

Public Notice

The Boston Redevelopment Authority ("BRA"), pursuant to Article 80D-2 of the Boston Zoning Code, hereby gives notice that an Institutional Master Plan ("IMP" or "BWH 2010 IMP") was received by the BRA on October 22, 2009 from Brigham and Women's Hospital, Inc. ("BWH") and Partners HealthCare System Inc. (the "Proponent").

The IMP will result in a new IMP for a term of ten years (2010 to 2020), and will incorporate the elements of the existing BWH IMP as approved in February 2005 (2005 IMP), while providing for BWH's future programmatic and facilities needs into the future. This BWH 2010 IMP includes the Brigham and Women's Building and Binney Street Building (components of the Massachusetts Mental Health Center Redevelopment Project ("MMHC Project"), the construction of the Brigham Green Enhancement and Parking (previously-approved by virtue of the 2005 IMP), and Campus Additions and Upgrades. These projects shall be referred to as the IMP Projects.

During the term of the BWH 2010 IMP, BWH and Partners HealthCare System Inc. (PHS), in association with the Roxbury Tenants of Harvard Association, Inc. (RTH), are proposing to redevelop three parcels with mixed uses in four buildings. Only two of the buildings, the Binney Street Building and the Brigham and Women's Building, are included in the BWH 2010 IMP. The Brigham and Women's Building is proposed to be constructed on land which it will lease on a long-term basis from the Commonwealth of Massachusetts acting by and through its Division of Capital Asset Management (DCAM). The Binney Street Building will be constructed on a site which is already in the BWH IMP Overlay District.

The Binney Street Building, which will be developed by BWH, comprises 56,540 sf of clinical and office space which will be utilized by BWH for outpatient uses in the long-term. DMH will occupy the Binney Street Building on an interim basis, until the DMH-designated space within the Brigham and Women's Building is available. The Brigham and Women's Building which will be developed, managed and controlled by BWH will contain approximately 358,670 sf of space for research and development, clinical and office uses by BWH and DMH. The Brigham and Women's Building will also include bridge and tunnel connections across Fenwood Road to the Shapiro Cardiovascular Center.

The Proponent is seeking Scoping Determinations for its Institutional Master Plan pursuant to Article 80D-5.3 of the Code. The IMP may be viewed at the following locations: Office of the Secretary of the BRA, Boston City Hall, One City Hall Square, Boston, MA 02201 (Monday through Friday, 9am to 5pm); Boston Public Library, Copley Branch, 700 Boylston Street, Boston, MA 02116, Government Documents Department (Monday through Thursday, 9am to 9pm; Friday and Saturday, 9am to 5pm); and, Boston Public Library, Parker Hill Branch, 1497 Tremont Street, Boston, MA 02120 (Monday through Wednesday 10am to 6pm, Thursday 12pm to 8pm, Friday 9am to 5pm) except legal holidays. Public comments on the IMP should be transmitted to Ms. Sonal Gandhi, BRA, at the address stated above or at sonal.gandhi.bra@cityofboston.gov within 60 days of the date of this notice.

Boston Redevelopment Authority
Theresa Donovan, Assistant Secretary

2010 INSTITUTIONAL MASTER PLAN THE BRIGHAM AND WOMEN'S HOSPITAL, INC.



Submitted to:
BOSTON REDEVELOPMENT AUTHORITY
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Boston, MA 02201

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With:
The Architectural Team
Linea 5
Ropes & Gray LLP
VHB, Inc.

OCTOBER 2009

2010 INSTITUTIONAL MASTER PLAN

THE BRIGHAM AND WOMEN'S HOSPITAL, INC.

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October 2009

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Section 1.0

Introduction/Mission and Objectives

1.0 INTRODUCTION / MISSION AND OBJECTIVES

1.1 Introduction / Project Background

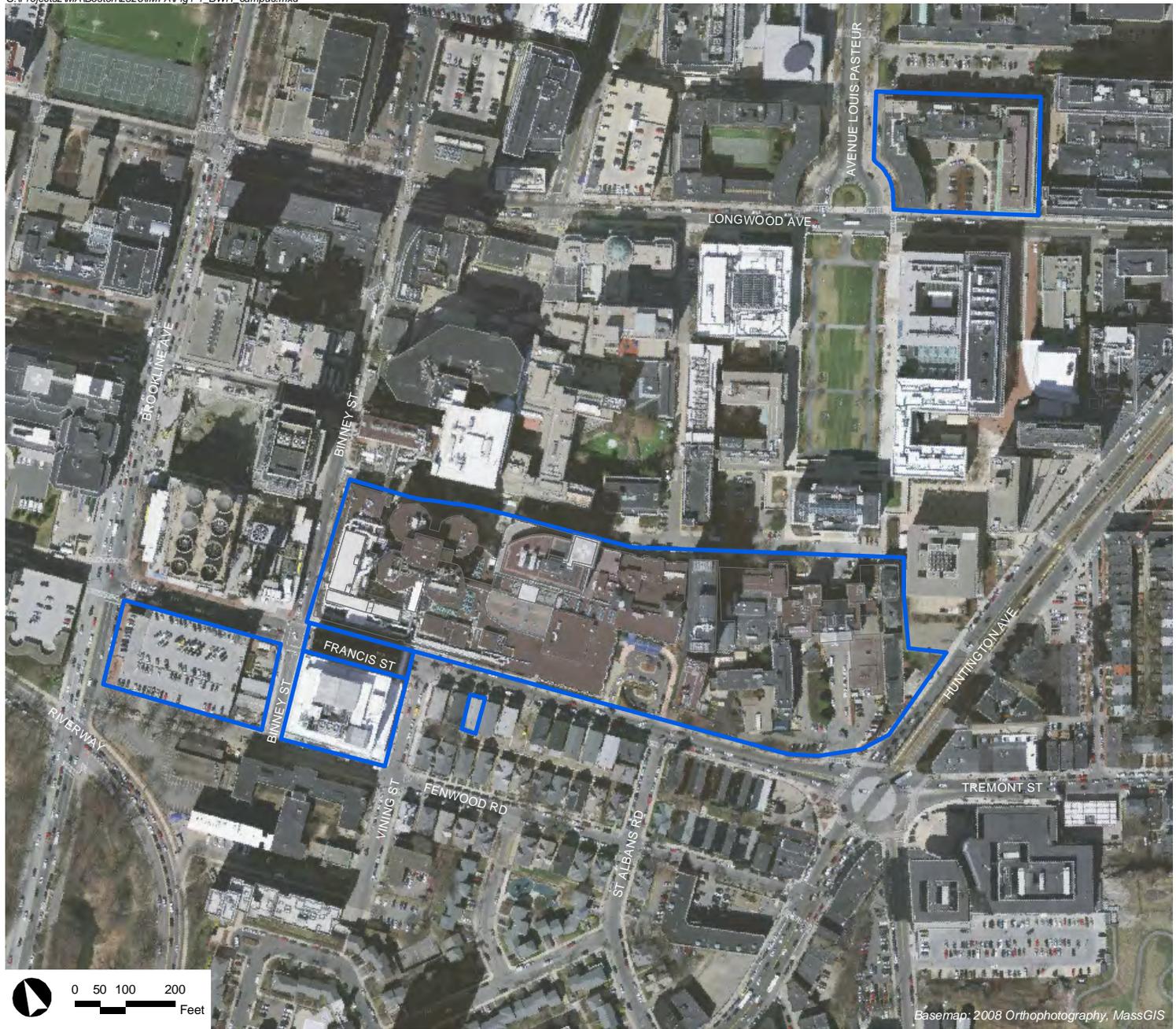
The Brigham and Women's Hospital, Inc. (BWH or the Hospital) is pleased to submit this "BWH 2010 Institutional Master Plan" (BWH 2010 IMP) pursuant to Article 80D of the Boston Zoning Code and the Boston Redevelopment Authority (BRA) Scoping Determination dated August 11, 2009 (see Appendix A). This BWH 2010 IMP will result in a new IMP for a term of ten years (2010 to 2020), and will incorporate the elements of the existing BWH IMP as approved in February 2005 (BWH 2005 IMP), while providing for BWH's future programmatic and facilities needs.

BWH, a major teaching hospital of Harvard Medical School (HMS), is one of the finest hospitals in the Greater Boston area and is a world-renowned center for advanced patient care, medical education, and research. This BWH 2010 IMP includes descriptions of BWH's existing facilities located within the Longwood Medical and Academic Area (LMA) and the adjacent Mission Hill neighborhood, projected future growth and space needs, long-range urban design guidelines, and master plan projects that are proposed to be developed during the term of the IMP. The boundary of the existing BWH Campus which totals 12.8 acres is shown in Figure 1-1.

This BWH 2010 IMP includes the Brigham and Women's Building and Binney Street Building (IMP Projects), the construction of the Brigham Green Enhancement and Parking (previously-approved by virtue of the BWH 2005 IMP), and Campus Additions and Campus Upgrades (defined and described in greater detail in Section 4.4). These components of the BWH 2010 IMP are shown on Figure 1-2.

The IMP Projects are components of and included within the Massachusetts Mental Health Center Redevelopment Project (MMHC Project)¹. During the term of the BWH 2010 IMP, BWH and Partners HealthCare System Inc. (PHS), in association with the Roxbury Tenants of Harvard Association, Inc. (RTH), are proposing to redevelop three parcels with mixed uses in four buildings; 1) a new Department of Mental Health (DMH) operated Partial Hospital/Fenwood Inn, 2) a clinical and administrative building (BWH-owned Binney Street Building), 3) housing (RTH-owned Residential Building), and 4) clinical and research uses (Brigham and Women's Building). This joint development effort includes the demolition of existing site buildings and the construction of approximately 633,960 sf (as measured by the Boston Zoning Code) in four buildings (the MMHC Project). The Brigham and Women's Building is proposed to be constructed on land which it will lease on a long-term basis from

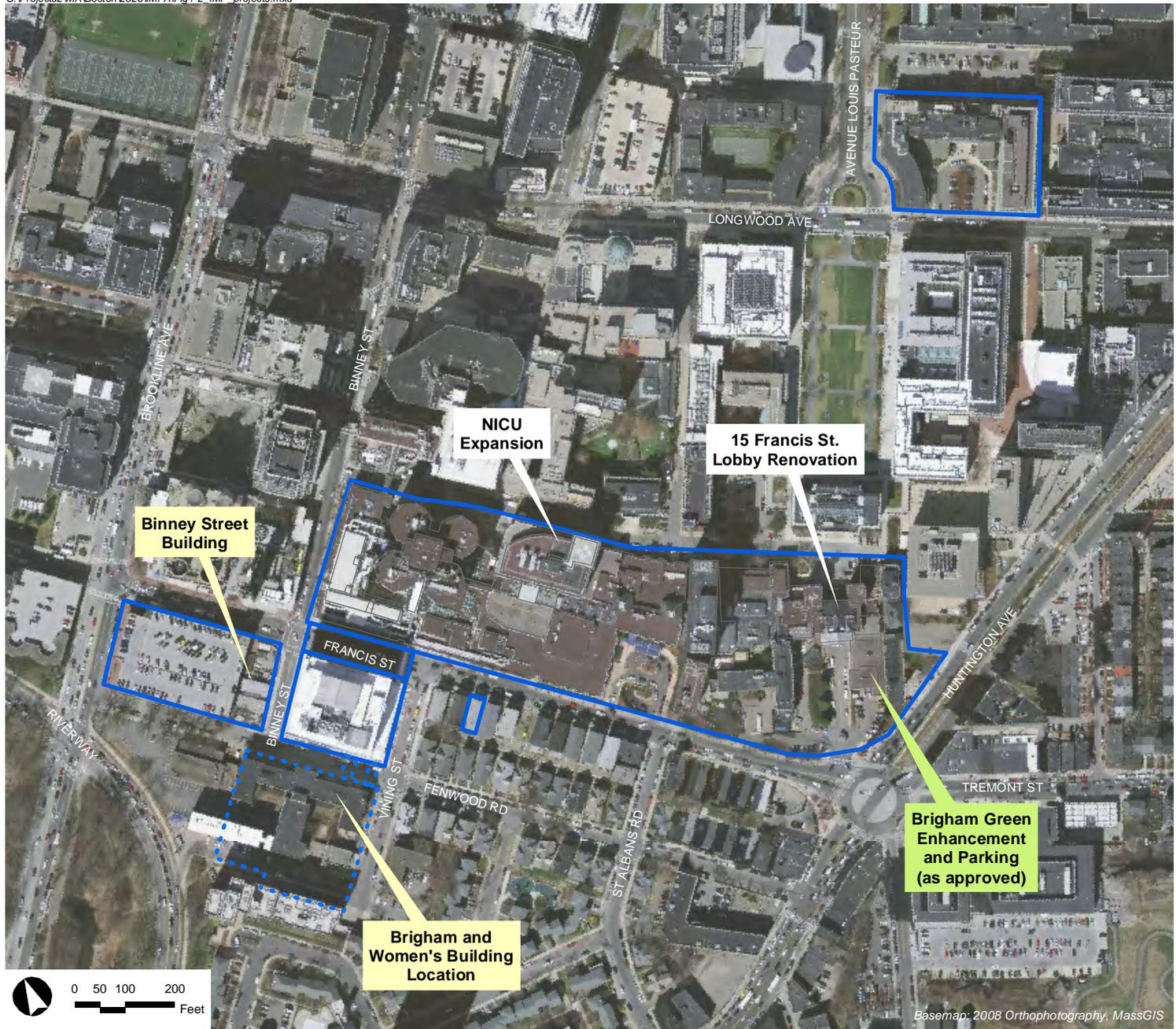
¹ The MMHC Project is subject to Large Project Review (Article 80B of the Boston Zoning Code) by the Boston Redevelopment Authority and review by the Massachusetts Environmental Policy Act Office (MEPA). A joint Draft Environmental Impact Report/Project Impact Report (EIR/PIR) was submitted to the BRA and MEPA on October 15, 2009.



LEGEND
□ BWH Campus

Source: BWH, BRA

BWH 2010 IMP Boston, Massachusetts



LEGEND

-  BWH Campus
-  Proposed BWH Campus
-  IMP Projects
-  Campus Additions and Upgrades
-  Brigham Green Enhancement

BWH 2010 IMP Boston, Massachusetts

Source: BWH

Basemap: 2008 Orthophotography, MassGIS

the Commonwealth of Massachusetts acting by and through its Division of Capital Asset Management (DCAM). The Binney Street Building will be constructed on a site which is owned by BWH already in the BWH IMP Overlay District.

The MMHC Site includes three parcels as shown on Figure 1-3. The first parcel totaling 2.61 acres is the Main MMHC Site. The second parcel, Partial Hospital/Fenwood Inn Site, totals 0.25 acres. Together the Main MMHC Site and Partial Hospital/Fenwood Inn Site constitute the MMHC Site and comprise 2.86 acres. The third parcel, the 0.29-acre Binney Street Site is owned by BWH. Together, these parcels collectively comprise the 3.15-acre Project Site. Existing conditions are shown in Figure 1-4.

As previously described, only two of the buildings which are proposed to be constructed in connection with the MMHC Project, the Binney Street Building and the Brigham and Women's Building, are included in the BWH 2010 IMP. The Binney Street Building, which will be developed by BWH, comprises 56,540 sf of clinical and office space which will be utilized by BWH for clinical uses in the long-term. DMH will occupy the Binney Street Building in the short-term until the DMH-designated space within the Brigham and Women's Building is available. The Brigham and Women's Building which will be developed, managed and controlled by BWH will contain approximately 358,670 sf of space for research and development, clinical and office uses by BWH and DMH. The Brigham and Women's Building will also include bridge and tunnel connections across Fenwood Road to the Shapiro Cardiovascular Center. Although not owned in fee by BWH, the site of the Brigham and Women's Building will be controlled, developed and utilized by BWH pursuant to a 95 year long term ground lease, which ownership shall be deemed "owned" as opposed to "leased" space for the purposes of this BWH 2010 IMP.

