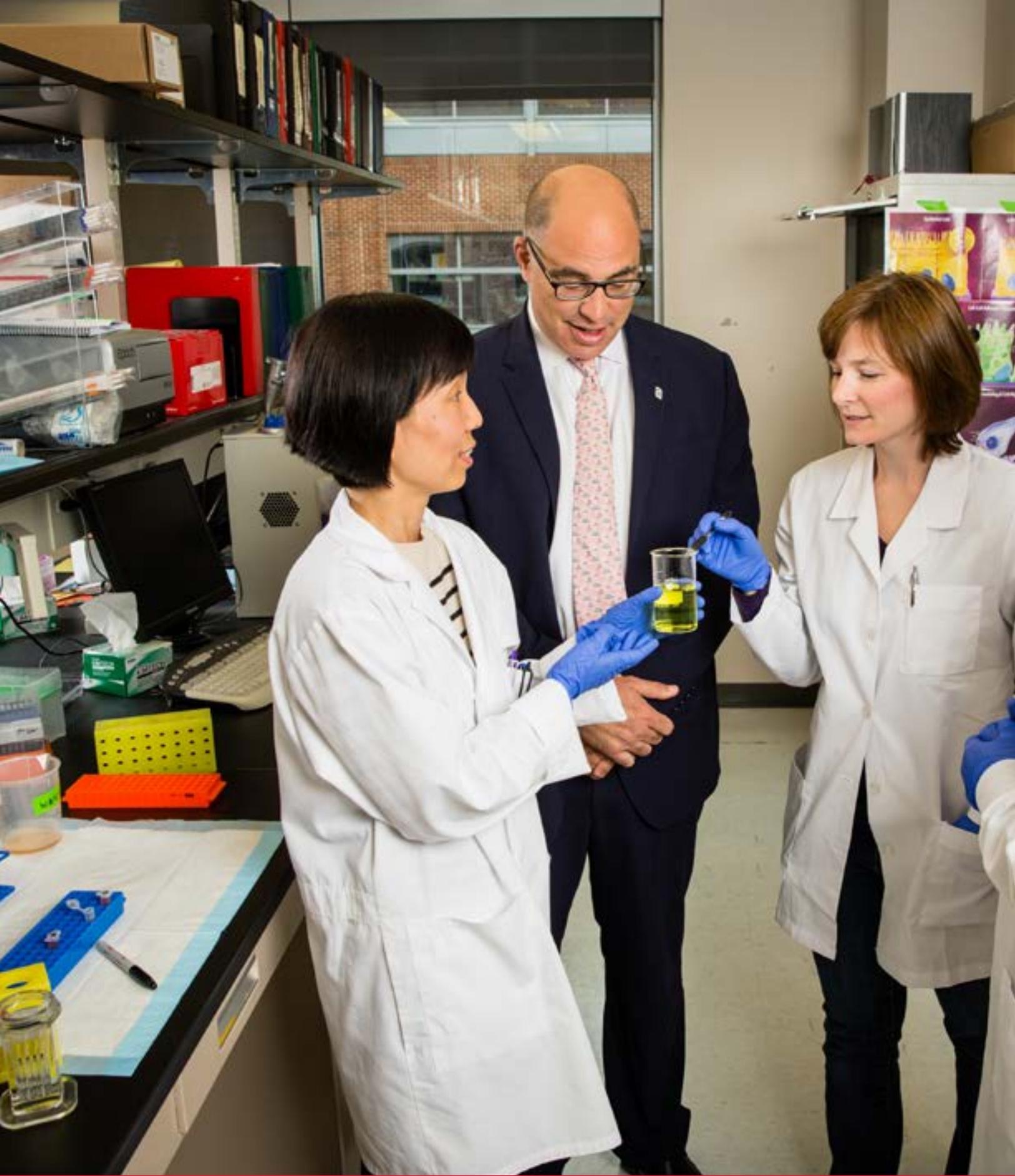
Projects that UMB should partner with Baltimore City and/or institutional partners.

- Paca Street: two-way separated bike lane
- MLK Blvd: bike infrastructure, tree and sidewalk upkeep, enhanced crosswalks
- Lexington Street between Greene and Paca Street: streetscape improvements
- Baltimore Street between Arch and Greene Street: streetscape improvements and curb extensions (north side) in conjunction with BaltimoreLink
- Redwood Street from Paca Street to Light Rail stop: streetscape improvements
- Pedestrian bridge across MLK Blvd between UMB School of Pharmacy and BioPark Gateway Site
- Pratt Street: pedestrian crossing improvements at Penn Street and Greene Street



PUBLIC REALM OPPORTUNITIES

- ○ UMB Priority Projects
- ○ UMB Future Projects
- ○ Partnership Priority Projects
- - - ○ Partnership Future Projects





Implementation

Phasing Plan

The following projects have been identified as priorities for the next 10 years.

SITE SPECIFIC INVESTMENTS

- Ongoing deferred maintenance/facilities renewal
- Medical School Teaching Facility (MSTF) renovation and infrastructure upgrades
- School of Nursing north renovation
- Davidge Hall restoration
- Bressler Research Building renovation
- Pharmacy Hall south renovation
- Howard Hall renovation
- 121 North Greene Street renovation
- University Plaza Park upgrades

