

Town Gown Report to the City of Cambridge



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Town Gown Report to the City of Cambridge

2012-2013 Term (7/1/12 - 6/30/13)

Submitted December 13, 2013

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I. Existing Conditions

A. Faculty & Staff

	2009	2010	2011	2012	2013	2023 (projected)
Cambridge-based Staff						
Head Count ¹	9,778	8,857	8,893	9,124	9,329	9,000-10,000
FTEs	8,258	7,461	7,483	7,707	7,954	
Post-Doctoral Staff ²					1,402	
Cambridge-based Faculty						
Head Count	996	1,012	1,002	1,003	1,007	~1,100
FTEs	991	1,009	997	997	1,002	
Number of Cambridge Residents Employed at Cambridge Facilities						
	2,267	2,170	2,258	2,359	2,305	~2,400

¹ The decrease in staff in 2010 is due mainly to the separation of the Broad Institute, which was effective July 1, 2009.

² Post-Doctorals are classified as staff and included in the headcount for Cambridge-based Staff.



B. Student Body³

	2009	2010	2011	2012	2013	2023 (projected)
Total Undergraduate Students	4,138	4,218	4,285	4,363	4,477	4,500
Day	4,138	4,218	4,285	4,363	4,477	
Evening	N/A	N/A	N/A	N/A	N/A	
Full Time	4,105	4,190	4,241	4,335	4,456	
Part Time	33	28	44	28	21	
Total Graduate Students	5,916	5,960	6,040	6,259	6,431	6,400-6,600 ³
Day	5,916	5,960	6,040	6,259	6,431	
Evening	N/A	N/A	N/A	N/A	N/A	
Full Time	5,889	5,940	6,017	6,229	6,417	
Part Time	27	20	23	30	14	
Non-Degree Students	151	134	153	173	163	
Day	151	134	153	173	163	
Evening	N/A	N/A	N/A	N/A	N/A	
Total Students Attending Classes in Cambridge	10,205	10,312	10,478	10,795	11,097	10,900-11,100
Non-resident students not included	151	72	88	99	92	

³ There is not an overall plan to make changes to the graduate student population. Enrollment fluctuates depending on the independent decisions of academic departments. These decisions are governed by a variety of factors including the availability of research funding and the ability of international students to obtain visas. International students account for approximately 41% of the graduate student population.



C. Student Residences

	2009	2010	2011	2012	2013	2023 (projected)
Number of Undergraduate Students residing in Cambridge						
In Institute-approved housing (includes dormitories, fraternities, sororities and independent living groups)	3,315	3,328	3,410	3,503	3,589	3,500-3,600
In off-campus housing owned and managed by MIT	5	3	14	22	7	
In off-campus non-MIT housing	77	101	92	71	66	
Number of Graduate Students residing in Cambridge						
In Institute-approved housing (includes dormitories, fraternities, sororities and independent living groups)	2,275	2,313	2,286	2,352	2,392	2,100-2,500
In off-campus housing owned and managed by MIT	161	129	96	111	123	
In off-campus non-MIT housing	1,652	1,690	1,903	1,736	1,779	
Student Parking						
Number of parking spaces maintained for undergraduate and graduate students (including resident and commuter parking)	1,103	1,103	1,103	1,103	1,103	

D. Facilities & Land Owned⁴

	2009	2010	2011	2012	2013	2023 (projected)
Acres						
Tax Exempt	160	160 ⁵	160	161 ⁶	161	
Taxable	95	94	93	93	93	
Number of Buildings (academic)	104	107	110	110	109	
Dormitories						
Number of Buildings	26	26	28	28	28	
Number of Beds	5,364	5,524	5,491	5,940	5,940	
Size of Buildings (gross floor area)						
Institutional/Academic	6,015,884	6,401,422	6,766,465	6,800,368	6,808,234	
Student Activities/Athletic/Service	2,245,478	2,443,534	2,462,281	2,469,050	2,418,825	
Dormitory/Nontaxable Residential	2,930,504	2,930,215	2,919,890 ⁷	2,924,151	2,921,880	
Commercial ⁸	5,112,406	5,138,431	5,096,716	4,962,958	4,962,958	
Taxable Residential ⁹	175	175	171	164	164	

⁴ MIT and the City agreed that sub-area divisions are unnecessary in this section.

⁵ While this figure remains the same, previous years' acreage erroneously included 1 acre that was not tax-exempt. The acreage should have been reported as 159 for 2009.

⁶ This figure was erroneously reported as 160 rather than 161 for 2012.

⁷ The decrease in the gross floor area of Dormitory/Nontaxable Residential is due to a correction in space plans for NW86. In 2010 the gross floor area should have been reported as 2,903,504 gsf.

⁸ MIT's commercial properties are measured by rentable square feet.

⁹ MIT's taxable residential properties are measured by rental units.



Parking spaces maintained in Cambridge

Number of parking spaces maintained for students: 1,103

Number of parking spaces maintained for faculty, staff and visitors: 3,267

Housing

	Tax Exempt: MIT-Owned and Managed Housing	Tax Exempt: Other Housing	Taxable: MIT-Owned and Managed Housing ¹⁰	Taxable: Other Housing (Univ. Park & 100 Mem. Dr. Ground Leases)
2009				
Number of Units	none	none	175	1,105
Number of Buildings	none	none	15	7
2010				
Number of Units	none	none	175	1,105
Number of Buildings	none	none	15	7
2011				
Number of Units	none	none	171	1,101
Number of Buildings	none	none	15	7
2012				
Number of Units	none	none	164	930 ¹¹
Number of Buildings	none	none	15	7
2013				
Number of Units	none	none	164	930
Number of Buildings	none	none	15	7
2023 (Projected)				
Number of Units	none	none	164	930
Number of Buildings	none	none	15	7

¹⁰ Occupied by both MIT and Non-MIT residents.

¹¹ Change in the number of units from previous years is the result of a change in reporting methodology



Property Transfers

Cambridge properties purchased since filing previous Town Gown Report:	None
Cambridge properties sold since filing previous Town Gown Report:	None
Planned dispositions or acquisitions:	None

E. Real Estate Leased

Use	Leased Location ¹²	Square Feet ¹³
Institutional/Academic	1 Cambridge Center	35,594
Institutional/Academic	5 Cambridge Center	17,705
Institutional/Academic	7 Cambridge Center	231,028
Institutional/Academic	11 Cambridge Center	10,940
Institutional/Academic	300 Tech Square	6,451
Institutional/Academic	500 Tech Square	86,515
Institutional/Academic	600 Tech Square	83,561
Institutional/Academic	700 Tech Square	8,876
Institutional/Academic	One Hampshire Street	23,378
Institutional/Academic	One Charles Street	36,228
Institutional/Academic	One Main Street	17,274
TOTAL		557,550

F. Payments to City of Cambridge

	FY 09	FY 10	FY 11	FY 12	FY 13
Real Estate Taxes Paid ¹⁴	\$31,219,327	\$32,978,289	\$34,926,204	\$36,524,580	\$38,656,349*
Payment in Lieu of Taxes (PILOT) ¹⁵	\$1,774,115	\$1,701,638	\$1,744,179	\$2,354,917	\$2,210,567
Water & Sewer Fees Paid	\$4,661,336	\$5,403,736	\$5,938,689	\$5,997,575	\$5,658,543
Other Fees & Permits Paid	\$996,525	\$851,810	\$2,163,013	\$1,218,687	\$2,003,749
Total Payments**	\$38,651,303	\$40,801,473	\$44,772,085	\$46,095,759	\$48,529,208

* MIT's FY 13 real estate tax payment represents 12.2% of the City's total tax revenue stream.

** MIT's Cambridge First Purchasing Program resulted in the additional investment of over \$67.8 million in Cambridge businesses in FY 13. This program, together with taxes paid, payments in lieu of taxes, and municipal fees, brought MIT's 2013 economic contribution to the City to more than \$116.3 million.

12 Leased by MIT from third-party landlords.

13 The square footage will, in most cases, only be a portion of the entire building.

14 Includes real estate taxes paid by MIT, taxes paid on MIT-owned property through ground leases, and real estate taxes generated by Independent Living Groups.

15 The amount of MIT's PILOT payment is governed by the 2004 agreement between MIT and the City of Cambridge.

G. Institutional Shuttle Information

Route Name	Vehicle Type and Capacity	Frequency of Operation	Weekday Hours of Operation	Weekend Hours of Operation
Tech Shuttle	Mid-size transit 28 seats	10 minute peak, 20 minute off peak	6:15AM – 7:10PM	None
Boston Daytime Shuttle	Mid-size transit 28 seats	25 minute (Sept - May)	8:00AM – 5:54PM	None
Cambridge East Saferide	Mid-size transit 28 seats	30 minute	6:00PM – 2:25AM	6:00PM – 3:25AM
Cambridge West Saferide	Mid-size transit 28 seats	30 minute	6:00PM – 2:31AM	6:00PM – 3:31AM
Boston East Saferide	Mid-size transit 28 seats	20 minute	6:00PM – 2:37AM	6:00PM – 3:14AM
Boston West Saferide	Mini-bus 14 seats	30 minute	6:05PM – 2:31AM	6:05PM – 3:31AM
Grocery Shuttle	Mid-size transit 28 seats	45 minute	none	Sunday 11:30AM – 4:30PM

Ridership Data

Route Name	Annual Ridership
Tech Shuttle	300,000
Combined Saferide Shuttles	277,000
Boston Daytime Shuttle	112,000
Grocery Shuttle	6,000
EZRide (Northwest Shuttle) ¹⁶	263,000

Shuttle Coordination Efforts

MIT's shuttle service is designed to ensure safety and meet the demands of faculty, staff, and student users. As the demand for services changes, the Institute adjusts its shuttle services to best serve the community. There is very little overlap of MIT shuttle service with other public or private bus and shuttle services. The MIT Northwest Campus is serviced by the EZRide shuttle which is operated by the Charles River TMA.

The Parking and Transportation Office in cooperation with the Graduate Student Council and the Undergraduate Association operates a Sunday afternoon Grocery shuttle with service to Trader Joe's and Whole Foods Market from campus residences. This has resulted in better service with fewer vehicles on the road.