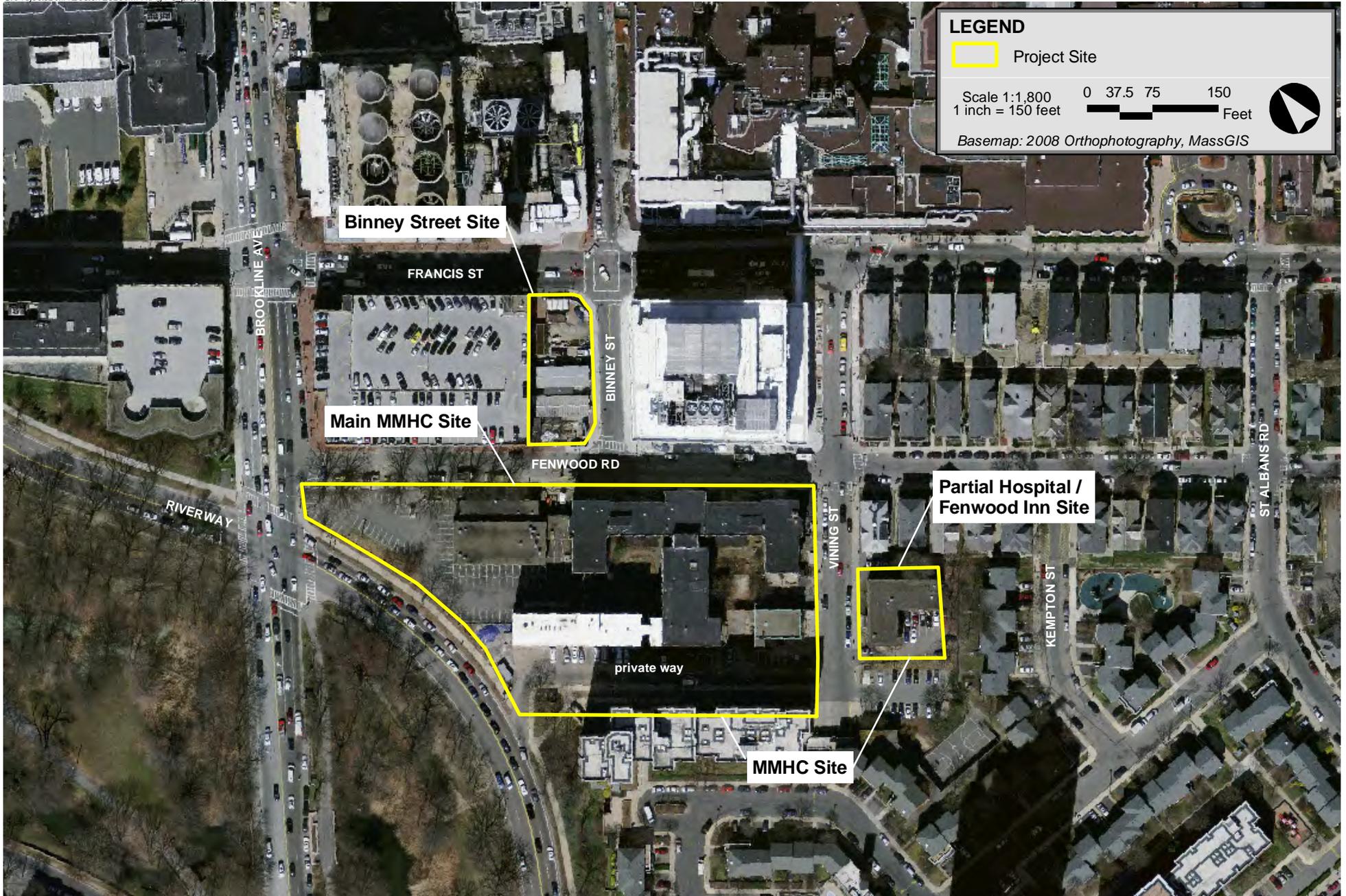
Although the Partial Hospital/Fenwood Inn will be developed by BWH and long term subleased for use by DMH, it will be exempt from local zoning as it an "essential government function" of the DMH. The fourth building, the Residential Building, will be owned and operated by RTH.

The MMHC Project, including the Binney Street Building and Brigham and Women's Building is shown in Figure 1-5, Proposed MMHC Project Site Plan.

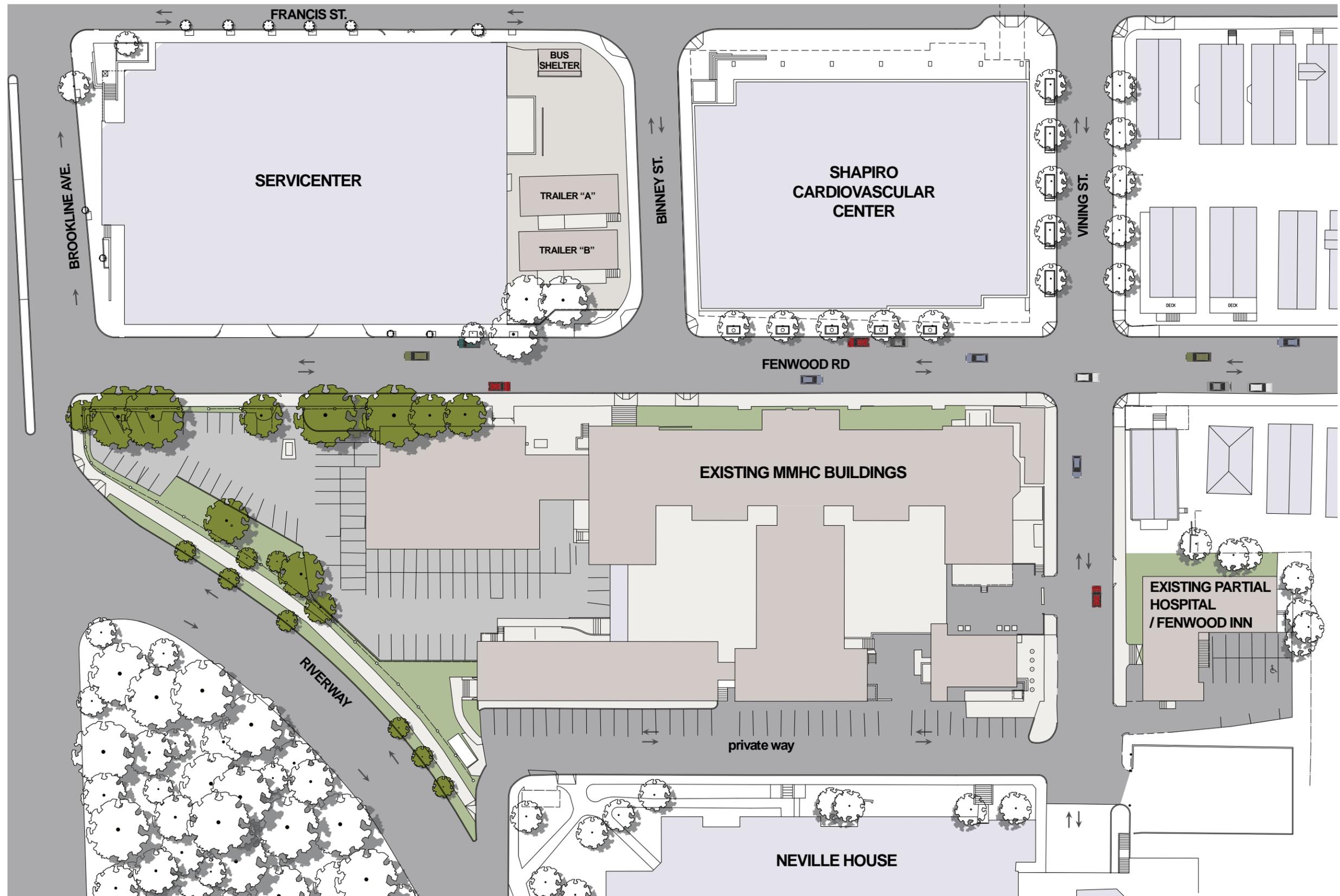
1.2 Background on Brigham and Women's Hospital

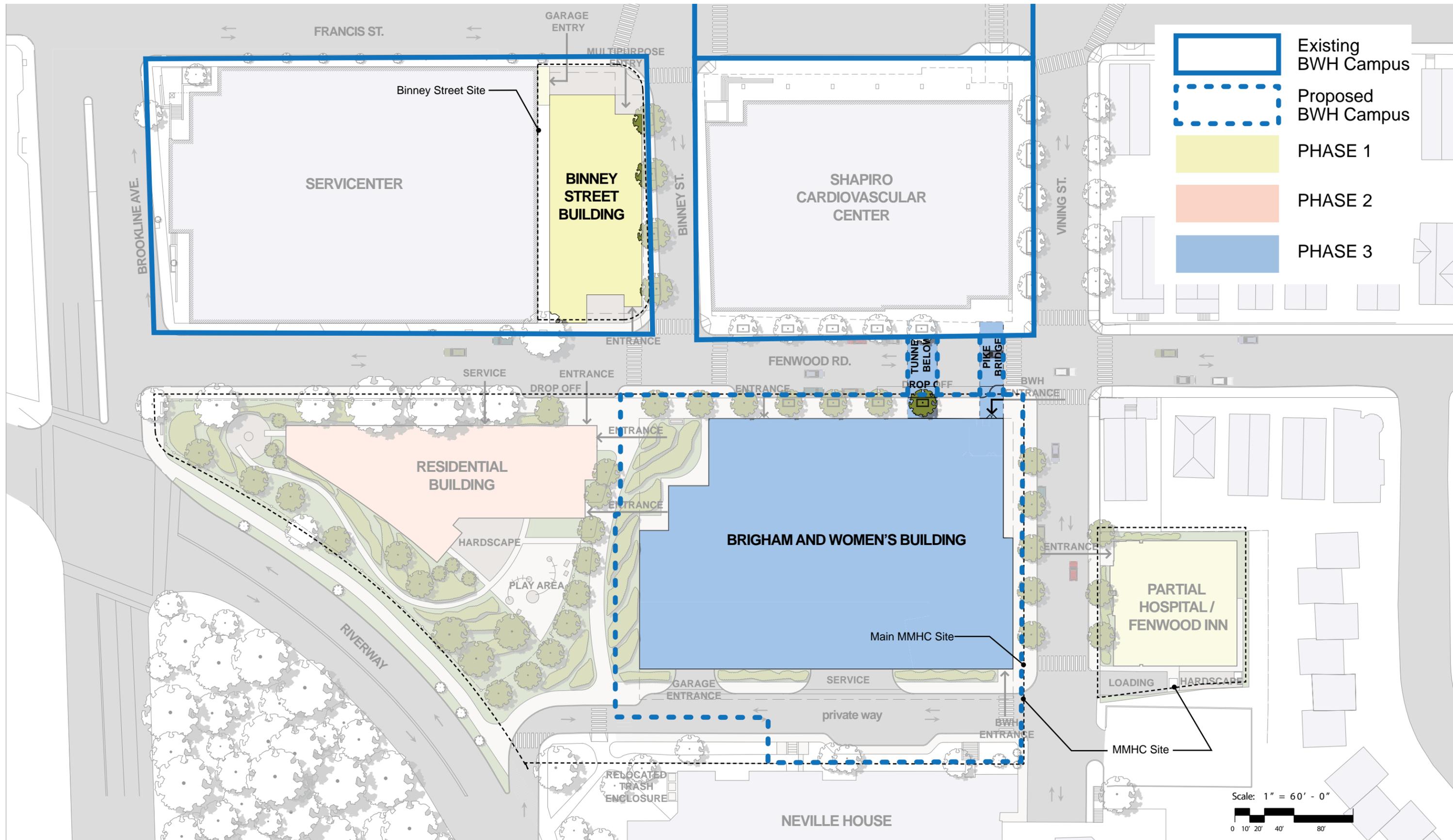
BWH is a Harvard-affiliated, non-profit, teaching hospital and a founding member of Partners HealthCare System Inc. BWH has an international reputation for the quality of its medical care and innovative research. In addition, its varied educational programs provide the highest quality training for medical nursing and other health professions.

BWH is a major institutional employer of Boston residents. With a workforce of approximately 14,288 total employees, and 12,894 employees in the LMA itself, current data indicate that approximately 37%, or 4,817 of employees working in the LMA are Boston residents.



BWH 2010 IMP Boston, Massachusetts





1.2.1 Hospital Background

BWH was established in 1980 as a result of an unprecedented merger involving three of Boston's oldest and most prestigious Harvard teaching hospitals: the Peter Bent Brigham Hospital – founded in 1911 “for the care of sick persons in indigent circumstances”, the Robert Breck Brigham Hospital – founded in 1914 to serve patients with arthritis and other debilitating joint diseases, and the Boston Hospital for Women. The Boston Hospital for Women itself was established through a merger in 1966 of the Boston Lying-in Hospital (established in 1832 for women unable to afford in-home medical care) and the Free Hospital for Women (founded in 1875 for poor women affected with diseases or in need of surgical aid).

In 1994, BWH joined with Massachusetts General Hospital to form Partners HealthCare System Inc., an affiliation established to create an integrated health care delivery system providing excellent, cost-efficient patient care while maintaining the hospital's historic dedication to teaching and research. Other Partners members include Faulkner Hospital, McLean Hospital, Newton-Wellesley Hospital, North Shore Medical Center, Partners Community Health Care, and the Spaulding Rehabilitation Hospital Network. In addition to its academic medical centers, community hospitals, specialty hospitals, community health centers, Partners also includes a physician network, home health care services and other related entities. Appendix B includes important milestones in BWH's history.

1.2.2 BWH Today

Today's BWH comprises 777 beds, extensive outpatient facilities, and state-of-the-art research laboratories². It is recognized internationally for its excellence in patient care, medical research, and the training of outstanding young physicians and other health care professionals.

BWH's pre-eminence and leadership are demonstrated in a wide variety of medical fields, as noted below.

- ◆ A preeminent provider of women's health services, BWH is New England's leading birthing center and a regional center of high-risk obstetrics and newborn care. BWH was ranked first in the nation in obstetric care by US News & World Report in 2008.
- ◆ The hospital is known world-wide for its pioneering work in transplantation of vital organs and tissues, including the heart, lung, heart-lung, kidney and bone marrow, and has the largest heart transplant and bone marrow transplant programs in New England.

² Includes 27 beds licensed to the Dana Farber Cancer Institute.

- ◆ BWH is one of the country's foremost centers for orthopedic and joint-replacement surgery.
- ◆ The hospital has also achieved significant breakthroughs in treating arthritis, rheumatic disorders, and cardiovascular disease.
- ◆ BWH is one of only two burn trauma units within the Boston metropolitan region.
- ◆ Year after year, BWH has been a top recipient among independent U.S. hospitals of research funding from the NIH.

Due to its leadership with clinical, basic, and population-based studies, BWH is advancing the prevention, diagnosis, treatment and cure of diseases for people in New England, across the country, and around the world.

1.3 BWH Mission and Objectives

BWH is dedicated to serving the needs of the community. It is committed to providing the highest quality health care to patients and their families, to expanding the boundaries of medicine through research, and to training the next generation of health care professionals.

BWH's stated vision is stated below:

Brigham and Women's Hospital will be the academic and community teaching hospital and physicians of choice with the most distinguished caliber of physician and professional healthcare staff. We will create the highest quality of care through our commitment to patients and their families, the innovation inherent in our academic programs, and the strength of partnerships with members of Partners HealthCare System, Dana Farber Cancer Institute, Harvard University, and our local community, as well as our unique relationships with care provider groups such as Atrius Health.

BWH's values include:

- ◆ **Quality Patient Care:** Delivering quality patient care is the center of everything we do.
- ◆ **Teaching Excellence:** We seek to uphold the highest standards in training health care professionals.
- ◆ **Research Leadership:** We continuously seek new ways to demonstrate our leadership role in research.
- ◆ **Customer Focus:** Our focus is to serve our customers.
- ◆ **Respect for the Individual:** We recognize and value the contributions of every individual.

- ◆ **Teamwork:** We work toward a unified approach to developing health care solutions.
- ◆ **Embracing Change:** Embracing change will help us to be successful.
- ◆ **Operational Efficiency:** We strive for efficient and effective delivery of services.

Since the formation of BWH, the hospital has distinguished itself in Boston and throughout the nation for its excellent patient care, research, and education.

1.3.1 Patient Care

BWH is a full-service, acute care teaching hospital, providing a number of specialized services to patients from Boston and New England. The hospital has 777 beds³ and 43 operating rooms, and in fiscal year⁴ (FY) 2008 recorded 45,617 (excluding newborns) inpatient discharges and 753,091 ambulatory visits in the LMA including 58,168 visits recorded in FY 2008 by the BWH Emergency Department. The surgical staff performed approximately 30,232 inpatient and ambulatory operations in FY 2008.