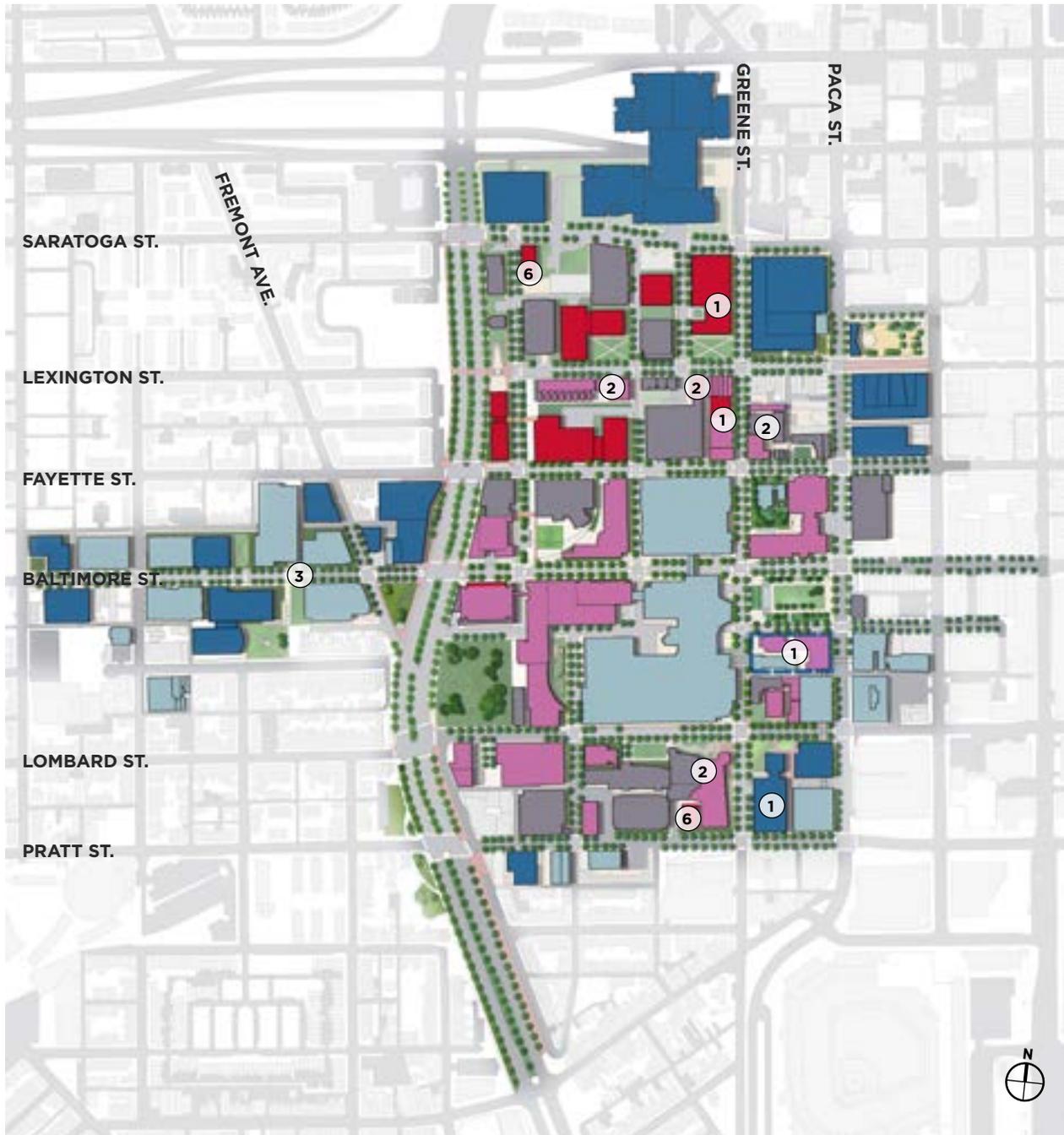
MULTIPLE SITE OPTIONS

- Electric Substation and Electrical Infrastructure
- School of Social Work
- Interprofessional Education Center
- Community Engagement Center
- Shared Resource Center
- *M*Power Initiatives
- Neuropsychiatric Research Institute
- Campus streetscape enhancements
- Campus wide infrastructure improvements
- Retail/food, housing, and recreation partnerships

NEAR-TERM PROJECTS

Of these projects, the following six are considered near-term priorities.

1. School of Social Work
2. Interprofessional Education Center
3. Community Engagement Center
4. Revitalization of existing buildings
5. Greening the campus
6. Substation and electrical infrastructure



FACILITIES MASTER PLAN

- UMB Existing
- UMB Proposed Project Sites
- UMB Renovation/Renewal
- Existing Partnerships
- Proposed Partnership Projects

- 1 School of Social Work
- 2 Interprofessional Education Center
- 3 Community Engagement Center
- 4 Revitalization of existing buildings
- 5 Greening the campus
- 6 Substation and electrical infrastructure

PROPERTY ACQUISITION

In 2002, the UMB “Omnibus” property acquisition plan was modified to include a larger catchment area around the campus. In 2015 this plan was reauthorized by the USM board of Regents.

COST ESTIMATION

Broad planning cost estimates have been developed for the projects listed in the Facilities Master Plan. The estimates are based on comparable facilities and reflect University experience. The priority projects for the next 10 years have an estimated cost of \$826 million for site specific investments and \$624 million for projects with multiple site options.

The source(s) of funding was not identified for the individual projects. Nor does inclusion of these projects in the Facilities Master Plan imply that they have been approved by the University System Board of Regents.

DESIGN GUIDELINES

Design guidelines serve as a guide for all building, site, and landscape improvements on the UMB campus. They are meant to provide the general direction for the design of campus improvements so that the concepts can be implemented with a certain degree of consistency, maintaining a campus identity and united visual character with the expressed goal of creating a recognizable university precinct in Downtown Baltimore. The guidelines were updated in 2010 and can be found in a separate document.





UMB ONMIBUS PROPERTY ACQUISITION PLAN

■ Property Acquisition Zone

■ UMB Owned



1040 Hull Street #100
Baltimore, Maryland 21230
www.asg-architects.com