¹⁶ Operated by CRTMA.

II. Future Plans Narrative

A. Moving Ideas into Action

In last year's Town-Gown report, MIT had the opportunity to introduce its new president L. Rafael Reif, and to report on some of the themes he articulated in his inaugural address. President Reif underscored the continuity of traditional concerns of the Institute such as advocacy for basic research, commitment to diversity and inclusion, and application of knowledge to the world's greatest challenges. President Reif also emphasized the importance of strategic support for other growing parts of MIT's culture, such as engagement and collaboration on a global scale, and support for the culture of innovation and entrepreneurship that starts in Cambridge, but changes the world.

The Future of MIT Education

In particular, President Reif called attention to evolving technological changes that have placed the residential research university at "a historically important, but difficult crossroads – one full of opportunity, but also full of risks."

President Reif was referring to the powerful emergence of online educational technology, in which MIT has been a prominent leader with MITx and its collaborative edX platform. President Reif posed several questions: What will be the impact of these trends on the residential research university? How can the new technologies "strengthen the education we offer on our own campus?" How will the MIT community lead in inventing the "residential research campus of the future?" The scope of this effort is about as large as can be imagined for a research university, with the potential to launch long term changes that will have powerful impacts on how MIT plans and operates its facilities here in Cambridge.

To begin to answer these questions, President Reif established the Institute-wide Task Force on the Future of MIT Education (<http://future.mit.edu/>). President Reif charged the Task Force with several responsibilities including: proposing an "ecosystem" for ongoing research,

learning, and innovation about the future of education; recommending educational experiments on and off campus; and considering current and future financial approaches. Among the questions addressed by the Task Force:

1. What can MIT learn from the many examples of "blended models" of education, which seek to magnify the effectiveness of online instructional tools with in-person teaching?
2. MIT has traditionally used a four-year, two-semester system. More modular models are also being tested. What other approaches could emerge by 2020?
3. Online technologies have already proven very effective at instruction—the conveying of content. But an MIT education clearly includes many learning experiences that can only occur in person. Which elements would be enhanced by online technologies, and which truly demand interaction in person? What new experiences could courses incorporate?
4. How can MIT improve accessibility and affordability?
5. What are the implications for MIT's financial model and pricing structures?
6. What are the implications for MIT's physical spaces, including classrooms, research laboratories, residential spaces and common spaces?
7. What are the pathways and barriers, advantages and disadvantages, to extending important aspects of the MIT educational experience to vastly more learners than we could ever bring to our campus?

President Reif recently released the preliminary report of the Task Force. The possibilities that the Task Force puts forward in beginning this reimagining process encompass four themes: massive scale of adoption, increased potential and demand for modularity, blurring of boundaries, and affordability and access. Inherent in each of these themes is an element of flexibility — flexibility in what

"I believe that higher education has reached a historically important, but difficult crossroads – one full of opportunity, but also full of risks."

-President Rafael Reif



defines a class; in how one thinks of an MIT student; and in how, when, and where instructors teach and students learn.

Among the many possibilities presented, the Task Force notes the potential for leveraging opportunities created by edX to expand global education for MIT students. For example, the group presents a number of ideas for students to gain real-world experience by teaching or conducting research in one of the more than 1,000 edX communities that have developed worldwide in just the last 16 months.

The Task Force also notes the potential for unbundling elements of a residential campus experience, and even of individual classes. Its report suggests taking a strategic approach in considering how classes might be reshaped depending on their content and on individual students' learning objectives.

The Task Force presents a number of space-related issues that the Institute may need to consider in accommodating future generations of learners. It suggests, for instance, that developing academic villages across campus may enhance interaction both inside and outside of the classroom and laboratory, promoting serendipitous interactions among students and faculty members.

With the preliminary report now complete, the Task Force will shift its focus to three action-oriented steps: First, it will use the abundance of data collected through surveys of faculty, instructors, and students, as well as feedback collected in meetings with academic departments and via the Idea Bank, to evaluate all of the proposed possibilities. Second, the Task Force will articulate concrete steps to bring the best of those ideas to fruition. Finally, the Task Force will define an ecosystem in which its recommendations can be analyzed more comprehensively and put into action.

Other Initiatives

Notwithstanding the scope and potential scale of the Future of MIT Education work, MIT has been moving to seize opportunities and to respond to challenges that are now emerging.

For example, a committee to explore an MIT Innovation Initiative has recently been formed to strengthen and leverage the many strands of activity at MIT in innovation and entrepreneurship. As the charge to the committee states:

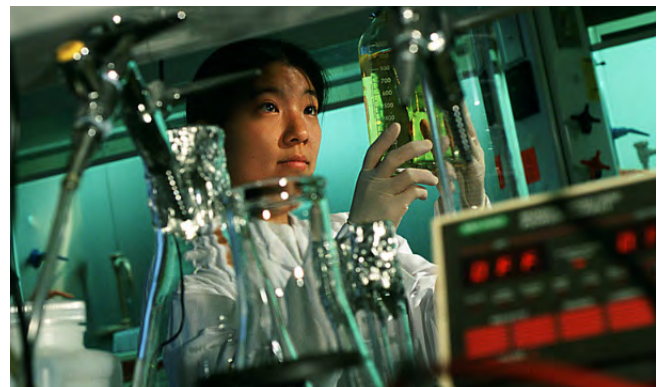
Building on MIT's long tradition of making and doing, the Initiative will give students, faculty, alumni and others beyond MIT the space, skills, knowledge, tools and opportunities to design, build, test, prototype, hack, scale up and accelerate the transformation of academic ideas into practical innovations through ventures, partnerships and networks.

The Initiative will actively celebrate, support and intensify MIT's culture of making, our faith in the creative power of mind and hand. To society's boldest makers, we say: "If you want to change the world, make yourself at home at MIT."

There are yet other initiatives that are underway, especially around environmental and energy research, and numerous international collaboration programs around the globe.

Sequestration

In the midst of these many streams of powerful activity, there are some specific challenges that go to the heart of MIT's mission and undermine the advances in science and technology that are the lifeblood of MIT. Most directly is the Federal budget sequestration. Budget cuts from 5.1% to 7.3% in the federal agencies that sponsor federal research started last March and are scheduled to last ten years.



This reduction in federal research support has a direct and immediate impact on the Cambridge and regional economy. The roughly \$2.5 billion in annual medical research funding that comes to Massachusetts has been cut by \$125 million, with no reversal in sight. Over the longer term, the reduction in research funding undermines the innovation economy that is central to Cambridge's success and to the growth of the economy in the Commonwealth. It can delay basic advances that become the platform for all kinds of new technologies, from digital learning to developing an AIDS vaccine to 3D printing – all emerging scientific applications that have roots in federally-sponsored research.

The loss of federal funding and uncertainty about the future will also hurt the next generation of scientists and engineers, as much of graduate education at MIT is financed through research funding. Whether the reduction in funds reduces the numbers of students who have the opportunity for a graduate degree or deters scientists and engineers from a career in research or both is unfolding; however, negative impact on the growth of knowledge and technology will be long lasting.

Security

This was also a year of coming together as a stronger community at MIT and in Cambridge, as MIT was overwhelmed by the tremendous outpouring of care from law enforcement, the nation, and the world in the aftermath of the Boston Marathon bombings and death of MIT Police Officer Sean Collier.

This past spring, MIT had the opportunity to reassess its emergency preparedness, emergency communication protocols, and network security practices. MIT was able to introduce improvements to its systems and procedures to ensure the safety of our community and the integrity of our campus. MIT upgraded its emergency-preparedness training program, revised its emergency communication protocols so that MIT is able to notify people within minutes of an emergency situation, and promoted enhanced participation in MIT's alert program. The events of the past year have reminded MIT of the importance of security and preparation for adverse events of all types, including storms and electric utility failures. Campus resiliency and security concerns are and will continue to be increasingly important in all of MIT's endeavors.

MIT 2030: MIT's Planning Framework

MIT continues to be engaged in and served by MIT 2030, a planning tool for the physical campus (<http://mit.edu/mit2030/>).

MIT 2030 is not a fixed plan. Rather, it's an ongoing process, a tool for envisioning — and inventing — a vibrant future for our physical campus and the nearby innovation cluster. The MIT 2030 framework provides principles that help focus and clarify this process. The objectives of MIT 2030 are to:

- Align campus renewal priorities with current and future academic needs and opportunities;
- Pursue an overall development approach that integrates campus planning objectives and MIT real estate activity to continue creating and supporting an innovation ecosystem while fostering fruitful collaborations between MIT and its surrounding community; and
- Provide thoughtful guidance for the ongoing physical stewardship of the Institute, to ensure the continuation and integrity of its mission.

In carrying out these objectives, MIT is guided by the following principles:

- Where possible, address facilities requirements through renewal and renovation;
- Accelerate systematic capital renewal programs (renewal of roofs, elevators, other systems); and
- Create flexible science and technology research space that responds to innovative academic and collaborative initiatives

The East Campus/Kendall Gateway study is a good example of how the objectives of MIT 2030 continue to be fulfilled. The intent of the study is to create a long-range development framework to accommodate future academic, commercial, and residential uses on MIT property in Kendall Square, as well as a gateway to the East Campus area. Goals for the study include:

- Enhancing the existing Kendall Square innovation cluster by providing space for new innovative academic initiatives and commercial enterprises;
- Creating a lively urban environment by developing a destination gathering and arrival place with amenities and services and active streetscapes for all;
- Establishing a vibrant new gateway and connective links between MIT, the central business district, and the Cambridge community; and
- Creating an overall development plan that is feasible.

This, of course, builds on the plans that supported the MIT Kendall PUD-5 re-zoning, by refining and extending the planning effort to be more fully integrated.