BWH has one of the largest obstetrical programs in New England, with approximately 8,000 deliveries each year (7,841 in FY 2008) and one of the most comprehensive high-risk obstetrics services in the country.

In addition, BWH's two licensed health centers – Southern Jamaica Plain and Brookside (both located in Jamaica Plain) – saw a total of 152,504 ambulatory visits in FY 2008. The BWH's community health centers represent approximately 17% of BWH's total ambulatory volume. Specialties include primary care, pediatrics, adult medicine, obstetrics and gynecology, mental health, women's health, WICS, and dentistry. BWH purchased a building site at 640 Centre Street and invested \$5.3 million dollars to build a new 18,000 square foot health center (Southern Jamaica Plain Health Center) in 1997 to 1999 for residents of Jamaica Plain, Roslindale, Hyde Park and West Roxbury. BWH is currently evaluating modest expansion of the services offered at Southern Jamaica Plain Health Center to better meet the community's needs.

In 2001, BWH purchased the existing Brookside Community Health Center on Washington Street and completely renovated and expanded it to 27,000 square feet. BWH invested approximately \$5.4 million dollars in this important Community Health Center to serve the

³ By January 2010, it is anticipated that the bed count will be 793 beds. The increased bed count is due to the growth of BWH's oncology and other services. BWH is renovating its oncology unit which will establish an Oncology Center of Excellence containing 110 beds in all private rooms. This Oncology Center of Excellence is a joint effort with the Dana Farber Cancer Institute and 30 of these beds are licensed to Dana Farber.

⁴ Fiscal Year extends from October 1 to September 30.

residents of Jamaica Plain, Roxbury, North Dorchester and Mattapan. In addition to these major capital investments, BWH underwrites the two health centers operational budgets by approximately \$4 million annually.

BWH is also one of the largest providers of free care to people without means to pay for health care in the Commonwealth, and a major provider of health care for patients on Medicaid.

1.3.2 *Biomedical Research*

Throughout its long history, BWH has been internationally recognized for excellence in biomedical research. In recent years, even greater contributions and recognition in research have been achieved. BWH ranks second nationally among independent hospitals in research funding from the National Institutes of Health (NIH), receiving over \$252 million from the NIH in FY 2008. Leading BWH research programs supported by the NIH include those in:

- ◆ Cardiology;
- ◆ Multiple Sclerosis;
- ◆ Alzheimer's Disease;
- ◆ Hypertension;
- ◆ Renal Medicine;
- ◆ Obstetrics and Gynecology;
- ◆ Infectious Diseases;
- ◆ Surgery;
- ◆ Pathology; and
- ◆ Rheumatology.

Additional research funding from other federal, state, not-for-profit, foundation, and industry funding sources is estimated to be over \$189 million⁵ in FY 2008 bringing total research funding to over \$441 million.

To foster the research missions of the hospital, all of BWH's physicians are required to maintain faculty appointments at Harvard Medical School and to participate actively in both research and patient care. This universal requirement is unique among the Harvard-affiliated teaching hospitals. To permit integration of basic biomedical research with patient care applications, clinical facilities at BWH have been developed in close proximity to the

⁵ The \$189 million in FY 2008 includes grants provided over multiple years.

BWH research laboratories and to basic sciences laboratories at Harvard Medical School. The furtherance of BWH's research mission whose efficacy is demonstrated in clinical applications is a key element of the BWH 2010 IMP.

1.3.3 Education

BWH is a major teaching affiliate of Harvard Medical School. More than 40 percent of Harvard Medical School students undergo clinical training at the BWH, and BWH faculty participates actively in formal courses at the school. In graduate medical education, BWH maintains 45 ACGME-accredited programs with approximately 850 residents and fellows each year. Educational experiences are provided additionally to research fellows funded primarily by the NIH. To promote its teaching mission, BWH has full-time clinical faculty of 1,214 on the medical staff and an additional affiliate staff of 839 physicians, all of whom hold faculty positions at Harvard Medical School.

In addition to educational programs in medicine, BWH serves as a clinical training site for nursing students, chaplaincy, dieticians, medical technologists, nuclear medicine technologists, occupational and physical therapists, pharmacists, radiology technologists, respiratory therapists, and social workers.

1.3.4 Conclusion

The IMP Projects, Campus Additions and Campus Upgrades and the Brigham Green Enhancement and Parking project support the goals and mission of the BWH in several important areas. By expanding the capacity for state of the art clinical care, BWH is able to grow important service lines as well as relocate existing clinical services out of older less functional buildings. In addition, an increase in the space available for clinical and research uses helps relieve stress on space needs in other areas and functions of the hospital and contributes to greater excellence in the quality of BWH's clinical care and educational offerings that depend upon a high quality care environment to fulfill BWH's teaching mission.

BWH's growing research entities are in need of modern facilities and expansion space. The IMP Projects, specifically the Brigham and Women's Building, will provide state of the art facilities with the required infrastructure and support spaces to enable the cutting edge research that BWH has become known for and which is critical to quality patient care. Juxtaposing clinical care in both the Brigham and Women's Building and the adjacent Binney Street Building with research in the Brigham and Women's Building will encourage rapid translational research so that research discoveries can quickly be transformed into better healthcare.

Better clinical and research facilities mean better care for patients and better support for their families both in the local communities BWH has pledged to serve, as well as the many referral patients who travel from distant states and countries to receive care at BWH.

In addition to the local and distant populations served by BWH, the IMP Projects will allow the return of DMH's Massachusetts Mental Health Center (MMHC) to the area from its temporary location in Shattuck Hospital. The operation of the Massachusetts Mental Health Center is a collaboration between the DMH and Harvard Medical School. It is both a state mental health facility and a center of excellence in academic psychiatry, combining public service with outstanding clinical and research programs. The MMHC provides access to a network of effective, efficient and culturally sensitive clinical and rehabilitative services for Boston Metro area DMH clients with mental illness. The MMHC serves an adult (defined as aged nineteen years or older) population who are living with chronic and persistent mental illness, which negatively affects their ability to function socially, cognitively, and vocationally. MMHC provides recovery oriented pharmacologic services, the Partial Hospital Program (a link between crisis stabilization/transitional housing and outpatient mental health treatment, to provide a 24-hour, acute, step-down and diversion service for clients who require this intensity of treatment), group individual therapy and case management services. The Partial Hospital/Fenwood Inn will include a 42 bed transitional shelter program for homeless, mentally ill men and women, a 5 bed crisis stabilization unit and 8,260 square feet of partial hospital and outpatient treatment space.

1.4 Institutional Master Plan Background / Permitting History

The BWH 2005 IMP was approved by the BRA Board in January 2005 and adopted by the Zoning Commission in February 2005. The term of the approved IMP is five years from 2005 to 2010.

The BWH 2005 IMP included three projects:

- ◆ 70 Francis Street (Shapiro Cardiovascular Center) – The Shapiro Cardiovascular Center provides a healing environment for patients and their families and a supportive environment for hospital staff. The building contains specialty operating rooms for cardiac and vascular surgery, and thoracic surgery. The new operating rooms allow for the integration of diagnostic and therapeutic services. In addition, approximately 136 beds for cardiovascular patients (30 net new beds), and clinical cardiovascular space are included in the project. The Shapiro Cardiovascular Center opened in April 2008.
- ◆ Amory Building Façade Improvements – These improvements utilize architectural elements to reinforce the visibility of the hospital entry. At 75 Francis Street, the bridge across Francis Street marks the main entrance to the hospital, and canopy systems associated with this bridge and attached to the existing walls of the Amory Building elegantly marks the main threshold of the BWH Campus. As part of the Amory Building Façade Improvements project, the visibility into and from the existing building has been improved. In addition, the new façade is projected forward to more clearly signal the main entrance to the hospital as it is approached along Francis Street. This project has been completed.

- ◆ Brigham Green Enhancement and Parking – This approved project includes the improvement of the Brigham Green by removing existing surface parking and the Biophysics building, and in its place creating a landscaped open space above a subsurface parking garage. The new Brigham Green will serve to welcome pedestrians coming from Brigham Circle/Huntington Avenue and improve pedestrian conditions and circulation on the BWH Campus. The area in front of the Peter Bent Brigham Hospital building at 15 Francis Street will become a new green space sloping gently down from the building's front entrance to Brigham Circle. The south-facing green space will provide an attractive setting for the building that is the recognized image of the hospital. The space will be able to be enjoyed by patients, staff, visitors and residents.

Current planning calls for the Brigham Green Enhancement and Parking Project to be completed prior to the start of construction of the Brigham and Women's Building proposed in this IMP. The schedule for the Brigham Green Enhancement and Parking Project has been adjusted due to delays occasioned by issues of constructability and the challenges of obtaining project financing. The timing of the Brigham Green Enhancement and Parking is also driven in part by the need to have space to move the occupants of the Bio-Physics Building that will be demolished as part of this Project. Section 4.3 provides additional information on the Brigham Green Enhancement and Parking schedule.

BWH submitted an IMPNF on June 16, 2009 to introduce two new IMP Projects, the Binney Street Building and the Brigham and Women's Building. In addition to these IMP Projects, this BWH 2010 IMP includes Campus Additions such as the expansion of the Neo Natal Intensive Care unit, renovation of the 15 Francis Street lobby, Campus Upgrades as well as the construction of the Brigham Green Enhancement and Parking (previously-approved by virtue of the BWH 2005 IMP).

1.5 Community Benefits Summary

BWH is one of the largest providers of Health Safety Net care to people without means to pay for health care in the Commonwealth. In FY 2008, more than \$40 million worth of care was provided to approximately 3,000 patients. More than one-third of these patients came from Boston neighborhoods, including the communities of Dorchester, Mattapan, Jamaica Plain and Roxbury. At the same time, the hospital treated nearly 5,000 patients insured under Commonwealth Care.

BWH is also a major provider of health care for patients on Medicaid, providing more than \$161 million worth of care to more than 25,000 patients in FY 2008. Nearly half of those patients were from Jamaica Plain, Dorchester, and Roxbury.

Most importantly, BWH's development of the DMH-dedicated space which will occur as a result of the MMHC Project and its direct and measurable support of RTH which enables the development of the Residential Building are evidence of BWH's significant contributions to the community.

Chapter 9.0 and Appendix C provide information on BWH's Community Benefits Program.

Public benefits specific to the development of the Binney Street Building and Brigham and Women's Building as part of the overall MMHC Project are described in Section 1.3 of the Draft EIR/PIR submitted concurrently with this BWH 2010 IMP.

1.6 Public Participation

BWH has engaged in an extensive public outreach program to discuss the proposed 2010 BWH IMP, and the IMP Projects, both on their own and to the extent they are part of the MMHC Project, with the community, elected officials and City departments. BWH has worked to establish a Community Construction Mitigation Group in response to area residents' concerns regarding construction impacts. This group of residents and stakeholders including all segments of the residential neighborhood and the construction manager, BWH, RTH and all relevant professionals including engineers and scientists, are working to address potential construction impacts including phasing, truck routes and coordination of deliveries, construction worker parking, demolition, and other construction activities. The group meets twice monthly to review in detail each element of the process.

The following is a list of additional outreach efforts:

- ◆ Presenting the IMP Projects to the LMA Forum and participation in regular LMA Forum meetings;
- ◆ Presenting the IMP Projects at a BRA-sponsored public meeting;
- ◆ Ongoing Coordinating with DCAM;
- ◆ Ongoing coordination with DMH;
- ◆ Meeting with the Emerald Necklace Conservancy;
- ◆ Presenting the IMP Projects at a RTH community meeting and meetings with the Roxbury Tenants of Harvard Board of Directors;
- ◆ Meeting with elected officials including City Councilor Michael Ross, State Representative Jeffrey Sanchez, State Representative Gloria Fox, and State Senator Sonia Chang-Diaz;
- ◆ Meeting with Mission Hill Neighborhood Housing Services and with the Back of the Hill Community Development Corporation;

- ◆ Engaging in an ongoing dialogue with Mission Hill Health Movement;
- ◆ Meeting with Medical Area Total Energy Plant (MATEP);
- ◆ Meeting with Medical Academic and Scientific Community Organization;
- ◆ Coordinating with DMH;
- ◆ Meeting with representatives of neighboring institutions including Children's Hospital Boston, Harvard Medical School, Dana Farber Cancer Institute, and Beth Israel Deaconess; and
- ◆ Hosting an ongoing collaboration with the Community Construction Mitigation Group.

In these meetings, a comprehensive illustrated description of the IMP Projects has been presented and detailed questions and comments of interest to each constituency have been addressed. As required by the BRA's Scoping Determination, this BWH 2010 IMP incorporates responses to IMP-related comments submitted to the BRA. In addition, there has been extensive face-to-face discussion of these topics with the stakeholders.

A partial list of the subjects presented and questions addressed in these meetings include:

- ◆ description of the agreement with DCAM;
- ◆ a graphic presentation of the current plans, program, and timetable for the phased development;
- ◆ demolition;
- ◆ abatement;
- ◆ noise;
- ◆ potential BWH program and uses;
- ◆ shadows;
- ◆ design;
- ◆ parking;
- ◆ landscaping;
- ◆ traffic;
- ◆ temporary site conditions;

- ◆ preservation;
- ◆ construction logistics;
- ◆ view corridors;
- ◆ sustainability;
- ◆ financing; and
- ◆ affordable housing.

Community outreach will continue during the term of this BWH 2010 IMP and as each of the IMP Projects are constructed.

1.7 Term of IMP

This BWH 2010 IMP will result in a new IMP for a term of ten years (2010 to 2020).

Section 2.0

Existing Campus Context and Physical Needs/Objectives

2.0 EXISTING CAMPUS CONTEXT AND PHYSICAL NEEDS / OBJECTIVES

2.1 Existing Campus Description

2.1.1 BWH Campus and Facilities

The BWH Campus is located in Boston's LMA and includes portions of the Mission Hill neighborhood by virtue of development authorized by the BWH 2005 IMP. The BWH Campus includes

- (i) an area of land bounded generally by Francis Street, Huntington Avenue, Shattuck Street, and Binney Street (8.73 acres) which contains the hospital's main buildings and below-grade parking garage;
- (ii) an area on the south side of Francis Street between Binney and Vining streets (the site of the recently opened Shapiro Cardiovascular Center) (1.11 acres) as well as an area of Francis Street between the Shapiro Cardiovascular Center and 75 Francis Street;
- (iii) an area between Brookline Avenue and Binney Street (1.28 acres), the site of the Servicenter Complex which contains a materials handling center (owned by and used exclusively by BWH), approximately 12,989 sf of space devoted to doctor's offices used by BWH; and 643 parking spaces located in the garage. The Binney Street Site, 0.29 acres of the total 1.28 acre Servicenter site, currently has two temporary construction trailers that will be relocated to the Main MMHC Site to support the construction of the Partial Hospital/Fenwood Inn and Binney Street Buildings;
- (iv) property at 221 Longwood Avenue (1.60 acres) which hosts three hospital buildings, including the former Boston Lying-In Hospital buildings and the Eugene Braunwald Research Center; and
- (v) residential property at 48 Francis Street (0.07 acres), which houses a four-story residential structure with three units used for long term residential stays for oncology and thoracic surgery patients and families.

Together, these land areas totaling 12.8 acres are the BWH Campus and are co-extensive with the limits of the BWH Institutional Overlay District. The BWH Campus includes approximately 2 million gross square feet of building area.

The BWH-owned facilities are depicted in Figure 2-1. See Table 2-1, BWH-owned Facilities, which includes information on all BWH-owned facilities in Boston.



LEGEND

- BWH Campus
 - BWH Owned Facilities**
 - A1** Ambulatory Services Building 1
 - AB** A Building/Coolidge/Scan
 - AL** Amory Lab
 - AP** Ambulatory Garage [below grade]
 - BB** B Building
 - BI** Bicolor Building
 - BP** Biophysics Building
 - CA** Carrie Hall/Clinics/Pearl
 - CW** Connors Center for Women's Health
 - LL** Lower Levels [not shown]
 - MR** Medical Research Building
 - NA** Nesson Ambulatory Center
 - PB** Peter Bent Brigham
 - RA** Radiology Building
 - SR** Surgery Building
 - TH** Thorn Research Center
 - TR** Tower Building
 - WP** West Plaza Infill
 - 48** 48 Francis Street
 - BL** Boston Lying-In
 - BR** Eugene Braunwald Research Ctr.
 - RF** Richardson Fuller
 - SC** Servicerter
 - CC** Shapiro Cardiovascular Center
 - BWH Leased Facilities**
 - BC** One Brigham Circle
 - CH** Children's Hospital Research Building (Karp Research Building)
 - DF** Dana-Farber Building (Smith Building)
 - HM** Harvard Institutes of Medicine
 - H1** 651 Huntington Avenue
 - H2** 741 Huntington Avenue
 - LG** Longwood Galleria
 - MP** Massachusetts College of Pharmacy
 - NH** Neville House
 - NR** New Research Building (Harvard)
 - MB** MASCO Building
- Source: BWH, BRA

BWH 2010 IMP Boston, Massachusetts

Table 2-1 BWH-owned Facilities

Map Key (Fig 4-1)	Building Name	Address of Nearest Entry	Building Use (1)	Year Built	Condition (2)	Approx. Roof Height	Floors Above Grade	Floors Below Grade	Approx. Gross Floor Area (3)	Comments
BWH Campus										
A1	Ambulatory Services Building I	45 Francis Street	Hospital Use including Ambulatory Care, Public Assembly	1979	F	57	3	see LL	95,670	Ambulatory care building housing: Emergency Dept., OB Admitting, Brigham Internal Medicine Associates, Dialysis, Endoscopy, Nutrition, Vascular Lab Imaging.
AB	A Building/Coolidge/Scan	45 Francis Street	Hospital Use including Ambulatory Care	1913/1963/1972	NI	40	4	1	48,137	Three buildings used for administrative space and ambulatory care.
AL	Amory Lab	45 Francis Street	Hospital Use	1979	F	66	3	see LL	73,674	Houses most of the BWH clinical labs and endoscopy procedure space. Surrounds the 75 Francis hospital lobby.
AP	Ambulatory Garage	45 Francis Street	Parking	1986	G	na	0	3	0	Underground parking garage with 247 spaces for patients.
BB	B Building	15 Francis Street	Hospital Use, including Ambulatory Care	1915	NI	50	5	1	46,879	Ambulatory care building housing: Thyroid Test Center, Pain Management, Neurology, and support services and faculty offices.
BIC	Bicor Building	45 Francis Street	Hospital Use - Research	2008	G	22	1	0	2183	Research facility containing a cyclotron and associated Labs used to produce healthcare radiopharmaceuticals.
BP	Biophysics Building	15 Francis Street	Hospital Use, including Ambulatory Care, Public Assembly	1970-1984	F	12	1	0	8,492	One-story building housing faculty offices and asthma research - no patient care. Proposed to be removed for the reconstruction of Brigham Green.
CA	Carrie Hall/Clinics/Pearl	15 Francis Street	Hospital Use, Public Assembly	1913/1913/1956	NI	50	5	1	43,536	Three buildings with faculty offices, administrative space, and public assembly use.
CW	Connors Center for Women's Health	75 Francis Street	Hospital Use, including Ambulatory Care, Public Assembly	1994	G	161	10	2	217,181	Ambulatory and inpatient care building with 120 beds. Houses the Center for Women's and Newborns-Maternity Hospital (largest maternity hospital in New England), NICU and Women's Health Specialties: Obstetrics and Gynecology; Center for Reproductive Medicine, Breast Health and Mammography.
LL	Lower Levels	75 Francis Street	Hospital Use	1979	F	na	0	2	182,127	Underground floors housing the heart of the hospital's diagnostic and treatment facilities. OR Suite; Radiology; Interventional Services, Angiography, Cath Labs, Magnetic Resonance Therapy, Radiation/Oncology and Clinical Support Services.
MR	Medical Research Building	45 Francis Street	Hospital Use	1974	NI	81	7	1	29,699	Built as a temporary building, houses mostly wet research facilities.
NA	Nesson Ambulatory Center	45 Francis Street	Hospital Use, including Ambulatory Care, Public Assembly	1986	F	32	3	2	103,655	Ambulatory care facility housing: ambulatory radiology, PT, Podiatry; Brigham Surgical Group and Brigham Medical Group.
PB	Peter Bent Brigham	15 Francis Street	Hospital Use, Public Assembly	1913	F	63	6	1	55,648	Former Peter Bent Brigham hospital building, now housing hospital administration, research, restaurant (public assembly). Limited clinical uses.
RA	Radiology Building	15 Francis Street	Hospital Use	1967	F	47	4	1	15,207	Small building housing radiology administration and library.
SC	Servicenter	80 Francis Street	Hospital Use, including Ambulatory Care, Parking	1979	G	65	5	1	12,989 ⁽⁴⁾	The building consists of a public parking garage, the Hospital's materials handling facility, and clinical/office space.
SR	Surgery Building	45 Francis Street	Hospital Use, Public Assembly	1969	NI	46	4	1	55,549	Building housing ambulatory clinics and administration with some research. Also houses Bornstein Amphitheater.
TH	Thorn Research Building	45 Francis Street	Hospital Use	1984	F	192	16	1	146,929	Research building, mostly wet labs.
TR	Tower Building	75 Francis Street	Hospital Use, Public Assembly	1979	F	202	16	1	358,255	Patient care tower housing 491 beds, both medical/surgical and Intensive Care Units. Also non-invasive testing and faculty offices.

Table 2-1 BWH-owned Facilities (Continued)

Map Key (Fig 4-1)	Building Name	Address of Nearest Entry	Building Use (1)	Year Built	Condition (2)	Approx. Roof Height	Floors Above Grade	Floors Below Grade	Approx. Gross Floor Area (3)	Comments
WP	West Plaza Infill Building	75 Francis Street	Hospital Use	2002	G	na	1	0	2,624	Building for clean clinical stores and materials handling.
SCC	Shapiro Cardiovascular Center	70 Francis Street	Inpatient/Hospital Use / Public Assembly	2008	G	167	10	3	346,527	Building contains operating rooms for cardiac, vascular, and thoracic surgery. The operating rooms will allow for the integration of diagnostic and therapeutic services. Approximately 136 beds for cardiovascular patients, as well as extensive clinical cardiovascular space and imaging facilities and special procedures.
48FR	48 Francis St.	48 Francis St.	Residential/Hospital	c 1900	G	35	4	1	2,616	Houses Patrick Thompson House for Patient families.
BL	Boston Lying-In	221 Longwood Avenue	Hospital Use	1922	NI	69	5	1	66,467	Former Boston Lying-In Maternity Hospital housing: Research Labs, Faculty Offices and Ambulatory Clinics: Neurology; Endocrinology; Hypertension; Dermatology.
BR	Eugene Braunwald Research Center	221 Longwood Avenue	Hospital Use	1992	G	68	6	1	98,134	Building containing research laboratories including Magnetic Resonance Imaging research.
RF	Richardson Fuller	221 Longwood Avenue	Hospital Use, including Ambulatory Care	1920	NI	65	5	1	57,893	Building housing: Research Labs, and Faculty Offices.
BWH Campus Total									2,070,071	
Outside LMA										
	Brookside Community Health Center	3297 Washington Street	Hospital Use, including Ambulatory Care	c 1920	G	20	2	0	26,621	Building housing a large community health center with a long history in the Egleston area. Recently renovated and expanded by BWH and includes Primary Care, Mental Health, WICS, Dentistry, OB/GYN, and Pediatrics.
	Southern Jamaica Plain Health Center	640 Centre Street	Hospital Use, including Ambulatory Care	1997	G	27	2	1	17,735	New Building housing community health center: Adult Primary Care; Pediatrics, Mental Health; OB/GYN/Women's Health Clinics, WICS and Clinical Lab.
All BWH Boston Property										
								TOTAL	2,114,427	
Notes:										
(1)	Includes Hospital Use and High Impact Subuses (facility of public assembly, nursing residence, parking facility, power plant, centralized heating or cooling plant, or ambulatory clinical care facility).									
(2)	Condition Codes: G = Good; F = Fair; NI = Needs Improvement.									
(3)	Gross Floor Area of building as defined by the City Zoning excluding FAR excludable areas and consistent with prior determinations is exclusive of garage space that is below grade.									
(4)	Excludes 219,775 sf devoted to parking consistent with other FAR determinations for the Servicer.									

Outside the LMA

BWH also owns and operates two large community health centers – Brookside Community Health Center and Southern Jamaica Plain Health Center – which are both, located outside the LMA in Jamaica Plain.

Hospital Access and Internal Circulation

There are currently three major pedestrian and vehicular entry points to the BWH Campus buildings that line Francis Street.

- ◆ 75 Francis Street is the current main entry for the hospital, and it serves the hospital's Tower Building, Connors Center for Women's Health, and the Shapiro Cardiovascular Center via a bridge. Most inpatients and visitors arrive and depart from this location. Valet parking is provided for patients and families at the hospital's main driveway. The pedestrian entry to the Emergency Department and major inpatient and family support functions are all located in this area.
- ◆ 45 Francis Street is the primary entrance for ambulatory patients. Adjacent to this area is the major on-campus research space. The entry to a 247-car below-grade parking garage for valet use is also at this location.
- ◆ The original Peter Bent Brigham Hospital building at 15 Francis Street is the ceremonial entry for the hospital and the entry for ambulatory patients taking the E Line. This end of the BWH Campus along Huntington Avenue has become primarily faculty, office, limited clinics, and senior administration space. 57 parking spaces are provided at this end of the BWH Campus.

In addition, there are two pedestrian entry points from Shattuck Street: one at the Tower Building and one at the Peter Bent Brigham Hospital building. The primary Emergency Department ambulance entrance is also located off Shattuck Street.

The key element in the hospital's internal pedestrian movement is the "Pike", a major internal pedestrian corridor that extends the entire length of the BWH Campus from the 15 Francis Street Peter Bent Brigham lobby thru the full length of the hospital across the Francis Street bridge to the new Shapiro Cardiovascular Center at 70 Francis Street's second floor level. This internal connector runs essentially parallel to Francis, Shattuck and Binney Streets and carries large volumes of pedestrians traveling between BWH departments and buildings in an eight- to twelve-foot-wide corridor. In addition to the Francis Street bridge; pedestrian bridge connections are provided to the Dana-Farber Cancer Institute, Children's Hospital Boston, and Harvard Medical School with three bridges crossing Shattuck Street. These bridges provide safe passage for BWH's patients and their families, both ambulatory and in wheelchairs, in all weather conditions while maintaining visual connections to the urban fabric through the extensive use of floor to ceiling glass.

2.1.2 BWH Leased Facilities

In addition to facilities it owns, BWH leases approximately 884,000 sf of space in buildings in and around the LMA that supports activities occurring on the BWH Campus. As indicated in Table 2-2, BWH leases approximately 725,000 sf within 11 buildings within or immediately adjacent to the LMA. In addition, BWH leases approximately 159,000 sf in ten buildings located in neighborhoods surrounding the LMA.⁶ A wide variety of functions occur at the leased facilities. Leased space is identified in Table 2-2 and depicted on Figure 2-1 BWH LMA Facilities.

BWH leases include research space at several facilities including Children’s Hospital and the Dana Farber Cancer Institute.

As demonstrated in Table 2-2, BWH has historically leased space in off-site facilities for hospital functions that do not need to occur on the BWH Campus. Table 2-2 only lists leased facilities in Boston, although there are a number of facilities in neighboring municipalities, particularly Brookline.

2.1.3 Service and Loading

The primary location for materials handling and waste is the Servicer Complex, where the hospital’s main loading docks are located on Fenwood Road. A service tunnel at the second below-ground level (L2) connects the loading docks to the BWH Campus, including the Shapiro Cardiovascular Center. Additional loading and service areas are located at West Plaza (20 Shattuck Street) and the Thorn Building (50 Shattuck Street).

⁶ The IMP will only address properties in the LMA vicinity of Boston and adjacent properties owned or long-term leased by the Hospital located in the Mission Hill Neighborhood Zoning District.

Table 2-2 BWH Leased Facilities

Map Key (Fig 4-1)	Building Name	Address	Building Use [1]	Gross Floor Area (2)	Parking Spaces	Lease Expiration (3)
<i>Within/Adjacent to LMA</i>						
BC	One Brigham Circle	1620 Tremont Street	Hospital Use, including parking	137,538	255	4/14/2053
CHRB	Karp Research Building (Children’s Hospital)	1 Blackfan Circle	Hospital Use, including parking	47,228	20	2/28/2014
DF	Dana-Farber Building (Smith Building)	65 Deaconess Road	Hospital Use, including parking	38,059	44	10/30/2017
HM	Harvard Institutes of Medicine	77 Avenue Louis Pasteur	Hospital Use	112,308	n/a	6/30/2094
HM2	Harvard Institutes of Medicine 8 & 9	4 Blackfan Circle	Hospital Use	52,858	14	7/31/2016
LG	Longwood Galleria/ TIM I	350 Longwood Avenue	Hospital Use	15,027	n/a	12/31/2012
MP	Massachusetts College of Pharmacy	181 Longwood Avenue	Hospital Use, including parking	119,737	40	9/30/2021
NH	Neville House	10 Vining Street	Hospital Use	36,239	n/a	12/31/2017
HRB1	New Research Building (Harvard)	77 Avenue Louis Pasteur	Hospital Use, including parking	159,996	297	9/01/2028
741H	741 Huntington Avenue	741 Huntington Ave.	Hospital Use	1,500	n/a	6/30/2016
651H	651 Huntington Avenue	651 Huntington Ave	Hospital Use	3,000	n/a	1/31/2011
375LW	MASCO Building	375 Longwood Ave	Hospital use	1,200	n/a	7/31/2012
Total				724,690		
<i>Surrounding LMA (4)</i>						
801MA	Crosstown Center	801 Massachusetts Ave	Hospital Use	78,000	208	10/31/2020
BSS	1249 Boylston Street	1249 Boylston St	Hospital Use	20,800	30	12/31/2012
C4	961 Commonwealth Avenue	961 Commonwealth Ave.	Hospital Use	10,052	n/a	1/31/2012
CO	321 Columbus Avenue	321 Columbus Avenue	Hospital Use	2,109	n/a	7/31/2012
HN	116 Huntington Avenue	116 Huntington Avenue	Hospital Use, including parking	26,431	9	6/30/2012
560H	560 Harrison Avenue	560 Harrison Avenue	Hospital Use	1,616	n/a	8/31/2010
LMK	Landmark Center	401 Park Drive	Hospital Use	14,953	n/a	9/30/2010
125P	New England Baptist Hospital	125 Parker Hill Road	Hospital Use	1,631	n/a	12/31/2009
LITH	Lithgow Building	622 Washington Street	Hospital Use	3,101	n/a	8/31/2014
Total				158,693		

(1) Includes Hospital Use and High Impact Sub-uses.

(2) Gross Floor Area of leased space as defined by the City Zoning (excludes FAR excludable areas).

(3) Lease expiration date including options.

(4) Includes Boston properties only. BWH leases additional facilities distant from the LMA and in other communities that are not subject to the IMP.

2.1.4 *Places of Assembly and Worship*

Several places of assembly are located on the BWH Campus. Table 2-3 lists rooms on the BWH Campus that accommodate 50 or more people. An interfaith chapel is located within the main lobby of the hospital at 75 Francis Street.

Table 2-3 **Places of Assembly**

Building Name	Floor	Room	Room Name	Occupancy
Ambulatory Services Building	2	102	Duncan Reid	100
Carrie Hall/Clinics/Pearl	2	CA-238	Carrie M. Hall Conference Rooms	90
Connors Center for Women’s Health	L1	CW-L110	Department of Anesthesia Conference Room	75
Surgery Building	3	SR-330A	Louis Bornstein Family Amphitheater	192
Tower	2	TR2022 & 011	Cafe	220
Shapiro Cardiovascular Center	1	70FR01012	Conference Center	108
Shapiro Cardiovascular Center	1	70FR01010	Break out Room	74
Peter Bent Brigham Hospital	1	Café	Pat’s Place (Restaurant)	55
Tower 1	1	Café	Au Ban Pan	75
Shapiro Cardiovascular Center	1	70FR	O Naturals	85

2.1.5 *Existing Floor Area Ratio*

The 12.8-acre BWH Campus which is co-extensive with the existing BWH IMP Overlay District, contains a total of 2,070,071 gross floor area of building (as defined in the Boston Zoning Code). The existing Floor Area Ratio (FAR) on the BWH Campus is approximately 3.71. Table 2-4 below provides a breakdown of FAR by lot.