B. Accelerated Capital Renewal and Comprehensive Stewardship

Over the past year, MIT's Accelerated Capital Renewal Program has remained focused on its fundamental goals of: maximizing the impact of investment; stabilizing deterioration through strategic prioritization of needs; and improving accountability and stewardship of physical assets. Some of the notable accomplishments of the program include:

- Program governance and oversight has been formalized and includes representation from leadership circles across the Institute. This has provided direction to the program and streamlined deliberation and project scoping discussions.
- In collaboration with academic administrators and the Department of Facilities, a prioritization of buildings has been completed enabling program leaders to target resources to areas where they will achieve maximum impact to the community.
- A resource allocation model was developed in response to the program's need to address both small scale repairs as well as major building renovations and to make timely decisions for immediate needs, while not losing sight of long-term planning concerns.
- A 20-year funding strategy was established that includes a financial plan that will provide funding to

reducing the Facility Condition Index (a measure of deferred maintenance on the campus) by 50% from the 2012 Index level.

- Over 155 capital renewal projects ranging in size from \$10,000 to \$25,000,000 have been initiated since the program was introduced. These projects will improve or replace deficient systems in 82 different buildings and have a value of about \$105 million.

Another major component of the overall program is to ensure that the regular maintenance of MIT's buildings reflects higher standards of asset management. Starting with a collection of new or substantially renovated buildings on campus, the Comprehensive Stewardship Group has been established to move MIT's existing maintenance level of effort to one of proactive stewardship. This includes not only a higher day-to-day maintenance effort, but also regular upgrades of building systems and equipment. The Comprehensive Stewardship Group portfolio includes 13 buildings and 3.1 million square feet, almost 25% of the campus.

This coordinated effort of Capital Renewal and Comprehensive Stewardship will reduce deferred maintenance in our buildings, better enable our buildings to support the Institute's initiatives, and provide a systematic approach to our stewardship of the campus.

C. MIT Students, Faculty, and Staff

The number of undergraduates at MIT dropped by 524 over 25 years, reaching a low point of 4,109 in 2004. The restoration of the undergraduate population to a target of 4,500 students is effectively complete with a 2012-2013 undergraduate population of 4,477. (Please note that the figures for student population reflect the prior school year's numbers.) The 2000-2010 decade featured low or negative growth in the number of graduate students, totaling below 6,000 in this period.

For the last three years, there has been average annual growth of less than 3% in the graduate student population resulting in a total of 6,431 graduate students. Graduate student population growth is contingent on a large number of factors, including research funding levels, international student access to visas, and overall economic conditions.

For more than 25 years, the number of tenured faculty members has remained stable at around 1,000. The sepa-



ration of the Broad Institute from MIT in July 2009 was reflected in the 9.4% decrease in total staff for the 2009-2010 school year. This change was a one-time reduction in staff population and removed a growth driver from the Institute's population numbers. There was a decrease in the staff population growth rate last year from 2.6% to 2.4% for a total staff population of 9,329.

Postdoctoral scholars are included in the staff population. There were 986 postdoctoral staff in 2008 and 1402 this

year, an increase of 42%. The fastest growth took place early in this period, but has since dropped below 5%. One important factor in this growth has been uncertainty over research funding. Departments are cautious about admitting graduate students that need to be supported for a sustained amount of time when the outlook for future research funding is uncertain. With only short-term

funding in hand, postdoctoral hires make sense: the vast majority of postdoctoral appointments last for two or fewer years. As noted above, there has been flat or negative growth in the graduate student population until the last two years, the converse of the changes in postdoctoral scholar growth.

D. Housing

Undergraduate Housing

MIT provides housing for its undergraduate students in 12 residence halls. In addition, students may choose to live in one of 37 residential fraternities, sororities, or independent living groups (FSILGs) in Boston and Cambridge. Housing is guaranteed for all four years of the undergraduate experience; therefore over 98% of MIT's 4,477 undergraduates live in residence halls or FSILGs. In the course of evaluating the existing conditions of our residences as part of renewal planning, MIT discovered that there was severe damage inside the walls of the Bexley Residence Hall. The building has been vacated and returning students were placed in other MIT housing. Plans for Bexley and further consideration of undergraduate housing needs and opportunities are being formulated.

Graduate Housing

Graduate housing is provided in seven residence halls and apartment buildings on the MIT campus. Currently, MIT houses 39% of its total graduate student population. 58% of students who live in Cambridge are housed in MIT graduate residences. Since 1997, the number of MIT graduate students housed on campus has risen from 1,660 to 2,515. During that time, MIT has invested significantly in the creation of a graduate resident community in the northwest sector of the campus that has brought on line over 1,300 new graduate beds in three new or renovated facilities:

- The Warehouse, 224 Albany Street (2001): 120 beds
- Sidney-Pacific, 70 Pacific Street (2002): 681 beds
- Ashdown, 235 Albany Street (2008): 541 beds

Graduate Student Housing Study

Based on recommendations from the Faculty Task Force on Community Engagement in 2030 Planning, Former Provost Chris A. Kaiser and Chancellor W. Eric Grimson



Ashdown Graduate Residence

charged the Graduate Student Housing Working Group as follows: “MIT’s strength comes from the high quality of its people and in taking a leadership role in developing the future of the residential research university. In this regard, MIT needs to do the utmost to maintain competitiveness in recruiting the best graduate students and providing a rich and engaging residential experience for them. This Working Group is asked to:

1. Evaluate the ways in which the graduate student housing needs are currently met, and identify strengths and weaknesses in our current approach in the context of graduate student recruiting and satisfaction.
2. Recommend ways by which the graduate student housing needs might be best served into the future in order to maintain competitiveness. Any recommendations which require new resources should be weighed against the need for other resources to support the graduate student population.”

Professor of Urban Studies and Planning and former Chancellor Phil Clay is chair of this group, which includes MIT faculty, students and staff, as well as ex officio participation by Cambridge Housing Director Chris Cotter. This assessment is continuing, but the final report should be responsive to the housing inquiries in this year’s Town Gown.

Faculty Housing Assistance Program

To assist with the high cost of housing in the regional area, MIT provides flexible, tax efficient, low interest mortgage programs for its faculty. The overall program has proven

to be an important recruiting and retention tool and is similar to ones offered by MIT's peers. The program enrollment is approximately 90% of eligible faculty. There are programs for both junior and senior faculty, which were significantly enhanced in 2005. Over 500 faculty members have participated in these programs. When last reviewed in 2012, 146 participants lived in Cambridge. An important goal of the program is to promote the abil-

ity for faculty to choose where they would like to live in the region.

Some faculty and senior administrators live on campus as residence hall housemasters. These housemasters are invested in the student experience and live with 100-500 students. There are currently 46 housemasters at MIT living in 19 residence halls.

E. Looking Ahead at MIT Planning & Development

Development Opportunities

As identified on Map 3, several areas in and around the MIT campus provide development opportunities, but, in most cases, no specific site has been selected for any particular building. Parking lots, buildings that are not appropriate for contemporary academic requirements, obsolete commercial buildings and aging parking garages are all possibilities for rehabilitation or redevelopment in the future.

The areas outlined on Map 3 support the narrative describing some of the development opportunities in and around MIT. The borders are fully permeable and are not meant to be mutually exclusive. Although some major rehabilitation projects are referenced, the focus is on development and redevelopment that substantially alters the built form around the campus. It is also an attempt to more broadly include all MIT-affiliated projects, including academic, MIT-managed investment projects and investment projects on MIT land being managed by others, such as Forest City Enterprises and Novartis.

There has been an evolution in MIT's approach to real estate investment and academic development leading to greater integration of these efforts over time. Historically, most MIT investment activity has taken place at some distance from the core campus, sometimes with commercial partners. Then, as now, real estate investment has provided income that supports MIT's core mission of education and research. The FY2013 property taxes generated by this MIT-owned real estate in Cambridge amount to approximately \$38.6 million, about 12.2% of the City's total tax levy, which contribute to the many programs and services enjoyed by Cambridge residents. And through this investment activity, MIT has been able to improve previously blighted areas around the campus.



Newly renovated oculus atop the Great Dome, as seen from Barker Library

More recently, MIT's real estate activity has been near the core campus. These real estate investment activities provide a platform for educational and research collaborations between MIT and industry, help build and sustain Cambridge's powerful innovation cluster and improve the urban environment for the academic campus and our neighbors.

Far West Campus

These lots could be used for administrative, support, or residential uses, but their unusual shapes, and low density zoning make them less attractive. However, over time the perception of this area could be altered by transportation improvements and the provision of new zoning that better supports transit-oriented development than the existing low-density zoning.

West Campus

The Westgate Lot is a very large site with potential to accommodate a great deal of space. The relocation of the MIT Police to W89 on Vassar Street a few years ago, the use of W98 (600 Memorial Drive) for administrative uses, and the consolidation of many functions of Infor-

mation Services and Technology (IS&T) in W91 and W92 demonstrate that the west end of campus is a viable location for a variety of activities.

The new Childcare Center was under construction during the 2012-2013 reporting period, but was finished and occupied in October 2013. The Grounds Services group was relocated from Massachusetts Avenue and placed in temporary facilities in the West Annex parking lot. A permanent location for this function has not yet been selected. These uses fulfill immediate needs, but are built at a much lower density than their sites can support.

Northwest Buildings

The existing research buildings along Albany Street in the Northwest Sector of MIT's campus comprise 7.2% of MIT's academic and research space. Though these buildings have capacity to support additional users, the location has not been attractive for researchers from the main MIT campus. The common perception among these researchers is that the location is too remote from their colleagues working at MIT's main campus and from other campus amenities. MIT has completed a utilization study of the research buildings in the Northwest Sector and is currently looking at ways to consolidate existing users in order to free up larger areas of available space. Next steps include matching researchers in need of more space with the space available in these buildings. We will also look at ways of strengthening connections to the main campus.

Massachusetts Avenue Corridor

Just to the south of the new Novartis buildings there are parcels on the east side of Massachusetts Avenue, stretching from Albany Street, across the railroad tracks to Vassar Street which are underutilized and could provide a site for a variety of academic uses, in close proximity to the core academic campus. The unique design of the new Novartis building will provide a great opportunity to extend the urban quality of Massachusetts Avenue, eventually closing the gap on the street between Lafayette Square and the main block of MIT's historic campus. The frontage on three streets would allow for ground floor uses that would further contribute to the activation of the street.