Table 2-4 Existing BWH Campus Floor Area Ratio

Parcel ¹	Lot Area		Gross Floor Area of buildings (square feet) ²	FAR
	square feet	acres		
BWH Main Campus ³	380,420	8.73	1,485,445	3.90
221 Longwood Avenue	69,899	1.60	222,494	3.18
70 Francis Street Lot	48,496 ⁴	1.11	346,527	7.15
48 Francis Street	2,880	0.07	2,616	0.91
80 Francis Street ⁵	55,855	1.28	12,989	0.23
Total BWH Institutional Overlay District ⁶	557,550	12.80	2,070,071	3.71

¹ BWH-owned property in LMA

² As defined in the Boston Zoning Code.

³ BWH lots and buildings within Francis/Binney/Shattuck/Huntington.

⁴ The 70 Francis Street lot is 38,547 SF plus 9,949 SF below Francis Street totaling 48,496 square feet or 1.11 acres.

⁵ 219,775 square feet of parking garage is excluded. 80 Francis Street lot area includes the 12,484 sf Binney Street Site.

⁶ All land and buildings owned by BWH in the LMA.

2.2 BWH Campus Context Analysis

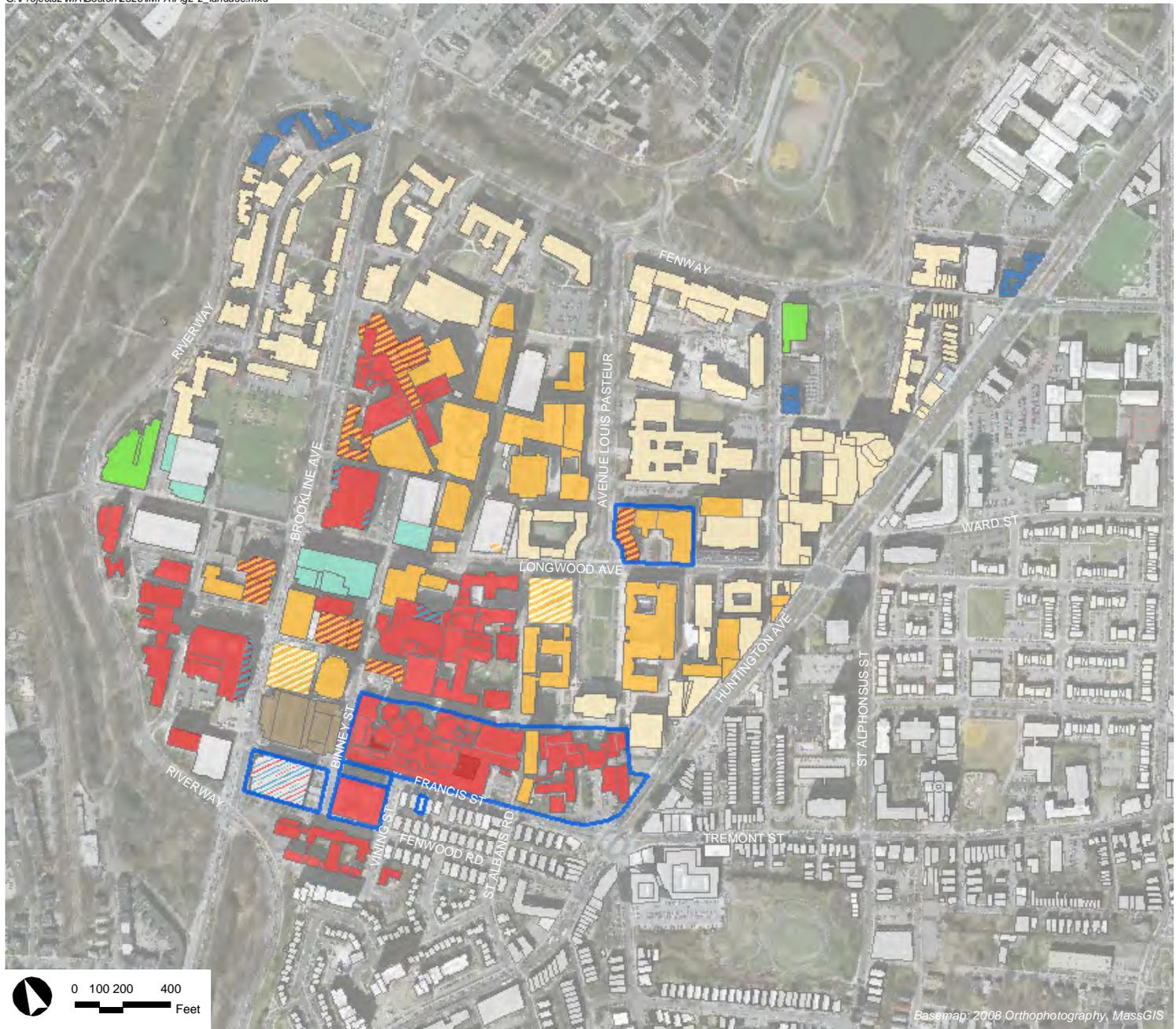
The following sections describe the urban context of the BWH Campus, addressing land use, density, building heights, open space, view corridors, and pedestrian and vehicular circulation.

2.2.1 Land Use Analysis

The LMA is a densely developed area reflecting a unique concentration of medical and academic institutions. Predominant land use in the core of the LMA, shown on Figure 2-2, includes health care, education, and research, with residential and cultural uses along the edges. Figure 2-3 illustrates existing LMA institutions. The LMA abuts the Mission Hill Neighborhood Zoning District, which contains a mix of residential and institutional uses.

The majority of the BWH Campus is located within the LMA boundaries on the north side of Francis Street. On the south side of Francis Street is the Servicer Center located at 80 Francis Street (which includes the site of the proposed Binney Street Building), the Shapiro Cardiovascular Center at 70 Francis Street and 48 Francis Street, as well as a neighborhood of triple-decker residences extending to Huntington Avenue.

As a result of an historic agreement between BWH, RTH, and Harvard University, land swaps and sales occurred that resulted in the relocation of six multi-family homes from the 70 Francis Street site (now the site of the Shapiro Cardiovascular Center) to vacant lots and adjacent blocks in the neighborhood. Part of this agreement provided for BWH to sell almost all its portfolio of neighborhood properties to RTH for \$1 dollar and persuade Harvard to sell its neighborhood properties to RTH as well. The portfolio included 20

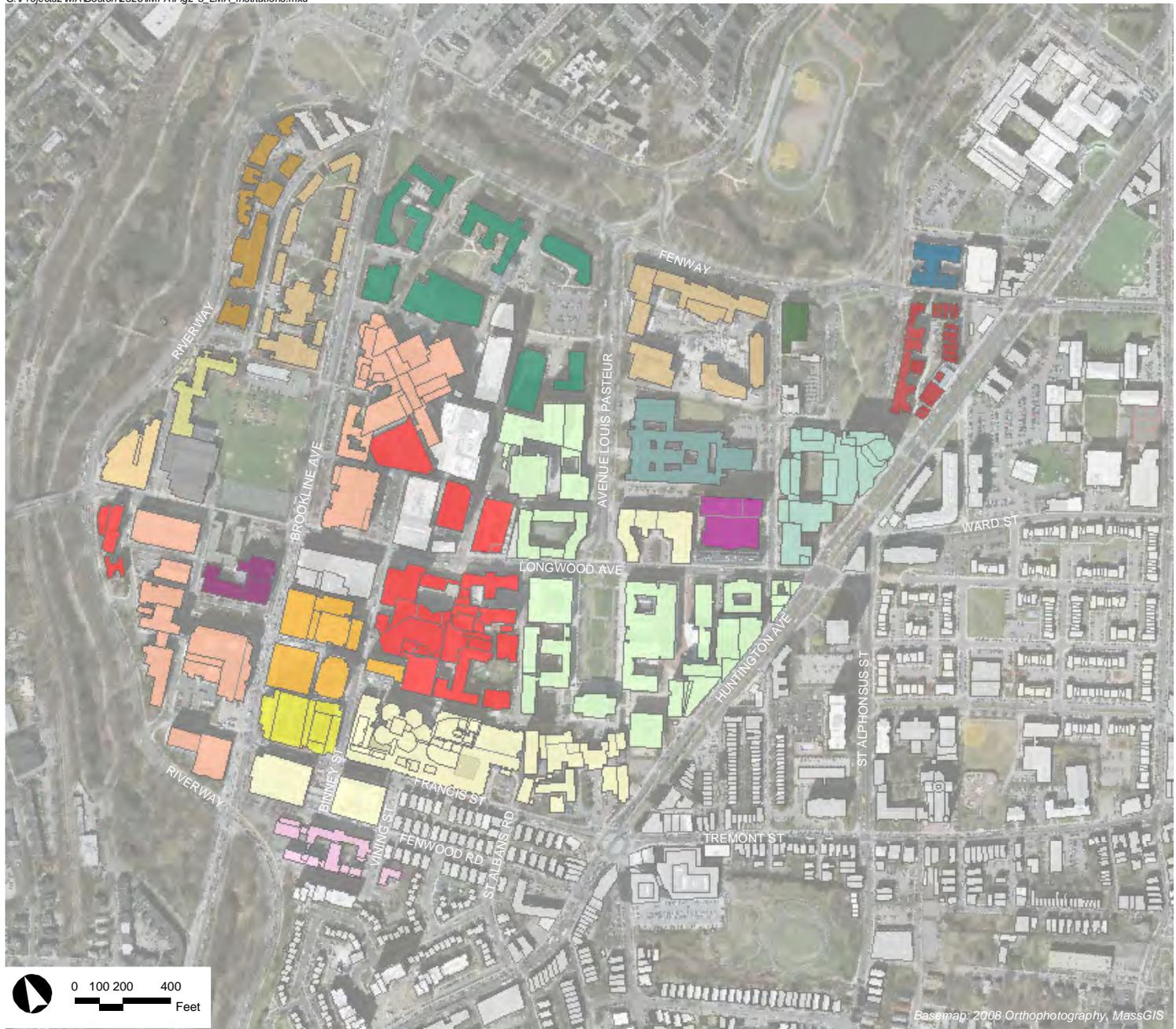


LEGEND

-  BWH Campus
-  Education
-  Research
-  Health Care
-  Housing
-  Cultural / Religious
-  Mixed Use
-  Utility
-  Parking

Source: CHB IMP 01.08, BRA, BWH

BWH 2010 IMP Boston, Massachusetts



LEGEND

- Children's Hospital Boston
- Dana Farber Cancer Institute
- Brigham & Women's Hospital
- Mass Mental Health Center
- Beth Israel Deac. Med. Center
- Joslin Diabetes Center
- Wentworth Institute
- Mass College of Pharm.
- School of MFA
- Emmanuel College
- Mass College of Art
- Boston Latin School
- Harvard University
- Winsor School
- Simmons College
- Wheelock College
- Gardner Museum
- Temple Israel
- MASCO
- MATEP

Source: CHB IMP 01.08, BRA, BWH

BWH 2010 IMP Boston, Massachusetts

residential units and five commercial (retail) units and ground leases on 10 buildings comprising 50 units. As a result of this agreement and a related transaction between RTH and Harvard (acquisition by RTH of ground leases for an additional 31 buildings containing 130 apartments) there is neighborhood ownership of almost all the local housing units. This allows the community control over the future of affordable housing in the residential neighborhood between Brookline and Huntington Avenues. A Mitigation Agreement and a Program Agreement between RTH and BWH were both developed as part of the relocation agreement. The Mitigation Agreement addresses quality of life issues and outlines specific steps for addressing and enforcing problems related to noise, trash, and parking. The Program Agreement is a multi-year commitment by BWH to work with and fund neighborhood programs focused initially on job training for adults and youth and health and wellness initiatives.

To the south of the 70 Francis Street block is the MMHC Site and the site of three of four buildings proposed as part of the MMHC Project including the site of the Brigham and Women's Building. Further discussion of the MMHC Project is included in Chapter 4.0, Proposed IMP Projects, and in the Draft EIR/PIR.

To the west of the BWH Campus is the Medical Area Total Energy Plant power plant serving the LMA area with steam and chilled water. The entire northern edge of the BWH Campus is institutional use including the Dana-Farber Cancer Institute, Children's Hospital Boston, and Harvard Medical School. The eastern edge of the Campus is at Huntington Avenue.

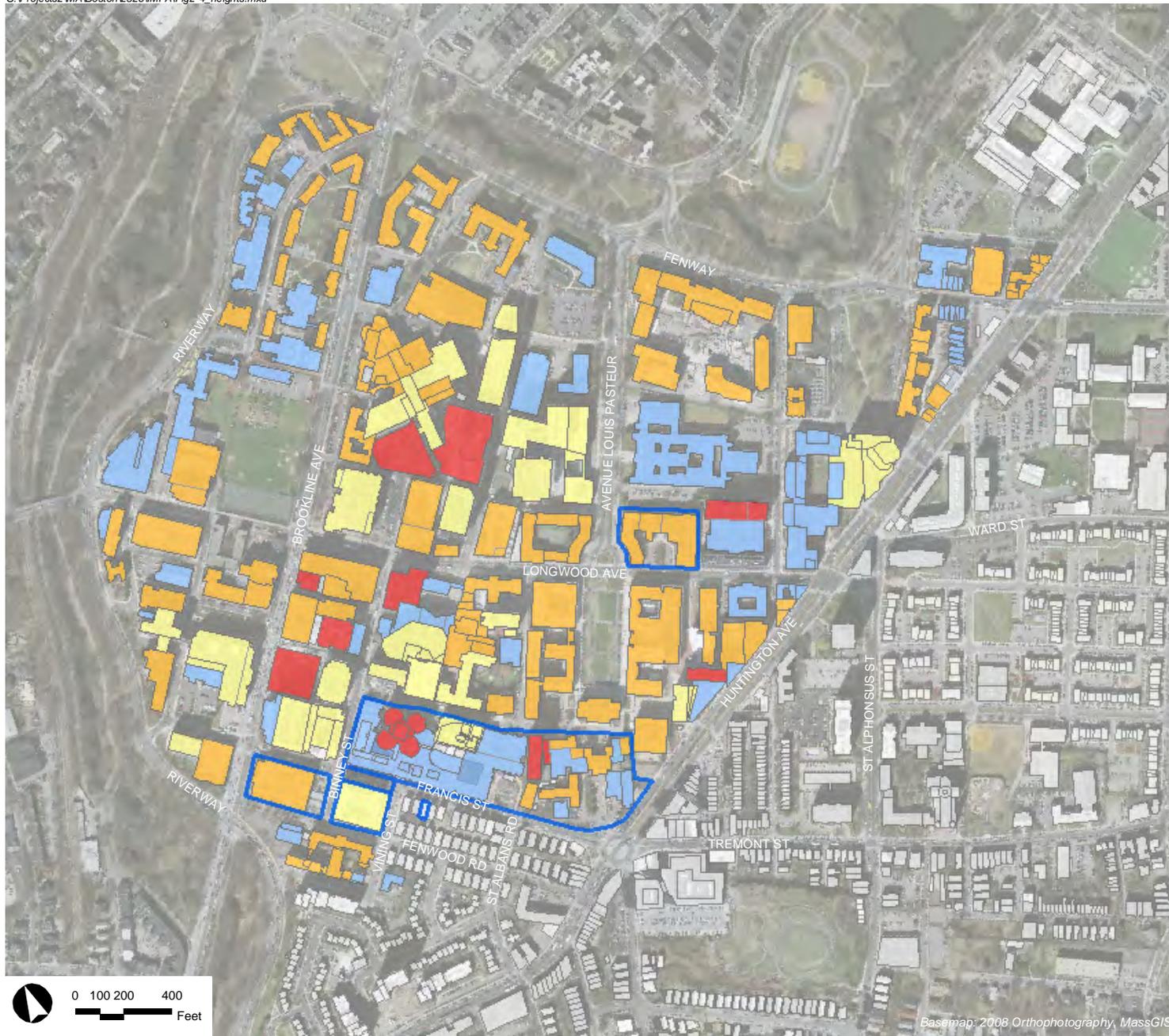
Existing building heights in the area range from one to 27 stories, with most building heights under 13 stories (see Figure 2-4, Existing Area Building Heights). The density of land use in the area, (as measured by Floor Area Ratio), ranges from 0.2 to 9.9 (see Figure 2-5, Existing Area FAR). The BWH Campus falls in the middle of this range.

2.2.2 *Open Space Analysis*

Significant open spaces surround and permeate the LMA and those parts of the Mission Hill Neighborhood which are proximate to the BWH Campus. The Riverway portion of the Emerald Necklace, which is the most significant open space in the area, bounds the LMA along the west and north. The Back Bay Fens also bounds the north and east edges of the LMA.

Open space on the BWH Campus occurs in the following locations:

- ◆ In front of 15 Francis Street the entrance to the original Peter Bent Brigham Hospital. Currently, much of the space is devoted to parking and a central drop-off drive.
- ◆ In front of 45 Francis Street, the ambulatory entry to the hospital. Much of this space is also devoted to a drop-off area and access to the below-grade parking garage.

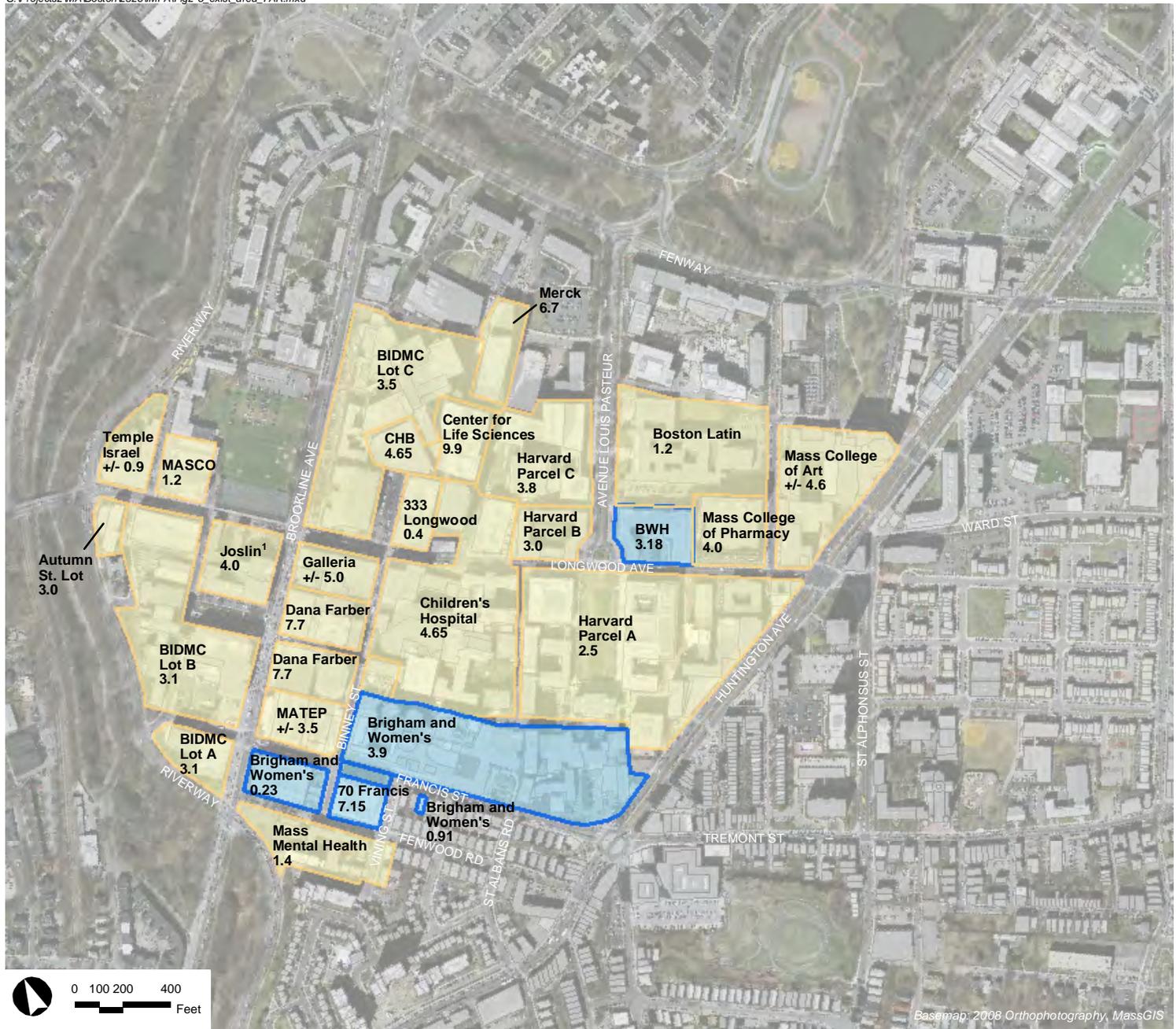


LEGEND

- BWH Campus
- 13+ Story Buildings
- 8-12 Story Buildings
- 4-7 Story Buildings
- 1-3 Story Buildings

Source: CHB IMP 01.08, BRA, BWH

BWH 2010 IMP Boston, Massachusetts



LEGEND

- BWH-Owned Facilities
- All Others*
- BWH Campus
- FAR Floor Area Ratio

***NOTES:**

FARs reflect existing buildings as of January 2009; projects in construction at that time or approved since are not included.

1. Joslin has an approved FAR of 8.2.

Source: MASCO, BWH, BRA



Basemap: 2008 Orthophotography, MassGIS

- ◆ At the rear of 75 Francis Street, off Shattuck Street. Accessible from the main lobby is a paved courtyard area between the lobby and Shattuck Street. This area is entirely for pedestrian use. It is often used by the hospital for small outdoor events.
- ◆ At the newly opened Shapiro Cardiovascular Center. The seating and hardscaped waiting area in front of the building provides shaded seating out of the weather while waiting for shuttle buses.
- ◆ Along BWH Campus edges. The planters and green edge along Binney Street from Francis Street to Shattuck Street offer a little green relief on this mostly hard concrete streetscape. Broad sidewalk and landscaping as well as vistas into the Shapiro Atrium make Vining Street a pleasant green connection between the Mission Park Garage and 75 Francis Street.

Section 3.0

Program Needs and Master Plan/Urban Design Goals

3.0 PROGRAM NEEDS AND MASTER PLAN / URBAN DESIGN GOALS

3.1 Hospital Trends and Future Facility Needs

3.1.1 *Forces for Change in BWH Facilities*

General principles of hospital facilities management suggest that clinical space needs to be renovated, upgraded, or substantially changed to continually provide the highest standard of healthcare, particularly higher acuity care. Academic medical centers like BWH are particularly challenged to provide space which keeps pace with their innovations in healthcare. As described below, the need for new construction and renovation at BWH results from a variety of factors.

- ◆ **Higher Acuity Care and Growth:** Due to the health, age, and other demographics of the patient community, BWH is experiencing an increase in the seriousness of the medical problems it faces every day. More seriously ill patients require more procedures, longer Intensive Care Unit (ICU) stays, more testing and imaging, ultimately creating more pressure on the physical and infrastructure constraints of the hospital's facilities.

Today's patients also suffer from co-morbidities (multiple diagnoses) and chronic conditions that require care in multiple specialties, coordinated care among practitioners and long-term treatment. Treating these patients and coordinating their care requires connectivity of services and space for doctors' offices near service areas. The optimal clinical environment provides adjacencies that align diagnosis, treatment and inpatient facilities, as necessary. With an aging population, combined with enhanced disease detection and diagnosis capabilities, BWH will continue to see a significant number of patients that require visits to two or more departments and need higher levels of care. These trends lead to the need for BWH to organize itself into centers of excellence in various disease classes: Women's Health, Cardiovascular, Oncology, Neurosciences, Orthopedic, etc.

At the same time, BWH is seeing patient volume increasing from 3 to 10 percent per year (depending on the service line) due to the success of BWH's state-of-the-art medical care and BWH's strength of reputation in the Boston medical community.

BWH's service volumes are particularly remarkable considering the small physical size of the hospital. The hospital's approximately 2 million square feet on the BWH Campus serve nearly one million patient encounters per year, and BWH has the highest patient volume-to-area ratio of any hospital in Boston.

- ◆ **New Technology and Changes in Medical Care:** Rapid changes in the diagnosis and treatment of illness are requiring changes to the physical layout of hospital space and utility infrastructure. The pace of innovation is increasing due to considerable investment in the LMA as well as nationally by private corporations,

institutions, and public agencies interested in research. BWH is challenged to continually renovate and expand its aging physical plant to keep up with this dynamic growth in medical knowledge. Examples of how advances in technology and medical care are creating the need for new and renovated facilities include:

- **New Image-guided procedures and minimally invasive surgeries**, many of which have been pioneered and developed at BWH, require larger procedure rooms, more support space, and more power and cooling. At BWH, Interventional Neurology, Magnetic Resonance Imaging (MRI) equipped operating rooms, Hybrid Operating Rooms, focused ultrasound, laser procedures, PET scan, and nuclear medicine are some of the burgeoning technologies all placing great demands on the physical space and infrastructure supporting them. As an example, BWH's lowest level of the hospital, L2, originally used for storage and support services, now houses 48,000 square feet of high-tech image-guided procedure space.
- **Information Systems** - Rapid advance in medical information handling including multi-disciplinary Picture Archiving and Communication Systems (PACS) digital management of radiological images, Longitudinal Medical Records (LMR) electronic handling of medical records, wireless communication, wired and wireless patient monitoring systems, etc., require new telecommunications networks be built in the hospital and additional space allocated for telecommunications support and equipment.
- **Inpatient trends that require additional clinical/office support:** Inpatient trends that require more single rooms for better privacy and more intensive care patient rooms create great demand for more space for patient rooms, which require that other hospital functions be reduced in size or be developed elsewhere.

The emerging standard of care requires the creation of more single rooms particularly with the higher acuity patient care predicted at the hospital. As space is a fluid commodity in a hospital, an increase in space available for one service can help relieve stress for space demands in other service areas. For example, growth in available space in research on-campus could allow a testing function to relocate from space which could then be used to decompress inpatient beds. Similarly being able to relocate clinical space can provide space to grow faculty office space in the backfill.

- ◆ **New regulations:** Hospitals are subject to a myriad of local and national regulations promulgated by the city, state, and federal governments. Hospitals are also subject to review by professional organizations such as the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) and the National Institutes of Health. These requirements are subject to continual change as codes become more and more restrictive and new public safety issues are identified. Examples of the facility implications of new regulations at BWH include:
 - Heating Ventilation and Cooling (HVAC) systems once thought to be adequate no longer meet requirements for newly built research and clinical space;

- Increasingly comprehensive state and federal regulations (New ADA regulations are coming out this year) to provide access for the disabled expand the hospital's responsibility to accommodate all forms of disability including retrofitting older non-compliant buildings. Fire alarm systems, wayfinding and medical equipment are a few of the areas which will be updated.
 - Health Insurance Portability and Accountability Act regulations require consideration of the privacy of medical information and patient care in the form of separate check-out/consult rooms, "voice private" waiting areas, visual screens, sound proofing, alteration of work stations to screen computer terminals from view, segregation of clinician work areas from patient and family accessible areas, etc.;
 - JCAHO has instituted a new "Tracer" methodology for inspection of hospitals under which inspectors follow a patient through a complete care cycle rather than separately inspecting individual clinics; this inspection method may result in recommendations for improvements in horizontal and vertical circulation or other physical changes;
 - JCAHO has recently revised pharmacy requirements to include ISO 5 clean rooms requiring new ventilation systems and additional space for HVAC; and
 - New awareness of the need for emergency preparedness influences BWH's facilities' operations and planning as well as the provision of space for disaster preparedness equipment; and
 - Regulations in the City of Boston require buildings subject to Large Project Review (Article 80B) to be LEED Certifiable.
- ◆ **Market and payer changes:** BWH exists in an environment of a rapidly changing market for health care. Managed care; rising medical costs; insurance reimbursements, as well as changes to the Medicare and Medicaid systems cause changes in the way BWH delivers health care. The changes can be sudden and dramatic and often have significant impact on the clinical environment. New healthcare legislation pending in the Congress will likely cause changes in the way BWH delivers healthcare and provides the facilities BWH will need to support those changes.

3.1.2 *Facilities Condition and Challenges*

BWH's existing physical plant is a collection of medical, academic, research, and office buildings which were, with the notable exceptions of the Connors and Shapiro Centers, constructed mostly for a different era of health care. Modern health care planning demands large floor plates; large aggregation of horizontal and vertical adjacencies, high floor-to-ceiling heights, large structural bays, plenty of room for HVAC and mechanical systems and the flexibility to accommodate rapid change and growth. Financial pressure dictates buildings be efficient both in space usage and energy consumption. Facilities should be

functional and orderly with efficient connections between services, pleasant for patients and staff, and easy to clean and maintain.

With the exception of the Connors Center for Women and Newborns and the Shapiro Cardiovascular Center, BWH's current building inventory, including, in particular, the Tower Building, requires updating in substantial ways:

- ◆ **Clinical space to support space ratios:** BWH's Tower Building was planned with a rigid cloverleaf layout of four 4,500-square-foot "pods" of patient units and a support core of 2,000 square feet. The resulting plan provides only 20,000 square feet for 40 to 64 beds depending on the number of double rooms. That translates to 312 to 500 square feet per bed, far below current benchmarks for academic medical centers of 750 to 1,000 square feet per bed. There is insufficient support space for nursing and limited family space.

The Tower Building's form has also proven to be very limiting in responding to the changing needs of a healthcare environment. The radial floor plates are inefficient for nursing and costly to renovate and work in. Modern health care is characterized by larger volumes of patients and staff, higher staff density; and more intensive care. There is no practical way to solve this problem without decompression. The addition of new clinical space on the BWH Campus would take pressure off the Bed Tower and other procedure spaces allowing flexibility not currently existing on-campus.

- ◆ **Research space and dry support areas:** BWH-based research expenditures have been growing at 5% per year and the total research expenditures for FY 2009 are projected at \$468 million. BWH needs additional research space to maintain its leadership in medical research. Expanding research needs requires retaining and attracting new researchers to BWH. These researchers also serve as doctors and educators and prefer connectivity between research space and clinical centers. In addition to wet lab space therefore, an essential part of successful research is the ability to provide adequate dry space in close proximity to research areas for faculty, fellows, research assistants, monitors, students, and associated dry research functions. With the expiration of several leases in buildings owned by Children's Hospital Boston and the Dana Farber Cancer Institute, BWH recognizes the need for new research space on its campus proximate to clinical areas.
- ◆ **Efficiency:** Some of BWH's older buildings, such as the Radiology Building, have efficiency ratios of only 50 percent, which means that 50 percent of the building is devoted to corridors and stairs. Modern buildings aim for 75 percent efficiency or higher. New buildings designed to higher efficiency standards would ease pressure on existing spaces and thereby increase existing efficiencies.

- ◆ **BWH Campus Adjacencies.** Due to the layout of the BWH Campus along the length of Francis Street and the Shapiro Cardiovascular Center on the south side of the street, the hospital has particular challenges creating the adjacencies needed for modern health care. Operating rooms need to be close to recovery space and Intensive Care Units; imaging needs to be near inpatients; interventional procedure space needs to be near both; clinical support space needs to be close to everything; and ambulatory care, which utilizes imaging and procedure space, cannot be too far away either. Patients with comorbidities need to be proximate to specialists that can address all their diagnoses. Staff and patient/family facilities should also be adjacent to one another. BWH doctors serve as physicians, educators and researchers. In serving these multiple roles, doctors need to be close to patients, research facilities, and their own offices.

- ◆ **Infrastructure:** BWH has struggled to keep utility infrastructure up to the challenges of modern care. BWH has expanded its HVAC systems to provide the 20-30 air changes per hour required for additional air and better infection control in its state-of-the-art operating rooms and the high air filtration rates needed for ambulatory care. BWH has expanded its power capacity to provide for the latest in high tech imaging, Magnetic Resonance Imaging, Positron Emission Tomography and Computed Tomography (PET/CT), radiation therapy, etc. BWH's medical gas system has been upgraded to meet the higher demand of sicker patients and Intensive Care Units. BWH has built clean environments for cancer patients with the associated High Efficiency Particulate Air (HEPA) filtration. All this has been difficult and expensive, and BWH has reached a diminishing return on how much it can upgrade its aging plant. New buildings would not rely on the stressed plant and would in fact allow for decompression of the intensity of uses on the existing, older infrastructure.

- ◆ **Imaging and Procedure Space:** The future of health care indicates that there will be a better integration between imaging and procedures. The operating room of the future will have sophisticated radiographic and imaging equipment. The imaging room of the future will have extensive capability for minimally invasive procedures. Both rooms will be much larger and need more mechanical, clinical and staff support than present. BWH's existing buildings require costly, disruptive and time consuming upgrades to accommodate these needs. New clinical space would provide flexibility for where and when these intensive high end procedural spaces are built.