Further up Massachusetts Avenue towards Lafayette Square, MIT has an agreement with Forest City to redevelop part of the block between Blanche Street and Landsdowne Street. This agreement, a logical extension of the Institute's 25-year relationship with Forest City at University Park @ MIT, will result in the creation of



Rendering of laboratory building at 300 Massachusetts Avenue

an office/laboratory facility with ground floor retail on Massachusetts Avenue. The office and lab space in the building is fully leased to Millennium Pharmaceuticals, and construction started on the site in the fall of 2013, after the close of the 2013 Town Gown reporting period.

Through these initiatives, MIT hopes to continue the transformation of this section of Massachusetts Avenue into a vibrant and attractive corridor connecting the Institute to Lafayette Square and beyond.

MIT was an active participant in the City's Central Square (C2) Advisory Committee. The Institute looks forward to continuing to work constructively and cooperatively with the City and business and residential neighbors to implement some of the ideas and recommendations that emerged from this process.

Main Street Corridor

The 730-750 Main Street block is an optimal size for an academic or commercial science building. In addition, future redevelopment of this site would allow for the continuation of the emerging retail corridor along Main Street.

The triangular-shaped 600 Main Street block is relatively



610 Main Street under construction

close to the core campus. Its location and scale make it an attractive site for academic uses. The site provides an opportunity to improve street frontage in an area with retail and restaurant space at Tech Square and new retail planned for the future north building on the 610 Main Street site.

North and Main Campus

The Albany Street Garage and the adjacent parking lot could provide an important academic site in proximity to the core campus, but, just as with the West Garage, the burden of accommodating parking relocation would be significant. There are continuing needs to build utility infrastructure to support the campus, most notably Phase II of the Chilled Water plant which will add chillers and cooling towers on the previously constructed span over the railroad tracks. The Institute is also considering locating a substantial addition to MIT's combined heat and power (CHP) facility on the Albany Parking lot or in the location of Building 41.

Planning on the MIT core academic campus is centered on renovation and revitalization. For example, a renovation of half of the program space and building infrastructure upgrades for Building 66 were in planning and design as of the end of the Town-Gown reporting period, and construction is now underway. In addition, a major restoration is now in construction for Building 2 of the original Main Group buildings. The nano-Materials, Structures and Systems (nMaSS) Laboratory (which is being renamed MIT nano) is the most significant redevelopment on campus and is currently in schematic design. A major utility relocation program and demolition of Building 12 are planned for 2014-2015.

East Campus and Kendall Square

Following three years of community engagement with city officials and business and residential neighbors, in-



Design concept for Kendall Square

cluding the Kendall Square (K2) planning process and two rounds of zoning petitions, the City Council approved new zoning for One Broadway and East Campus (PUD-5) in April 2013. The new zoning for PUD-5 retains the current allowed capacity for academic buildings in East Campus while permitting additional capacity for commercial development, including residential, retail, and office/lab uses. The new zoning also embraces the dimensional framework recommended through the K2 process, increases the number of housing units from 120 to as many as 300 (with a mix of low, moderate, market-rate, and micro units), provides for innovation space, sets LEED Gold as a standard for all commercial buildings, and establishes a community fund. In addition, the zoning allows for the creation of a new campus gateway/node as recommended by a faculty Task Force convened by the MIT provost during the zoning petition process. This feature is being developed through a participative conceptual design process as part of the larger planning effort for MIT's East Campus.

The East Campus gateway study is underway. The study intent is to create a long-range development framework to accommodate future academic, commercial, and residential uses and a gateway into the MIT East Campus area. The property in the study area is owned by MIT and utilized by the Institute for both academic and commercial purposes. At a minimum, MIT's goal is to build commercial lab/office buildings with retail in the short term (within approximately 10 years) and academic research buildings in the long term. The commercial development will enhance the vitality of the area, provide much needed amenities, and support the high tech research and development that continues to expand in Kendall Square, making it the most densely populated innovation cluster in the world.

Following the Cambridge rezoning decision in April 2013 and in response to the recommendations of the Faculty Task Force on Community Engagement, Adèle Santos, Dean of the School of Architecture and Planning (SA+P), led a faculty design group through an informal exploration of design typologies for a Kendall Square initiative. Building on the work of the three-year community process, the group focused primarily on developing additional design goals and planning principles that should be achieved in East Campus/ Kendall Gateway design proposal.

Now, MIT has commissioned an urban design study and

assembled a team led by Mack Scogin Merrill Elam Architects that will use the analysis developed by Elkus|Mantfredi Architects and the City of Cambridge during the rezoning effort and the work of the SA+P's faculty design group, in addition to input from the Cambridge and MIT communities, as a foundation for developing its concepts. Several forums will provide opportunities for community participation in the process.

The study will give equal consideration to open space, arrival experience, and connections linking the main campus, MIT Sloan block, and the greater Kendall Square neighborhood. The framework should also consider landscape/ecological systems, pedestrian circulation, vehicular circulation, materials handling, options for dis-

tract energy, and parking. The study is to be completed in early 2014.

As with other parts of the campus, aging or obsolete buildings in the East Campus are subject to consideration for rehabilitation, expansion, or replacement. The first building scheduled for rehabilitation is Building E52, the Sloan Building, occupied by the Department of Economics, Sloan School of Management and the MIT Faculty Club. This project started construction in fall 2013 after the close of the 2013 Town Gown reporting period. In addition to a complete rehabilitation, the project includes an additional floor for expanded meeting and conference facilities supporting the entire MIT community.

F. Transportation

Bicycle Planning and Improvements

MIT is committed to providing amenities to support and encourage students, faculty, and staff to commute to MIT by bicycle. In 2013, MIT created a total of 124 new and replacement bike parking spaces at existing high demand locations and as part of an ongoing program to meet demand for bike parking on campus. All bike racks have been located with a focus on providing secure, accessible, well-lit spaces close to building entrances and placed indoors or in covered areas where possible. MIT plans to continue to provide additional parking spaces and other bicycle infrastructure to meet the needs of our growing and enthusiastic cycling community.

The MIT Bicycle Commuter Benefit Program was created in 2009 and 145 cyclists took advantage of it this year. Full-time employees are eligible to participate in the program, which provides reimbursement of \$20/month (\$240/year) for the purchase, improvements, repair or storage of a bicycle used for commuting to MIT. Additionally, bicycle commuters who need to drive to campus a few times per month have the option of purchasing an occasional parking permit.

MIT released an updated version of the annual "Getting around MIT by Bicycle" map and information pamphlet (<http://bit.ly/MITBike>). The map provides information on bike lanes, bike parking areas, and bike repair stations. The brochure also educates the community on bike safety,



etiquette, security, and communicates the need to “share the road” with pedestrians, vehicles, and other roadway users.

MIT is proud to sponsor two Hubway stations on campus, one located near 77 Massachusetts Avenue and the other on Vassar Street near the Stata Center. These stations are some of the busiest in Cambridge, and MIT worked with the City of Cambridge and Alta to expand each of them by eight docks in August of 2013. There are now 52 Hubway docks at MIT-sponsored stations. Hubway has proven very successful and continues to break ridership records, with the one millionth ride taken in July 2013. The latest news is the participation of the MIT Hubway stations in the Cambridge pilot program extending Hubway services through the winter.

In addition to sponsoring two Hubway stations, MIT subsidizes annual Hubway memberships for all MIT students, staff, and faculty, offering memberships at \$25/year (regularly \$85/year). The subsidy has been very well received, and participation by the MIT community has increased exponentially with 3,000 MIT Hubway members as of October 2013, up from 628 members a year ago.

Pedestrian Crossing of Grand Junction Railroad Tracks

MIT completed construction of the grade-level pedestrian crossing of the Grand Junction railroad tracks and opened the pathways from the end of Pacific Street to Vassar Street on January 1, 2013. The necessary permissions and construction of this safety project took nine years to accomplish.



Pedestrian crossing of Grand Junction railroad tracks

Urban Ring

The Urban Ring is no longer an active transportation project. MIT intends to continue working with the City of Cambridge and others to see what progress can be made with existing resources and projects in preparing the Urban Ring to move forward when resources become more available. One such proposal has been made by the City for MassDOT to use Accelerated Bridge Program or other funds to purchase and operate a bus line that would cross the northern spokes of the MBTA transit system. The bus line would run from Sullivan Square (Orange Line) to Lechmere (Green Line) to Kendall Square (Red Line). This would divert some automobile drivers from the roadways congested because of bridge construction and keep other transit riders from having to come into the downtown core and take crowded Red and Green line trains to their Cambridge destinations.



One reason that the Urban Ring remains of interest to MIT is the increase of MIT administrative uses and the potential for additional academic and residential uses on the far west end of the campus. Development in this area would improve the visibility of the Fort Washington Park and create a node of transit-supported buildings that would help transform this area of small-scale service and residential buildings, obsolete industrial buildings, service yards, and parking lots. The new transit node suggests an opportunity to revise the existing low density zoning to a density more appropriate to transit-oriented development (TOD).

Grand Junction Community Path

The City of Cambridge has been advocating for the development of a multi-modal path along the Grand Junction corridor for more than a decade. The proposed multi-use trail would be part of the network including the existing Minuteman Path and the Somerville Community Path. In Cambridge, the plans for the path include use of MIT property along the Grand Junction corridor. The path is proposed to run in the loading, construction and service corridor behind MIT's buildings for approximately 2,700 feet between Main Street and 230 Albany Street. The area west of Massachusetts Avenue is particularly intensively served by trucks utilizing access in the existing corridor.

MIT has agreed to study the feasibility of having the multi-use path on its property. The study will be completed by the fall of 2014. The study will be an opportunity to conduct a comprehensive assessment of all the issues involved in the Community Path.

Multiple reports have been generated and studies conducted regarding the Grand Junction Community Path since 2000. Originating as a City of Cambridge Bicycle Committee concept plan, the Rail With Trail (RWT) plan along the Grand Junction was incorporated into the Green Ribbon Open Space Committee Report (2000) and the East Cambridge Planning Study (2001) and was the subject to a feasibility study primarily conducted 2003-2004 (published 2006). MIT continues to maintain the Vassar Street cycle track which runs parallel to the proposed Community Path.

Longfellow Bridge

The long-planned rehabilitation of the Longfellow Bridge began in summer 2013. When complete, this important project will provide benefits to all types of travelers – motorists, bicycles and pedestrians for decades. Because of its scale and scope, the construction will create disruption to everyday travel for MIT and its neighbors in Cambridge. Among other impacts are 25 weekends of Red Line shutdown and a three to four year detour of all Cambridge-bound motorists through Leverett Circle and over the Craigie Bridge or to Massachusetts Avenue. In the initial months of the project, overall vehicle volumes across the bridge are down, bicycle and pedestrian accommodations are adequate, and the detour routes are functioning reasonably well.

MIT will continue to work closely with the City of Cambridge, the Kendall Square Association, and other stakeholders to engage MassDOT and the construction team to make sure there is appropriate mitigation maintained and implemented for this very large project.

G. Sustainability, Energy, Efficiency, and Design

Campus energy and sustainability activities are directed and implemented by many organizational units across campus, and advised by a rich reservoir of faculty, students, and staff. The Campus Energy Task Force has provided a forum to coordinate this broad community of departments and people – department heads, research scientists, faculty, department staff, custodians, administrative assistants, undergraduate and graduate students, et al. – to advance progress towards sustainability. MIT's campus programs have provided an opportunity to impact campus energy use and foster an awareness of energy and sustainability issues across campus and allow many people to engage with, learn from, and enrich our activities.

FY2013 Highlights:

- To date, MIT has achieved campus energy cost savings totaling over \$5.6 million annually. Of the total 226,665 million BTUs (MMBTU) saved since 2007, 35,627 MMBTU (and \$1.1 million) were saved in FY2013.
- Successful completion of the third and final year of the first phase for MIT Efficiency Forward – the industry-leading energy conservation and efficiency program – achieving the program's goal to save 34 million kilowatt hours (kWh) annually, expecting savings of \$50 million over the lifetime of projects. In calendar year 2012, MIT surpassed its energy

savings goal of 12 million kWh contributing to a total annual savings of 34 million kWh, which is approximately 15% of MIT's benchmark annual electricity use.

- In June, MIT and NSTAR signed a second agreement to renew the Efficiency Forward program through 2015 and are designing a new portfolio of measures that have an ambitious goal of saving an additional 21 million kWh annually. For this second phase, Efficiency Forward will now also include thermal savings from the reduction of natural gas use on campus, with a goal to save 150,000 therms of natural gas annually over the next three years.
- In what is considered to be the first agreement of its kind, the City of Cambridge, MIT, and Harvard University, developed a compact to work collaboratively to address issues related to climate change on a local basis. The “Cambridge Compact for a Sustainable Future” lays out a framework for the signatories to work in a more coordinated and robust fashion to tackle local sustainability challenges.
- MIT’s pilot building-occupant engagement program focused on building Green Teams is being implemented in the Koch Institute for Integrative Cancer Research. Efforts this year included waste and recycling assessments and action plan development, delivery of an all Koch staff survey to establish baseline data on awareness of sustainability issues, outreach and education events, and a focus on developing a food waste composting program.
- Task Force members collaborated closely with several departmental courses to examine key issues in campus sustainability including storm water management, community-based energy efficiency strategies, and building technologies for energy efficiency.
- MIT has made strong progress towards the US Department of Energy’s new Global Superior Energy Performance Partnership piloting the program’s new building energy management certification

**The
“Cambridge
Compact for a
Sustainable Future”
lays out a framework for
the signatories to work in
a more coordinated and
robust fashion to tackle
local sustainability
challenges.**

program, and is nearing completion of MIT’s ISO 50001 energy management documentation. MIT’s participation in DOE’s Commercial Building Partnership deployed national laboratory technical assistance and implemented advanced energy efficiency strategies in building 32 and W91.

- In November 2012, the Massachusetts Green High Performance Computing Center was completed and demonstrates many energy efficiency and sustainability strategies, including efficient cooling design, distribution and control, LEED design, renewable energy sources, and brown site redevelopment. In October 2013, the building was awarded LEED Platinum — the highest rating level possible — and the first university research data center in the country to achieve LEED Platinum.
- In June, the Office of Executive Vice President and Treasurer (EVPT) created MIT’s first Office of Sustainability. A new Director of Sustainability was appointed in August. The Office will be responsible for the integration of Institute-wide sustainability principals and will engage the campus as a living and learning laboratory.



Harvard President Drew Faust, MIT President Rafael Reif, Mayor Henrietta Davis, and City Manager Robert Healy signing the Cambridge Compact for a Sustainable Future

III. List of Projects

A. Completed in Reporting Period

640 Memorial Drive Renovation

This property consists of a five-story historically significant building containing approximately 206,000 square feet of office and laboratory space. MIT completed the renovation of the base building systems for a first class laboratory facility in 2011 and has since leased the west half of the building to sanofi-aventis, U.S. Inc. and three floors of the east end of the building to Boston Biomedical. Both sanofi-aventis and Boston Biomedical are occupying their respective research spaces.

Buildings E17 and E18

This renovation project renewed and repurposed E17 and E18, vacated by the Koch Institute for Integrative Cancer Research. The renovation provided needed expansion space for Chemical Engineering and office swing space to enable future renovation projects on campus. Construction was completed early this year.

Building E25

This project included the complete renovation of the basement of E25 to update and improve efficiency of the existing laboratory support facilities. The scope included replacing the facility's air handler, which was at the end of its useful life. The project was completed at the end of 2012.

130 Brookline Street and 17 Tudor Street

130 Brookline Street is a two-story, 45,000 square foot concrete frame industrial structure built in the 1920s. 17 Tudor Street is an adjacent two-story, 13,000 square foot



17 Tudor Street after restoration



The new David H. Koch Child Care Center

building. These two buildings have been rehabilitated for laboratory and office uses, respectively, with ancillary parking between them. The Institute started renovating the buildings to improve their physical appearance and prevent further deterioration of the structures. Base building work was completed in summer 2013. MIT has leased 75% of 130 Brookline to 24M Technologies, an entrepreneurial company that is using battery technology developed partly at MIT, and all of 17 Tudor Street to Wistia, a technology company.

David H. Koch Child Care Center

MIT built the new David H. Koch Child Care Center at 219 Vassar Street in response to high demand among faculty, staff, and students for convenient, high quality childcare. The new facility is vital to MIT recruitment and provides another reason for talented individuals to build their careers at MIT.

The new center accommodates 126 infants, toddlers and preschoolers — continuing to grow MIT's in-house childcare capacity which has increased nearly fivefold over the past decade. A welcome addition to the four existing child care facilities on MIT's Cambridge campus and at Lincoln Laboratories, the new two-story building houses 11 classrooms separating children by age. Its outdoor facilities include a variety of playgrounds, sand pits, climbing structures, and gardens.

Construction was completed in the summer of 2013 and the children arrived at the beginning of October 2013.

B. In Construction

610 Main Street

Located on the site of a former surface parking lot, this new development consists of 418,000 square feet in two office and/or laboratory buildings above a below-grade parking garage. MIT has signed a lease with Pfizer Inc. to occupy the south building. Construction of the south building and the underground garage started on the site in fall 2011 and is expected to be completed at the end of 2013.

700 Main Street

MIT executed leases with Lab|Central, Pfizer Inc., and Novartis in this building in the past year. Lab|Central, a laboratory incubator company, leases 30,000 square feet; Pfizer occupies approximately 75,000 square feet of space on a temporary basis during the construction of its new facility at 610 Main Street South; and Novartis leases the remaining 100,000 square feet in the building.

Building 2

There is a pressing need to continue renewing the Main Group buildings for state-of-the-art education and research. In furtherance of this goal, renovations have begun in Building 2, home to MIT's Department of Mathematics and portions of MIT's Department of Chemistry. The chemistry portion of the Building 2 project started construction early in 2013. The project will be completed using sustainable design and construction initiatives with the goal of achieving a minimum rating of LEED Silver.



Windows installed as part of Building 2 renovation

By Others

181 Massachusetts Avenue (Novartis)

Novartis Institutes for BioMedical Research leased a four-acre parcel of MIT land at 181 Massachusetts Avenue (corner of Albany Street) to augment the Novartis Cambridge Campus, where its global research headquarters are located. By expanding in proximity to MIT and other research institutions, Novartis will create an ideal environment for interdisciplinary collaboration, open communication, and exchange of knowledge.

The Novartis Cambridge Campus serves as an important connection between Kendall and Central Squares. Its expansion will add vibrancy to the area with ample green space, pedestrian connections, and street-level retail space.

The project encompasses the construction of two new buildings with 550,000 square feet of laboratory, office, and retail space, and the renovation of the parcel's remaining existing structure. Novartis will seek LEED Gold certification for the new buildings. Per MIT's lease requirements, the buildings Novartis is constructing will include active ground floor uses on Massachusetts Avenue, helping to improve this important commercial corridor. Construction is ongoing and is scheduled for completion in 2015.



Design concept for 181 Massachusetts Avenue (Novartis)

C. In Planning & Design

E52 - Sloan and Economics Department

Since E52 was partially vacated by MIT Sloan School of Management, MIT now has an opportunity to renovate the building to accommodate a conference center, the Department of Economics, and other administrative units of the Sloan School. Building E52 began construction in September 2013, just beyond the reporting period for this year, and is expected to be completed by the end of 2015. The building is planned for LEED certification at the Gold level.

Music and Theater Arts

The Music and Theater Arts (MTA) section at MIT has grown and is in need of teaching and performance spaces for its academic program. One option that has been under consideration for Music and Theater Arts is a major renovation of Walker Memorial. Investigation of how best to accommodate the programmatic needs of Music and Theater Art is continuing.