3.1.3 *Facilities Needs, Facilities Planning, and Proposed New Spaces*

3.1.3.1 *Facility Needs and Shifting Uses*

BWH's recent opening of the Shapiro Cardiovascular Center and renovation of inpatient units in the Tower were major steps forward in addressing the hospital's goal to provide a

modern academic medical center with state-of-the-art patient care, education, research, and service to the community it serves. However, the remaining buildings on the BWH Campus have a wide range of conditions and usefulness. It is increasingly challenging to provide the highest level of patient care in the existing buildings' current configuration and density.

As space is a fluid commodity in a hospital, an increase in space available for one modality can help relieve stress in all service areas. The addition of new space on the BWH Campus is needed to ensure the continued standard of care BWH is known for, by allowing introduction of new modern space, subsequent shuffling of existing uses, and renovation and upgrade of stressed service lines - all allowing for more efficient use of space. For example, growth in available space for research in a new building will allow research space in existing spaces to relocate which could allow a testing function to relocate from space which could then be used for inpatient beds.

A specific example would be relocating research labs on the second floor of the Thorn Building to the new Brigham and Women's Building. The neurological testing clinic located in the Tower Building could then replace the vacated space in the Thorn Building. This shift would create an empty pod in the Tower Building which could be used to house ten new private cancer beds to meet future projected growth in demand for inpatient cancer treatment beyond the 110 beds currently being commissioned.

Similarly being able to relocate clinical space into a new building could provide space to grow faculty office space in the backfill. For example, BWH's Centers of Excellence that require expansion space in the future would be well served in the new Brigham and Women's Building. The resulting vacant space would be ideal for faculty offices as it is an older building not well suited for high technology clinical uses but is quite appropriate for Harvard faculty's office space needs.

3.1.3.2 Facilities Planning

The need for new space is clear based on the trends described in Section 3.1.1. Determining the best use for new space and the reallocation of existing spaces required BWH to conduct several detailed planning studies to identify its specific programmatic and physical needs for new space and to define its proposed facility improvement projects.

The BWH's desire to maintain the highest levels of patient care and the desire to expand translational research and clinical care in a contiguous location led to a planning effort in 2006 which more specifically defined programmatic and physical needs which would be met by the IMP Projects. This master planning initiative was launched concurrently with the Commonwealth's desire to develop the Main MMHC Site to serve the State's own mental health care needs and support the needs of the LMA academic, scientific and healthcare communities. Extensive review of alternative development possibilities led to the proposed clinical and research program for the MMHC Project Site, a portion of which

will be included within the BWH Institutional Overlay District by virtue of the adoption of the BWH 2010 IMP. The MMHC Project Site offered the advantages of not displacing existing uses, redevelopment of an underutilized site and enabling other BWH Campus renovations and upgrades in backfill space.

As one of the country's leading recipient's of NIH grants, and mindful of anticipated termination of leased research space and growth of research programs, BWH determined that new research space on the BWH Campus is essential. This increased demand for research space also increases demand for dry support spaces.

In addition to research space, BWH has determined that new clinical space is required on the BWH Campus. Existing hospital functions are densely housed within the BWH Campus's approximately 2 million square feet. Extensive numbers of administrative staff and ambulatory care functions have already been moved to sites remote from the BWH Campus, including sites outside the LMA both in Boston and Brookline, and the hospital intends to continue to move additional ambulatory and administrative functions in the future to the extent practicable. However, not all of these service lines and support areas can be relocated off of the BWH Campus. Additional space for patient care is still required on the BWH Campus due to the size and acuity of the BWH patient base, comorbidities requiring treatment from multiple service lines, and the physical space requirements dictated by hospital regulations and new technology.

BWH, as a leading provider of healthcare services, seeks to develop and expand the BWH Campus in line with its goal to always have available the best facilities for its clinical teams. There is a complex interaction of factors that influence the demand for healthcare services. Some of the factors, such as the number of insured and demographic trends, result in increased demand. Other factors, such as expansion of other medical institutions, may decrease demand. The net result is, however, a continuing increased demand for healthcare services, and amongst acute care hospitals providing tertiary care, an increase in acuity of services demanded and the need for space to meet those needs.

With every indication showing that BWH will continue to see increased demand for its services, the hospital must continue to plan for increased clinical volume and for updating clinical and research facilities – including research and clinical care, diagnostics and treatment, therapeutic and clinical support services. With increased demand for services comes increased demand for space for all functions of the hospital. As previously described, demand drivers include the age of the facilities and the need to replace obsolete infrastructure, the demands of new codes, regulatory requirements and standards, as well as more activity in inpatient, clinical, diagnostic and treatment spaces due to new diagnostic technologies and therapies.

While modest growth is forecast for the overall population of Boston and Massachusetts, the significantly aging population generates a greater demand for services. Incidence and capability-driven growth comes from the development of new technologies and therapies

improving the ability to successfully intervene in prevention or treatment of disease. Consumer-driven growth reflects the pressure on the healthcare industry to provide greater responsiveness to consumer demands for amenities, choice in treatment options and inclusion of the family in the healing process.

A thorough system-wide planning effort based on the input of numerous hospital task forces concluded that the hospital required new on-site clinical and research spaces of approximately 300,000 sf (approximately 170,000 sf clinical uses, 150,000 sf of new research space and 8,000 sf of faculty/administrative space). These new spaces create needed flexibility in all hospital care and educational modalities on the existing BWH Campus.

The expansion space will accommodate the identified need for state of the art research space and clinical expansion. Research is by its nature dynamic in its growth and contraction, therefore BWH is likely to continue to see requirements for laboratory space rise and fall depending upon funding sources and available personnel in specific fields of intellectual interest over the coming decade.

3.1.3.3 Proposed New Spaces

The new research, clinical and support (dry office/administrative) uses are proposed within the two IMP Projects, the Binney Street Building and Brigham and Women's Building. The Binney Street Building will include both clinical and administrative/faculty offices. The Brigham and Women's Building includes clinical and research uses. These IMP Projects meet the needs identified above and respond to ongoing trends in health care.

Research - The Brigham and Women's Building will provide a permanent base for the Biomedical Research Institute (BRI), a new research collaborative based at BWH and the Harvard Medical School, with the Binney Street Building also offering support to that mission. The BRI brings together world-class scientists and clinicians under the umbrella of a comprehensive and coordinated research effort. The BRI's mission is to accelerate the pace of scientific discovery by fostering groundbreaking, interdepartmental and interdisciplinary research among the hospital's research community, as well as to provide a clear voice for all BWH researchers.

The BRI encompasses all members of the BWH research community, including but not limited to trainees, nurses, physicians and scientists, across all departmental affiliations.

Specifically, the Brigham and Women's Building will provide expansion space to meet the increased demand for wet lab research supporting the BRI. BWH-based research expenditures have been growing at 5% per year and the total research expenditures for FY 2009 are projected at \$468 million. BWH needs this new space to maintain its leadership in medical research.

The Brigham and Women's Building will allow for the consolidation of a research core on the BWH Campus adjoining the clinical areas. In addition, BWH currently leases space in buildings owned by Children's Hospital Boston and the Dana Farber Cancer Institute. These leases will expire in the next few years and BWH hopes to be able to reassign these researchers into space in the Brigham and Women's Building or other appropriate spaces which will become available within the BWH Campus by virtue of the new development during the course of the BWH 2010 IMP.

An essential part of successful research is the ability to provide adequate dry space for faculty, fellows, research assistants, monitors, students, and associated dry research functions. The Binney Street Building's location is ideal because these functions need to be located close to the existing research and clinical centers and will allow the successful use of the Brigham and Women's Building as research space.

Higher Acuity Care and Growth/Inpatient Trends that require additional clinical/office support - A significant portion of the Binney Street Building and Brigham and Women's Building will provide space for needed clinical care expansion either in synergy with translational research in the BRI, or to fulfill other institutional and community goals. The Brigham and Women's Building and the Binney Street Building will be available to meet the demand created by clinical and research need for new space, and to ensure the future of BWH as one of the country's leading academic medical centers. BWH's acute need for space to accommodate clinical growth has been temporarily met with the opening of the Shapiro Cardiovascular Center. The Brigham and Women's Building, and ultimately the Binney Street Building, will provide BWH with the flexibility to deal with the demands for more clinical, research, teaching and support space and infrastructure.

The addition of the approximately 350,000 sf of additional research and clinical space in the Brigham and Women's Building and Binney Street Building will provide the hospital with flexibility as to which spaces need updating. The Binney Street location is particularly valuable due to its proximity to BWH's inpatient centers. Space in the Binney Street Building will allow decompression of overtaxed clinical support space and expansion of clinical space to support patients. There is no room in the Tower to add beds that will be needed in the future without relocating non-bed functions like In Vitro Fertilization, neurological testing, sleep labs and clinical research units out of the Tower directly into the Binney Street Building or into backfill created by the Binney Street Building. For example, relocating dry research functions out of 221 Longwood would make this wet research space available to the research groups who most need this space but lack accessibility. This move would in turn create space to relocate the clinical research group out of the Tower Building which would in turn allow space for 10 new private in patient rooms with family space in place of existing clinical functions.

Every square foot of space gained in the Binney Street Building and Brigham and Women's Building helps the entire institution to function more efficiently and to provide higher quality, more family-centered care to the Boston families, others in the region and those

around the world. The thousands of patients and families who depend on BWH to solve the most challenging medical problems will benefit from the BWH's ability to maintain, improve and grow the facilities that enable BWH to best serve them.

Campus Adjacencies - BWH is near completion of a 10 year process of relocating clerical support staff, information technology, finance, human resources, and dry research personnel away from the crowded LMA into appropriate office space at Crosstown Center and other sites in Brookline, Wellesley, Needham and Cambridge. There are simply no other groups that can function remotely from the hospital. The current need is for increased space in close proximity to the inpatient care, clinical research and educational centers in the LMA. This space is essential for BWH is to continue to serve the growing demand for clinical services and maintain BWH's reputation for excellence in the Boston medical community

In meeting the need for improved campus adjacencies, the IMP Projects respond by providing research uses in the same building as clinical uses. The research space in the Brigham and Women's Building will provide the required adjacency for doctors and scientists working in the research arena of BWH's clinical centers of excellence. The Brigham and Women's Building bridge and tunnel connections will allow for quick and easy access to patients, clinical infrastructure and to the teaching spaces.

The Binney Street Building will be particularly valuable to BWH due to its central location adjacent to the Shapiro Cardiovascular Center and the BWH's other buildings along Francis Street. It is close enough to the inpatient centers to provide decompression space for inpatient support functions such as care coordination offices, anti-coagulation support service, interpreters, dietary and nutritional staff, nursing education, and respiratory therapy staff. This makes BWH's existing inpatient units more efficient and less crowded and creates backfill space in the Tower to expand inpatient beds as needed.

BWH's two lower levels that are most vital for service and patient care (L1 and L2) only extend from the western end of the BWH Campus at Binney Street to the center of the BWH Campus. Even if BWH had suitable space at the eastern end of its Campus, it would be too far away for many of the hospital's patient care needs. The provision of the tunnel and bridge across Fenwood Road to the Brigham and Women's Building brings the additional approximately 150,000 sf of space in proximity with the major imaging, procedural and Operating Rooms centers on the existing BWH Campus. Furthermore, the provision of approximately 150,000 sf of additional research space, joined by bridge and tunnel connections, will afford the researchers more efficient access to subjects and patients, resulting in significant improvements in patient care.

Efficiency –The IMP Projects will be modern buildings that aim for 75 percent efficiency or higher, and the Brigham and Women's Building and Binney Street Building have been designed to that standard.

Infrastructure - The addition of the approximately 350,000 sf of new, state-of-the-art research and clinical space in the Brigham and Women's Building and Binney Street Building would allow for decompression of the intensity of use on the existing, older infrastructure.

Imaging and Procedure space - The addition of approximately 150,000 sf of additional clinical space will provide BWH flexibility around where and when much needed and highly sophisticated procedural spaces, whose operations require a greater dedication of space than with existing facilities, are built.

3.1.4 Conclusion

BWH needs to improve and expand its facilities by constructing new state-of-the-art research and clinical space, leasing space off-campus for uses that can be separate from the BWH Campus, (which will allow existing uses to decompress), and performing upgrades and additions to existing buildings. The Brigham and Women's Building and the Binney Street Building are required on the BWH Campus to support BWH's mission as a leading academic center. These buildings will allow BWH to provide new, optimal facilities and infrastructure for clinical, research and teaching facilities which underpin BWH's patient care, scientific investigation and educational missions.

3.2 Planning Goals

The ultimate goals of all BWH facility initiatives are to improve the quality of the patient care environment, enhance patient comfort and ensure convenient access to BWH programs. BWH's collateral missions involving medical education, research and community service also affect the composition and configuration of BWH Campus facilities. Consequently, this BWH 2010 IMP will address the needs of patients and clinicians, students, researchers and the community at large. These goals will inform the planning process and influence the development of facilities.

Like most academic medical centers in Boston, BWH has an imperative to optimize the utilization of its on-campus facility capacities while anticipating, and providing space for, new programs, technologies and clinical practice patterns. BWH's planning strategies reflect this reality.

- ◆ *Practice shift from inpatient to ambulatory programs.*
- ◆ *Functional correction and decompression.*
- ◆ *Operational improvement.*
- ◆ *Roll out new healthcare technology.*
- ◆ *Reuse and upgrading of existing space.*

- ◆ *Relocate less acute health care closer to suburban patient populations.*
- ◆ *Create excellence centers.*
- ◆ *Encourage translational research – “Bench to Bed” so patients benefit from new discoveries.*
- ◆ *Improve access for disabled patients and families.*
- ◆ *Use Green building technology.*
- ◆ *Support medical education and incorporate new simulation training technology.*
- ◆ *Attract world class doctors and clinical staff with state of the art facilities and research opportunities.*

The IMP Projects meets the demand for expansion of research and teaching facilities and expanded clinical care, as well as serving the hospital’s institutional planning strategies.

3.3 Future Population Projections

3.3.1 Patients

In FY 2008, BWH experienced a total of 45,617 inpatient visits and 753,091 outpatient visits at its facilities in the LMA. Additional patient visits occurred at BWH’s non-LMA facilities in Brookline and other communities.

Both inpatient and outpatient activity are expected to increase from 2009 to 2019. Inpatient activity is projected to increase at an annualized rate of approximately 1.7 percent. Outpatient activity is projected to increase at an annualized growth rate of approximately 2.2 percent through 2020 at BWH’s facilities in the LMA as shown on Table 3-1.

Table 3-1 Existing and Projected Patient Activity at the BWH Campus

	Projected FY 2009	Projected FY 2020	Total Growth 2009- 2020	Projected Growth Rate 2009 – 2020
Inpatient Admissions	46,340	55,781	9,441	1.7%
Outpatient Visits	770,084	968,784	197,980	2.1%

BWH also anticipates substantial growth in outpatient visits at its facilities outside the LMA. At its leased facilities in Brookline, BWH projects that ambulatory visits will increase by slightly under four percent each year through 2020. Patient visits are expected to grow by two percent at BWH’s two community health centers in Boston, Southern Jamaica Plain and Brookside.

3.3.2 Employees

BWH is a major institutional employer of Boston residents. With a workforce of approximately 14,288 total employees, and 12,894 employees in the Longwood Medical Area itself, current data indicate that approximately 37%, or 4,817 of employees working in the LMA are Boston residents.

BWH employs approximately 12,894 FTEs at its facilities in the LMA. Over the next ten years, BWH expects employment at its facilities in the LMA to grow at an annualized rate of approximately two percent. This level of growth would result in approximately 2,824 new FTE positions being created in the LMA by 2019.

Table 3-2 depicts existing and projected future employment in the LMA at BWH from FY 2009 through FY 2019.

Table 3-2 BWH Existing and Projected Employment in the LMA

BWH Employment in the LMA	Existing FTEs 2009	Projected FTEs 2014	Projected FTEs 2019	Total FTE Growth 2009-2019	Annualized Growth 2009-2019
Non Research Employment	10,576	11,677	12,892	2,316	2%
Research Employment	2,318	2,559	2,826	508	2%
Total Employment	12,894	14,236	15,718	2,824	2%

3.4 Master Plan Goals

BWH has established master plan goals and implementing objectives to guide the future physical development of the BWH Campus.