Earth, Atmospheric, and Planetary Sciences

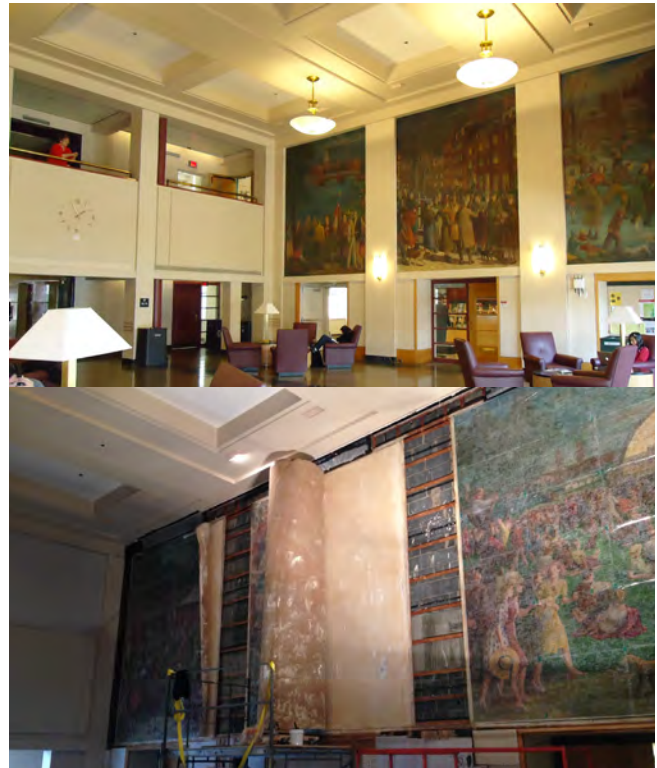
MIT is planning to enhance its growing set of environmental research activities and will first focus on the needs of the Earth, Atmospheric and Planetary Sciences Department. MIT is evaluating the space needs of the Earth, Atmospheric and Planetary Sciences Department to support evolving teaching and research needs for environmental research at MIT. Options for renovating Building 54 are under consideration.

nano-Materials, Structures and Systems (nMaSS) Laboratory (MIT nano)

This new building, to be located on the interior of MIT's main campus block, will support materials research at the nanoscale and will accommodate top programmatic priorities expressed by the deans of the School of Science and the School of Engineering. A major utility relocation program and demolition of Building 12 are recommended for 2014. The nMaSS building is currently in schematic design. Construction is projected to begin in 2015 and be completed by 2018.

345 Vassar Street

MIT completed interior demolition of the obsolete offices and laboratories of this two-story, 32,000 square foot building and is exploring alternatives to position the building for multi-tenant office, laboratory, or institutional use.



Murals in E52 are removed for renovation

Building 66 – Chemical Engineering

Designed by I.M. Pei and built in 1976, Building 66 houses a majority of MIT's Department of Chemical Engineering faculty in 134,000 gross square feet. The Building 66 renovation project will make improvements to nearly 50% of the space in the building and provide upgrades to select components of the building infrastructure that are aimed to support the research and space needs of the Chemical Engineering Department over the next 15 to 20 years. Upgrades are planned for air handlers and other parts of the HVAC system, a new fire alarm system and selected upgrades to the sprinkler, electrical, plumbing, steam, wastewater systems, building controls and building envelope.



Researchers in Materials Sciences will benefit from the new nMaSS Laboratory

By Others

300 Massachusetts Avenue

MIT has an agreement with longtime development partner Forest City on a collaboration to redevelop a portion of Massachusetts Avenue – part of the 300 Mass Ave block adjacent to MIT’s Random Hall dormitory. This project involves replacing existing buildings that are run down and underutilized with a new mixed-use building designed to bring significant new retail vitality to the area and provide research space to enable further growth of the Cambridge Innovation Cluster.

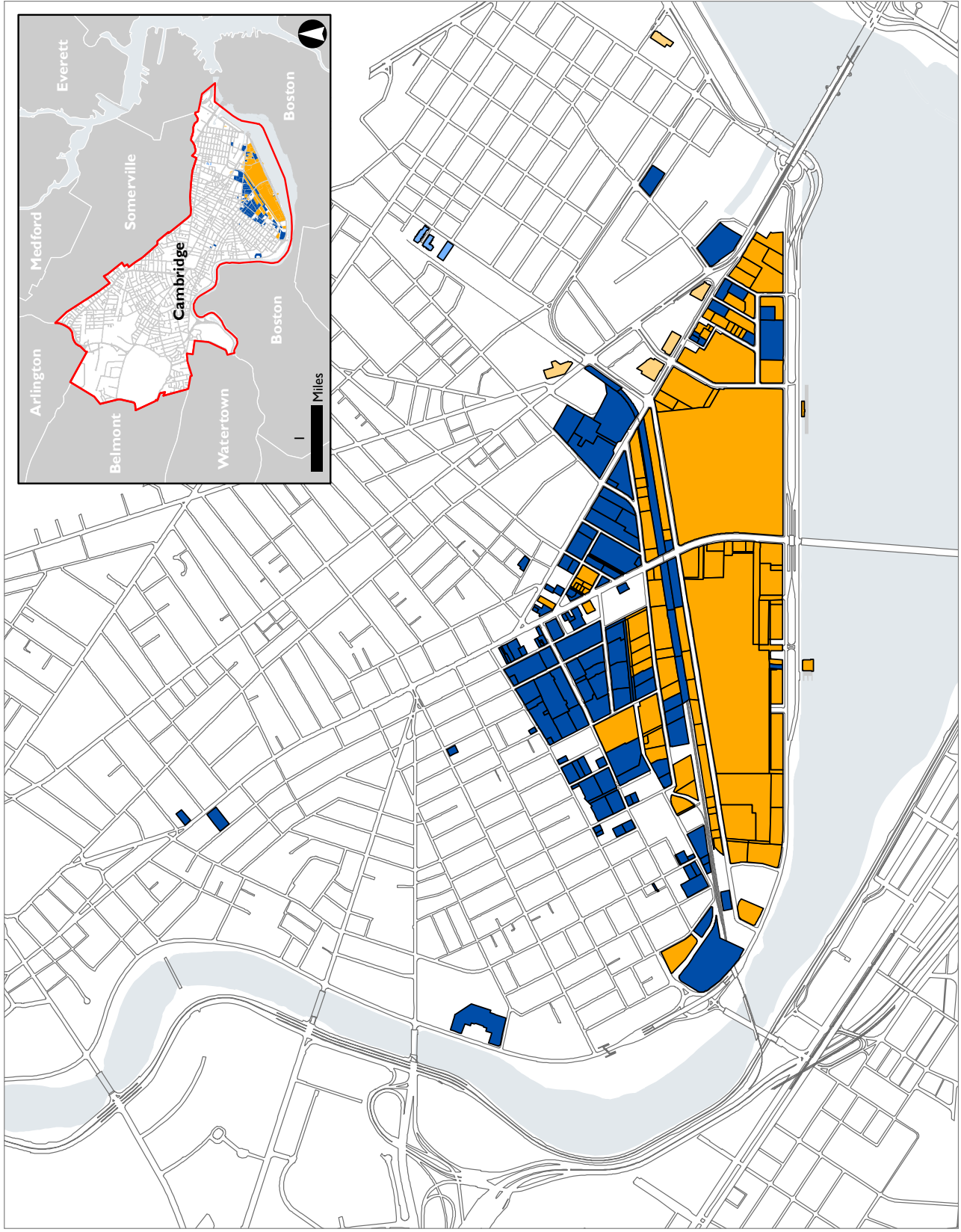
Now fully permitted, 300 Mass Ave is moving into the construction phase, with completion and occupancy anticipated in early 2016. The research and office portions of the building – all but 15,000 square feet that has been designated for retail uses – will be occupied by Millennium/Takeda, a life science company that is currently in



Rendering of laboratory building at 300 Massachusetts Avenue University Park at MIT and will be expanding its footprint to support a more extensive research program. Retail shops and restaurants will occupy nearly the entire frontage of the building along Massachusetts Avenue, and will be identified when construction of the project is further along.

IV. Mapping Requirements

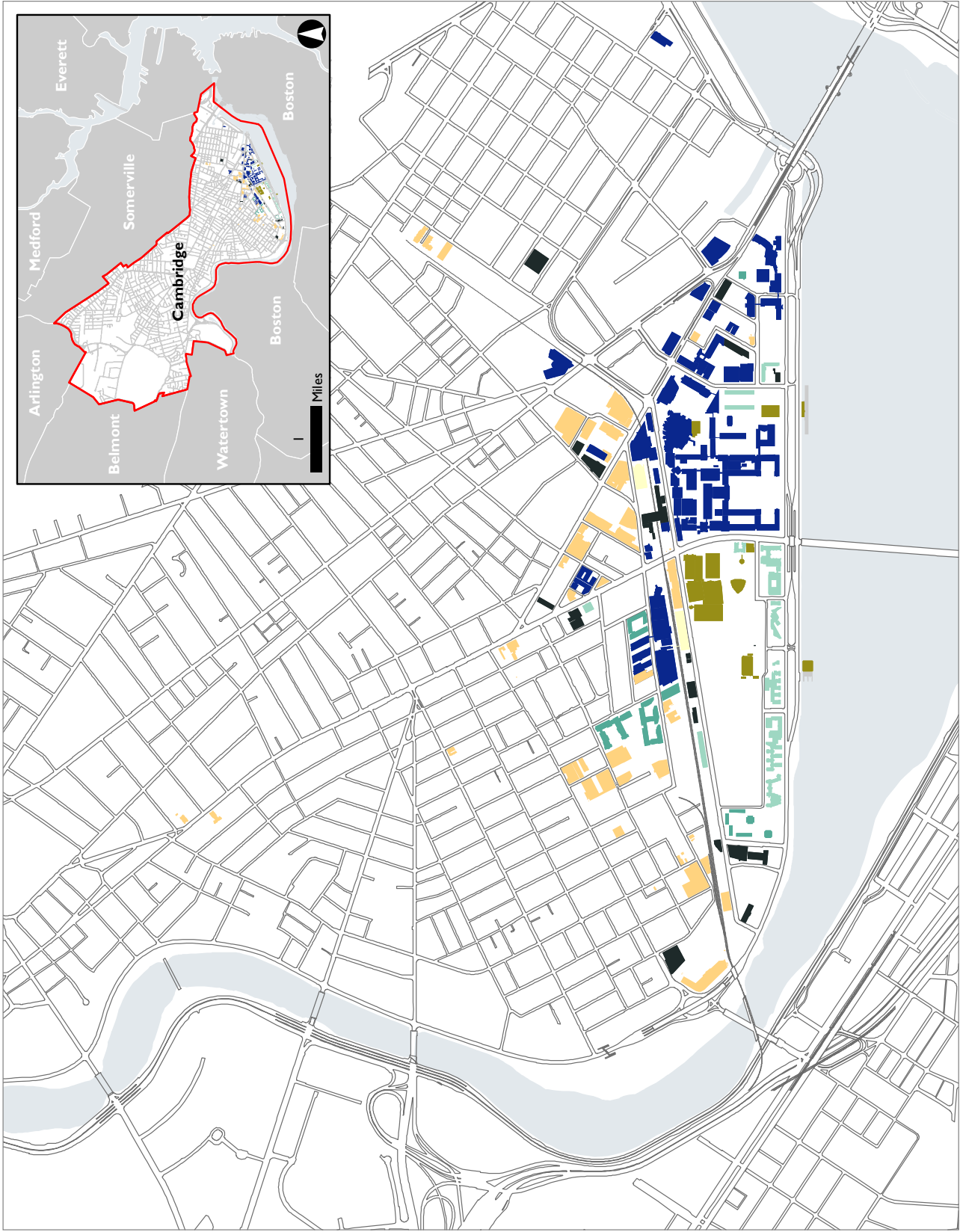
- Map 1: MIT Property in Cambridge**
- Map 1a: MIT Buildings by Use**
- Map 2: MIT Projects**
- Map 3: Future Development Opportunities**
- Map 4: MIT Shuttle Routes**
- Map 5: MIT LEED Certified Buildings**
- Map 6: MIT Energy Efficiency Upgrade Projects**
- Map 7: Buildings with Funded Capital Renewal Projects 2012-2013**



Map I: MIT Property in Cambridge
 December 2013 (Data as of June 30, 2013)

■ Academic Plant
■ Academic Leased
■ Investment Property
■ Investment Property - Condominium Only

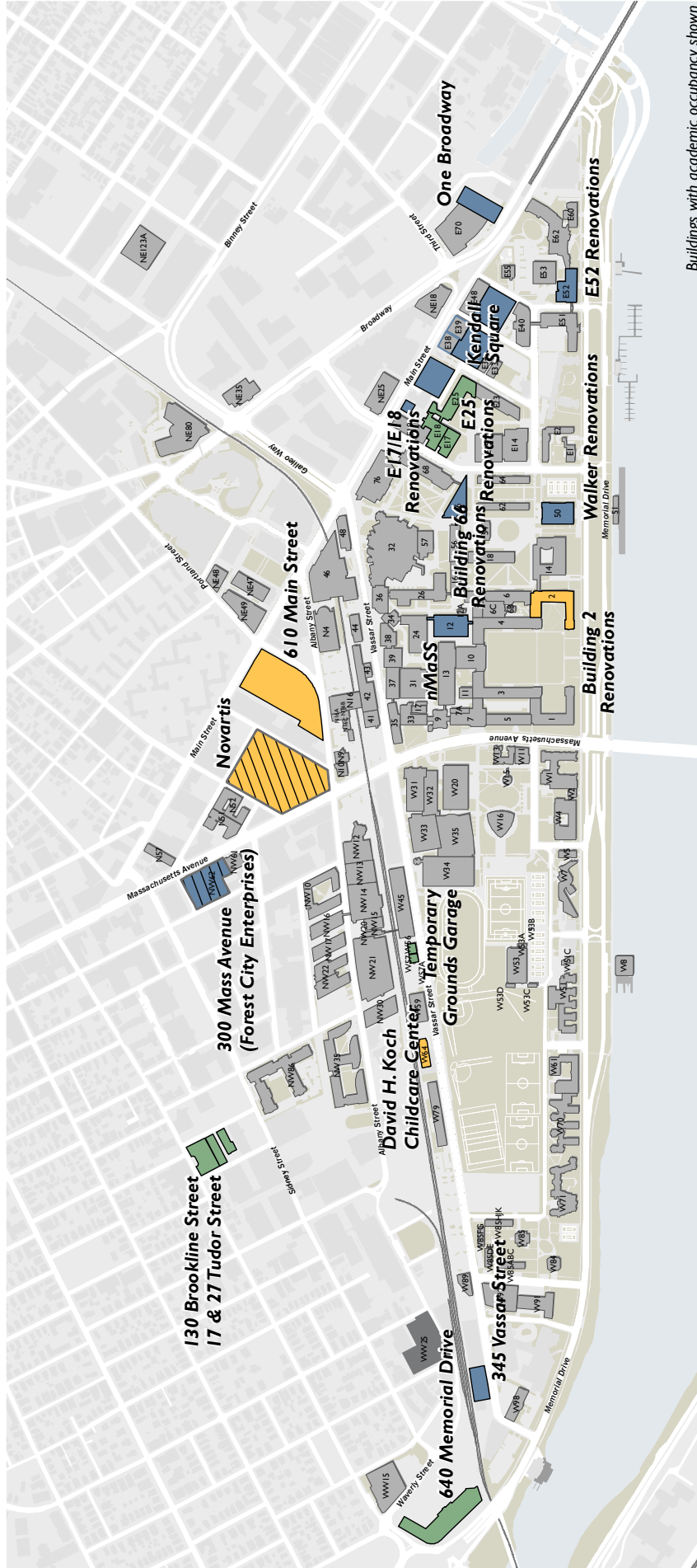
1,000 Feet



Map 1a: MIT Buildings and Occupied Spaces by Use
 December 2013 (Data as of June 30, 2013)

1,000 Feet

- Academic Research
- Athletics & Student Life
- Residential - Graduate
- Residential - Undergraduate
- Service & Administration
- Parking Garage
- Investment Property
- Investment Property



Map 2: MIT Major Projects
 December 2013 (Data as of June 30, 2013)

Buildings with academic occupancy shown
 1,000 Feet

- Planning/Design
- Construction
- Completed
- Development By Others

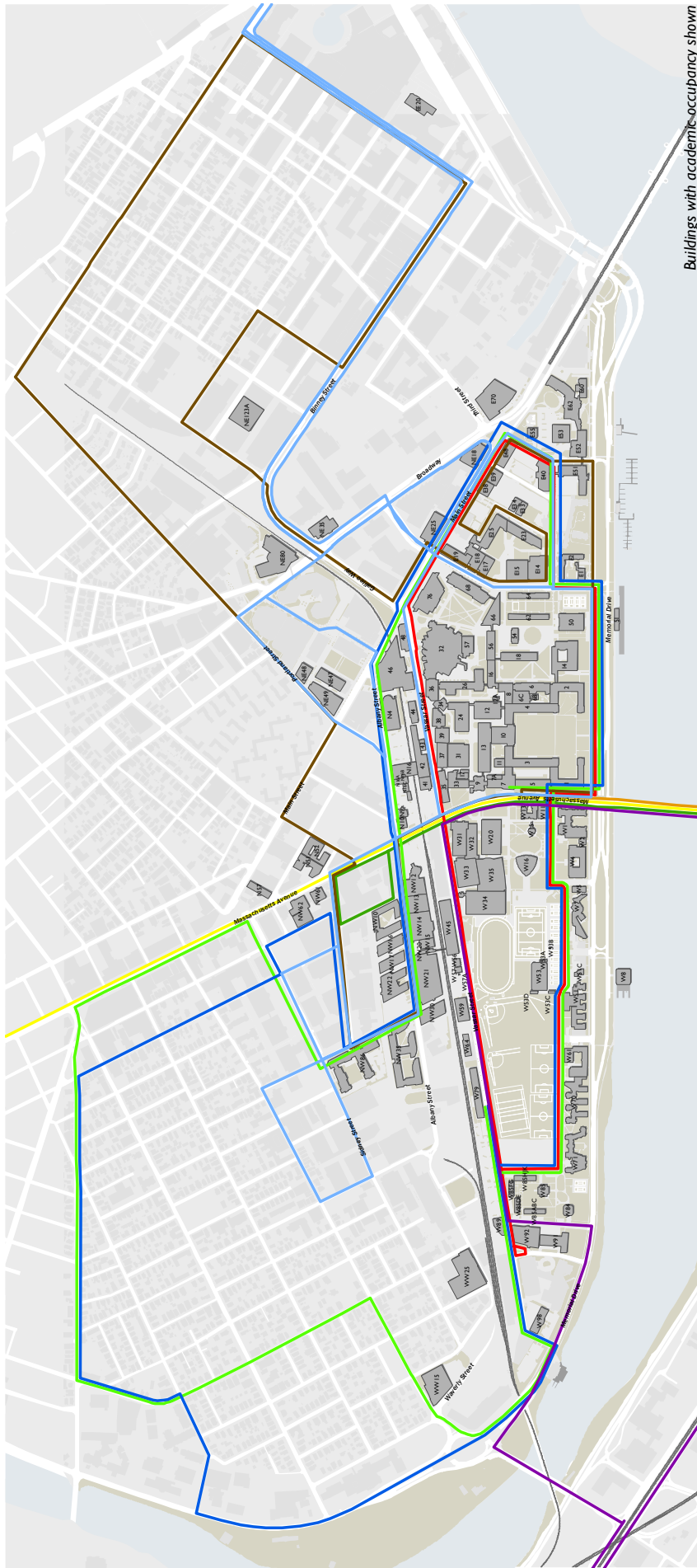


Buildings with academic occupancy shown

1,000

Feet

Map 3: Future Development Opportunities
 December 2013 (Data as of June 30, 2013)



Map 4: MIT Shuttle Routes
 December 2013 (Data as of June 30, 2013)

Buildings with academic occupancy shown
 1,500 Feet



Map 5: MIT LEED Certified Buildings
 December 2013 (Data as of June 30, 2013)



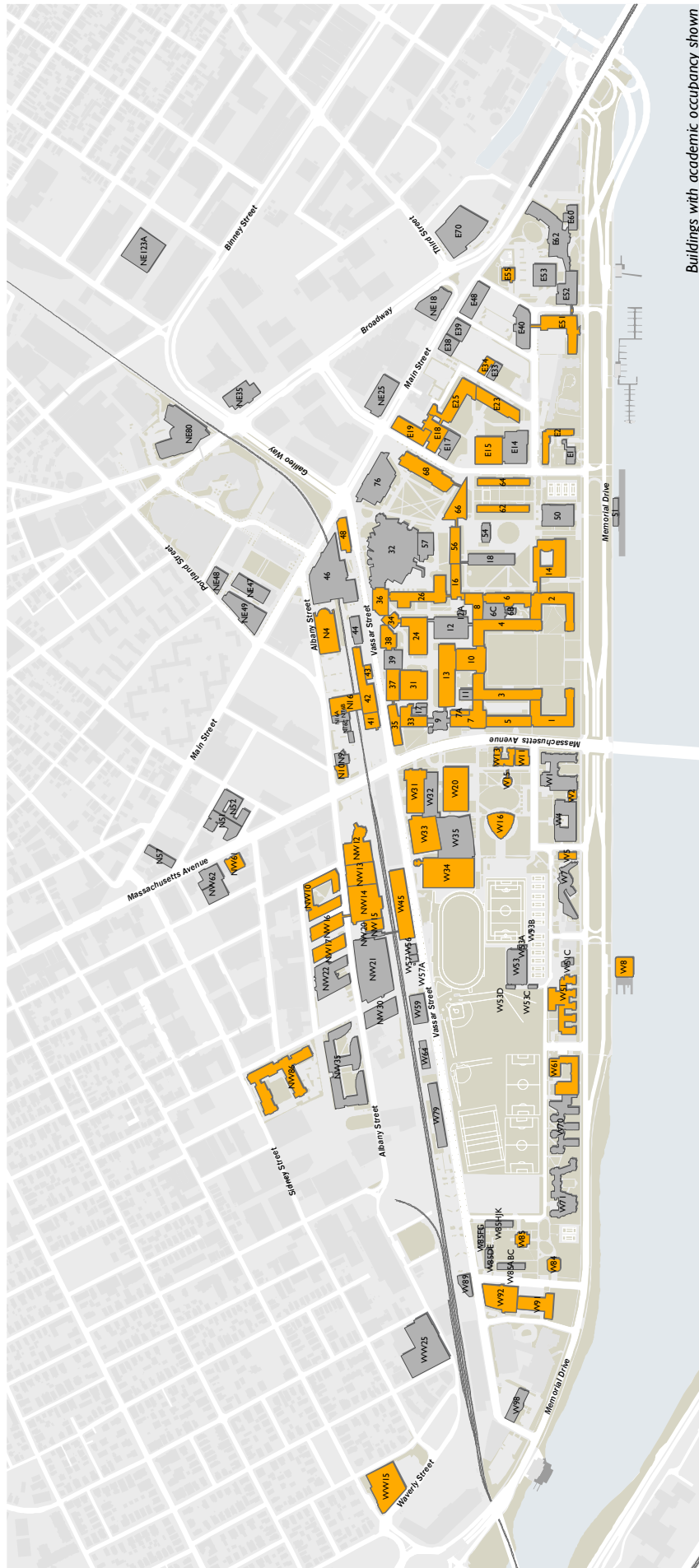
Map 6: MIT Energy Efficiency Upgrade Projects
 December 2013 (Data as of June 30, 2013)

Buildings with Energy Efficiency Upgrade Projects

- Completed in 2012/2013
- In Construction or Planned for 2013/2014

Buildings with academic occupancy shown

1,000 Feet



Map 7: Buildings with Funded Capital Renewal Projects 2012-2013
 December 2013 (Data as of June 30, 2013)

V. Transportation Demand Management

A. Commuting Mode of Choice

MIT conducts a commuting survey every two years. The data below was collected in the fall of each corresponding year. The chart below summarizes the responses to the survey question, “How did you commute to campus each day last week?” Data reflects average Monday-Friday responses and excludes students living on-campus and people reporting that they did not come to campus.

Commuting Mode	2004	2006	2008	2010	2012
Drove alone entire way	26%	26%	21%	20%	22%
Took public transportation	36%	37%	39%	42%	41%
Carpooled	6%	6%	7%	7%	6%
Bicycled	12%	12%	13%	14%	15%
Walked	15%	14%	16%	15%	13%
Other	4%	5%	4%	3%	3%

B. Point of Origin for Commuter Trips to Cambridge

Home Location	Number of People working on the MIT Main Campus	Percentage
Cambridge	2359	23.3%
Boston	1313	13.0%
Somerville	738	7.3%
Arlington	369	3.6%
Brookline	311	3.1%
Newton	276	2.7%
Lexington	248	2.4%
Medford	239	2.4%
Belmont	234	2.3%
Watertown	165	1.6%
Quincy	144	1.4%
Malden	127	1.3%
Waltham	102	1.0%
Woburn	76	0.8%
Acton	64	0.6%
North Of Boston	631	6.2%
South Of Boston	65	0.6%
West of Boston	127	1.3%

B. Point of Origin for Commuter Trips to Cambridge (continued)

Home Location	Number of People working on the MIT Main Campus	Percentage
Outside 128	1524	15.0%
Outside 495	321	3.2%
Out of State - Connecticut	16	0.2%
Out of State - Maine	21	0.2%
Out of State - New Hampshire	123	1.2%
Out of State - Rhode Island	49	0.5%
Out of State - Vermont	3	0.0%
Outside New England	475	4.7%
Unknown	7	0.1%
Grand Total	10127	100.0%

C. TDM Strategy Updates

Electric Vehicle Charging Stations

MIT in partnership with the City of Cambridge and was awarded two Coulomb Technologies, Inc. electric vehicle charging station(s) under the ChargePoint America™ Program. The Program was funded in part under the terms of Grant number DE-EE0003391 from the United States Department of Energy as part of the American Reinvestment and Recovery Act.

One charging station was installed in the building 46 parking lot on Vassar Street, which is located in the center of campus. A second station was installed at building WW15 on Brookline Street. Under the terms of the grant the stations are accessible to the public.

MIT also received a charging station with the purchase of an Electric Ford Transit van which was installed in the Stata Garage Loading Dock. Future plans include installation of additional stations on campus as needed.

MBTA Pass Subsidy

In response to the recent MBTA rate increase, MIT elected to maintain a 50% subsidy on all MBTA passes for students and staff. There are currently 5,100 students and staff taking advantage of our Subsidized Pass Program.

Hubway Bike Share

In cooperation with the City of Cambridge, MIT sponsored two Hubway stations on campus — “MIT Mass Ave.” located on Massachusetts Avenue and Amherst Street in front of Building W11, and “MIT Stata Center” located between the Stata Center and the Koch Institute on Vassar Street. MIT has signed on as a Hubway Corporate Member, and is offering a subsidized annual membership and discounted hourly rates for members of the MIT Community.

There are currently over 500 MIT Community Hubway members.

VI. Institution Specific Information Requests

1. Review discussions underway evaluating the need for and feasibility of providing additional housing for graduate students, visiting students, and post-doctoral fellows. Provide information on the scope of the need for housing and the effects of housing costs on the graduate student finances. Describe any means through which MIT now assists these populations in meeting their housing needs, including but not limited to monetary assistance, apartment search services, and provision of housing. What proportions of these populations receive such assistance? Discuss additional possible options that address the housing needs of these populations.

These questions will be addressed by the forthcoming Graduate Student Housing report.

2. Review the expansion in enrollment of graduate students, visiting students, and post-doctoral fellows since 2008. Discuss the reasons for this increase in enrollment and discuss the prospects for further changes in enrollment in coming years.

See Future Plans Narrative, Section C “MIT Students, Faculty, and Staff”

3. Provide an update on long term academic and non-academic planning for the main campus, with a particular focus on all potential locations for academic uses and plans for green space and edges along Massachusetts Avenue, particularly near the railroad crossing, and edges adjacent to Area 4.

See Future Plans Narrative, Section E “Main Street Corridor,” “North and Main Campus,” and “Massachusetts Avenue Corridor”

4. Provide an update on MIT’s Kendall Square planning efforts, including enhanced connections between the main building cluster and Kendall Square.

See Future Plans Narrative, Section E “East Campus and Kendall Square”

5. Include in your discussion a review of the extent to which open spaces on the MIT campus are permeable to the public. Provide information on open spaces on your campus that are open to public use. Indicate the times when these spaces are accessible to the public and the range of activities that are permitted.

MIT maintains an open campus. Gardens, walkways, plazas and larger green spaces, like North Court and Killian Court, are fully permeable and open for public enjoyment. There are no specific time limits for access, although many buildings are secured in the evening. The open spaces are sometimes reserved for special short-term exclusive use by MIT, such as during Commencement, but are otherwise open to the public for the same kind of passive recreation and other uses that are typical of the MIT community. Reservation requests for these spaces and athletic facilities (courts, fields, swimming pools, etc.) for short-term use by neighbors are welcome, although honoring such requests is subject to availability. These inquiries are managed by the Office of Government and Community Relations.

6. What strategy does MIT follow in selecting tenants for retail sites? How is retail used to enhance the urban experience? Provide information on MIT’s plans for ground floor retail along Main Street and in both Kendall Square and Central Square.

Working closely with experienced retail specialists who have intimate knowledge of the local Cambridge market, MIT prefers to select tenants for retail spaces based on the expressed needs of members of the MIT and Cambridge communities. We focus primarily on small operators that help enhance the urban experience with a diversity of uses. This strategy requires frequent re-evaluation of the tenant mix as small operators develop over time. Currently, nearly all of MIT’s retail space is fully leased. MIT plans to continue including ground floor retail space and other active uses in new developments along the Main Street and Massachusetts Avenue corridors.

7. Discuss planning for bicycle facilities on campus, including Hubway stations.

See Future Plans Narrative, Section F “Transportation”

8. Provide an update on discussions about development of a multi-use path along the Grand Junction railroad right-of-way.

See Future Plans Narrative, Section F “Transportation”

9. Report on planning for the “Far West” sector of campus, such as the area adjacent to Fort Washington Park.

See Future Plans Narrative, Section E “Far West Campus”

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Great Dome Oculus: Courtesy Shawmut Design and Construction

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300 Massachusetts Avenue: Forest City and their design team Elkus-Manfredi and Kling Stubbins

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