Master Plan Goal #1: Enhance Pedestrian Circulation and the Pedestrian Experience

BWH and its predecessor hospital, the Peter Bent Brigham Hospital (PBBH), have occupied the long block that is generally bounded by Huntington Avenue, Francis Street, Binney Street and Shattuck Street since the PBBH was opened in 1913. Since the construction of

the Amory Building in 1979, 75 Francis Street has been considered to be BWH's main entrance. The 75 Francis main entry point to the BWH Campus was enhanced to accept the patients and visitors to BWH's Shapiro Cardiovascular Center, which is accessed via a bridge over Francis Street. 45 Francis Street is the major entry point to the ambulatory care clinics of the hospital. While pedestrian activity originally focused on the main hospital entrance at Brigham Circle, over time, pedestrian activity has also dispersed westward along Francis Street to the hospital's entries at 45 and 75 Francis Street. Internal east-west pedestrian movement occurs along the internal "Pike" located at the second level (Level 2) of the BWH Campus and now extends, via bridge, across Francis Street into the Shapiro Cardiovascular Center. The IMP Projects in turn extend the Pike via a proposed bridge into the third floor of the Brigham and Women's Building, for access to the clinical functions as well as the planned conference center. North-south pedestrian movements through the BWH Campus are available at two points, 15 and 70-75 Francis Street. The IMP Projects will add further access points, via the Brigham and Women's Building, from the streets on the southwestern edge of the BWH Campus.

- ◆ *Implementing Objective: Improve the pedestrian experience and pedestrian environment on the Fenwood Road/Vining Street/Binney Street (southwestern end of BWH Campus) section of the BWH Campus; improve pedestrian access at the hospital's 15 Francis Street entry and pedestrian movement north-south through the BWH Campus between Francis Street/Huntington Avenue and Shattuck Street.*

The streetscape improvements on Fenwood Road, Vining Street and Binney Street, including the addition of the landscape path between the Brigham and Women's Building and the Residential Building will serve to soften the impact of the built environment, while reclaiming currently significantly under-utilized urban spaces. The Binney Street corridor will provide the pedestrian an early view of the Riverway, with access to the Riverway being along Fenwood Road to Brookline Avenue. The bridge from the Brigham and Women's Building – connecting to the Shapiro Center and thus to BWH's main wayfinding thoroughfare; the Pike – will enable the efficient movement of pedestrians approaching the hospital from the south to their final location. This same internal pathway provides covered access to the Riverway for many of the LMA's institutions.

Enhancement of the green space in front of 15 Francis Street at the Peter Bent Brigham Hospital building will strengthen the pedestrian link between Francis and Shattuck Streets – leading on to the other institutions in the LMA - at the eastern end of the BWH Campus and greatly improve the pedestrian's arrival experience from Huntington Avenue/Brigham Circle. These improvements will result from the previously-approved Brigham Green Enhancement project (see Section 4.1.2).

- ◆ *Implementing Objective: Maintain the integration of the BWH Campus by continuing the "Pike" at Level 2 (the second level) in new construction.*

The Pike simplifies the patient's internal pedestrian experience at the hospital and provides crucial connections for hospital staff while maintaining visual links with the surrounding environment. The extension of the Pike wayfinding system over Fenwood Road will provide a direct link at the southwestern end of the BWH Campus into the Mission Hill community, and enhance access to the Emerald Necklace.

Master Plan Goal #2: Reinforce the hospital's institutional identity and wayfinding.

As incremental growth has occurred on the BWH Campus, efforts to architecturally establish the hospital's identity and to facilitate wayfinding via signage have experienced mixed success. BWH's IMP Projects will help to achieve this master plan goal.

- ◆ *Implementing Objective: Improve the hospital's identify at both ends of the BWH Campus, and continue growth using the Pike as an organizing principle.*

The Brigham and Women's Building and Binney Street Building, along with the recently completed Shapiro Cardiovascular Center and BWH's acquisition of the Servicer Center Complex will establish the southwestern BWH Campus edge, with enhanced frontage on Fenwood Road, Vining Street, Binney Street, and, via the Service Center, Brookline Avenue, strengthening the hospital's image and identity at this end of the LMA. This will provide the ability for a patient or visitor to access the BWH Campus at the Brigham and Women's Building or Shapiro Center, and internally circulate to their appointment or visit via the Pike system.

At the eastern edge of the BWH Campus, the previously-approved Brigham Green Enhancement and Parking in front of 15 Francis Street at the Peter Bent Brigham Hospital building will strengthen the hospital's image and identity creating a clearly identifiable landmark and entry point at this key interface with the mass transit system. In addition, landscape improvements will provide a greatly improved pedestrian entry into the BWH Campus while creating an attractive green space for informal use by the public, patients, families and staff.

- ◆ *Implementing Objective: Continue BWH's goals for wayfinding for existing buildings and extend to proposed IMP Projects*

A clear plan for wayfinding is essential to help visitors traveling by car or foot to easily identify their destination. Signage for the Brigham and Women's Building and the Binney Street Building (when vacated by DMH) will incorporate the BWH logo and entrances will be clearly marked.

Master Plan Goal #3: Improve the Visual and Physical Integration of the Hospital with Adjacent Neighborhoods along BWH Campus Edges

Facilities growth on the BWH Campus has allowed for the incremental expansion of important patient care services and research and education activities. A goal of future development will be to ensure that future growth not only achieves the hospital's patient care, education, and research objectives, but also is contextually appropriate with the surrounding neighborhoods.

- ◆ *Implementing Objective: Maintain Neighborhood Scale along Vining Street and Fenwood Road.*

BWH will mediate the scale of future projects through setbacks, stepbacks, visual corridors, and other building design elements along Vining Street, Binney Street and Fenwood Road.

- ◆ *Implementing Objective: Improve the hospital's direct frontage with the Mission Hill community and the Huntington Avenue Frontage*

The redevelopment of the Main MMHC Site on Fenwood Road allows BWH to present a fresh, elegant face to the Mission Hill community. Through the use of modern building materials, streetscape improvements and pedestrian enhancements, the Vining Street, Fenwood Road and Binney Street corridor all provide opportunity for the BWH Campus to relate with its adjoining community of high rise and multi-family housing. The landscaped path and open space to be developed between the Brigham and Women's Building and Residential Building (described in greater detail in the Draft EIR/PIR for the MMHC Project) affords an opportunity to visually draw the Riverway closer to the community and BWH's Campus.

The previously-approved Brigham Green Enhancement project will improve the hospital's frontage on Huntington Avenue and Francis Street and facilitate neighborhood connections across Huntington Avenue to the hospital and other LMA institutions.

- ◆ *Implementing Objective: Improve the hospital's aesthetic appeal.*

By carefully considering materials selection, massing and design, and through streetscape improvements and the provision of a landscaped path/open space between the Brigham and Women's Building and the Residential Building, the hospital seeks to improve the integration of the Hospital's built environment visually into the context within which it resides. The goal is to reduce discordant elements and improve the contextual response to both the residential neighborhood and the

institutional buildings surrounding the BWH Campus to move towards an appealing grouping of buildings in harmony within the BWH Campus and environs.

- ◆ *Implementing Objective: Improve access from Huntington Avenue near Brigham Green*

The vehicular entry for drop-off and parking will be moved as far to the west along Francis Street as possible to improve traffic conditions at Brigham Circle. The existing drive extends directly off the circle itself. In addition, to reduce traffic on Francis Street, a one-way connector within the BWH Campus is proposed from 45 Francis Street to the new 15 Francis Street garage. This will allow valets to take cars from the 45 Francis Street entry to the new parking garage without having to travel on Francis Street.

Master Plan Goal #4: Expand and Enhance BWH Campus Green Space

Focused on its mission of patient care, education and research, BWH has created a dense array of hospital facilities that provide space for its world-class activities. Exterior open space is currently limited to the areas in front of 15 and 45 Francis Street, which are largely devoted to parking and/or driveway area; an area of plantings and benches on Shattuck street opposite Harvard Medical School; a courtyard at the rear of 75 Francis Street known as the Cohn Courtyard; the pedestrian sidewalk and benches in front of 70 Francis Street and 75 Francis Street.

- ◆ *Implementing Objective: Enhance Green Space*

The addition of the landscaped path/open space between the Brigham and Women's Building and Residential Building will provide additional green space at the southwestern end of the BWH Campus. Furthermore, this pedestrian amenity will offer a view of the Riverway that is not available today with the existing, vacant MMHC buildings currently blocking that view. The streetscape improvements at 20 Vining Street (the DMH Partial Hospital/Fenwood Inn) and the Binney Street Building, including plantings and street trees, will help to soften the built environment.

In addition, a widening of sidewalks at the Brigham and Women's Building and Binney Street Building entrances will create small plazas with decorative hardscape to mark their entrances and provide additional spatial relief among those pedestrian routes.

By implementing the previously-approved Brigham Green Enhancement and Parking project, BWH will enhancing the green space in front of the Peter Bent Brigham Hospital building at 15 Francis Street thereby providing a significant on-campus open space. Removal of the Biophysics Building with its 8,492 square foot

footprint, allows for an expansion of existing green space and proposed landscape enhancements will improve the user's experience of this space. Further objectives are to seek opportunities to provide additional green space in and around the BWH Campus and in new expansion projects where possible. The IMP Projects, in particular the landscaping between the Residential Building and Brigham and Women's Building, will improve both the quantity and quality of green spaces.

The Brigham Green Enhancement and IMP Projects will improve both the quantity and quality of green spaces in and around the BWH Campus.

3.5 Urban Design Guidelines

BWH has developed urban design guidelines for future buildings on the BWH Campus, including:

Image and Iconography

- ◆ Create signature buildings for BWH that harmonize with the surrounding built environment.
- ◆ New buildings should have greater depths of transparency and variety of connections to the outside (in contrast to the existing bed tower).

Form Making

- ◆ Provide vibrant images through the integration of structure, form and program – “From Stacking to Sculpture” without creating discordant forms or materials.
- ◆ Building masses must be sculpted as a coherent architectural form and more than a simple stacking of the program.
- ◆ Articulating the building mass must be guided by:
 - The building's response to its context.
 - Orientation to sunlight and views.
 - The internal organization of spaces.
 - Consideration for the negative spaces created with a goal of creating positive open space experiences , “urban rooms” , and green space

Connectivity

- ◆ Maximize integration with the BWH Campus.

- ◆ Continue the “Pike” into any new building.
- ◆ Transform the Pike from a “corridor” to a public procession linking a series of event spaces in a “promenade”.
- ◆ Vary volume and the types of programs connected to the Pike. Event spaces help to bring light into the building and orient the patients, visitors, and staff to the outside.

Place Making

- ◆ Create a framework of events and spaces that will make future buildings humane, integrated into their surroundings, and environmentally responsive.
- ◆ Bridge connection shall be used to improve protected circulation for staff and patients and connect BWH Campus elements while maintaining transparency and visual links to the surrounding urban fabric. They should be designed to add to the “street life” not detract.

Natural Light

- ◆ Allow natural light to penetrate the depth of buildings to reach staff and patient spaces.
- ◆ Where possible in planning projects, locate open spaces on exterior walls, creating vistas while allowing natural light to penetrate deeper into interior spaces.
- ◆ On the lower levels, create light filled, multi-story spaces that become civic spaces for gathering and communication.

Urban Visual Corridors

- ◆ When massing and siting buildings, allow sightlines and vistas to be maintained and reinforced through judicious development of sightlines to green spaces and natural and man made vistas. Restoring the Binney Street connection with the Riverway is primary goal.

These Urban Design Guidelines provide a framework for the BWH Campus development during the term of the BWH 2010 IMP. The IMP Projects will be consistent with these guidelines and with the long-range vision for the BWH Campus.

Section 4.0

IMP Projects

4.0 IMP PROJECTS

4.1 Introduction

This BWH 2010 IMP includes the Brigham and Women’s Building and Binney Street Building (components of the MMHC Project described herein), the construction of the Brigham Green Enhancement and Parking (previously-approved by virtue of the BWH 2005 IMP), and Campus Additions and Campus Upgrades. These IMP Projects are outlined in Table 4-1.

Table 4-1 IMP Projects

Project	Size	Use	Zoning Height	Construction Start/End
<i>Proposed IMP Projects</i>				
Binney Street Building	56,540 sf	Clinical and office space, public assembly (meeting room of 120 person capacity)	75 feet	Upon receipt of approvals (Spring 2010) 18 Month Construction Period
Brigham and Women’s Building	358,670 sf (includes 52,750 sf of DMH space)	Clinical and research, public assembly (450 seat conference center), DMH space	222 feet ¹	To be completed no later than 10 years following occupancy of Binney Street Building
<i>Campus Additions and Upgrades</i>				
Campus Additions and Upgrades	20,000 net new sf	Hospital uses, lobby, public assembly (restaurant)	N/A	Within ten year term of BWH 2010 IMP
<i>Already Approved Projects</i>				
Brigham Green Enhancement and Parking	400 (249 net new) parking spaces 500 sf*	Parking/Open Space	Up to 4 below grade levels	To be completed prior to start of construction of Brigham and Women’s Building

¹ Includes mechanical levels 13 and 14 but excludes rooftop mechanical equipment. As noted above, the Brigham and Women’s Building will have a maximum height of 222 feet measured from the average grade around the building to the top of the roof of the mechanical penthouses: The zoning height as calculated in accordance with Article 2A of the Code may in fact be less than the 222 feet maximum described herein. The number of floors within the Brigham and Women’s Building will depend on the final program mix between clinical and research uses. The square footage may be configured as 12 above-grade and one occupied level below grade.

4.2 Binney Street Building and Brigham and Women's Building

During the term of the BWH 2010 IMP, BWH proposes two buildings, the Binney Street Building and the Brigham and Women's Building, that are part of the MMHC Project.

The Binney Street Building, which will be developed by BWH, comprises 56,540 sf of clinical and office space which will be used in the long-term by BWH for clinical uses. The building includes a meeting room that accommodates up to 120 people. In the short-term, DMH will occupy the Binney Street Building until the DMH designated space within the Brigham and Women's Building is available. No parking is proposed on the Binney Street Site. A loading zone for the Binney Street Building is proposed on Fenwood Road. Solid waste and recycling for the Binney Street Building will occur in the Serivcenter Complex.

The Brigham and Women's Building, which will be developed, managed, and controlled by BWH, will contain approximately 358,670 sf of space for research and development, clinical, and offices uses by BWH and DMH. The building also includes a 450 seat conference center for grand rounds, teaching and conferences. Construction of the Brigham and Women's Building on the Main MMHC Site requires the abatement and demolition of the existing MMHC Buildings totaling approximately 190,000 sf. In response to community concerns raised during the community meetings, it is noted that the research uses will not include a Level 4 biolab. A 406 space parking garage is proposed under the Brigham and Women's Building. It will include 50 spaces for DMH.

The scale and general massing of the Binney Street Building and Brigham and Women's Building as described in this BWH 2010 IMP have been presented to the BRA staff and Boston Civic Design Commission (BCDC). Refinements to massing, design details and articulation of the buildings will be subject to further review by BRA design staff and BCDC.

4.3 Brigham Green Enhancement and Parking (Previously Approved)

As previously approved in the BWH 2005 IMP, the Brigham Green Enhancement and Parking project includes the improvement of the Brigham Green by removing existing surface parking and the Biophysics building, and in its place creating a landscaped open space. The new Brigham Green will serve to welcome pedestrians coming from Brigham Circle/Huntington Avenue and improve pedestrian conditions and circulation on the BWH Campus. The area in front of the Peter Bent Brigham Hospital building at 15 Francis Street will become a new green space sloping gently down from the building's front entrance to Brigham Circle. The south-facing green space will provide an attractive setting for the building that is the recognized image of the hospital. The space will be able to be enjoyed by patients, staff, visitors and residents.

The Brigham Green Enhancement and Parking Project is scheduled to be completed prior to the start of construction of the Brigham and Women's Building. The timing of the Brigham Green Enhancement and Parking is driven by the need to have space to move the

occupants of the Biophysics Building that will be demolished as part of this project. Difficulties in the financial markets and issues in terms of the constructability made it impossible to construct the Brigham Green Enhancement and Parking during the term of the BWH 2005 IMP.

In order to relocate the 8,492 sf of office and wet lab space currently in the Biophysics building, vacant space must be found. Other than planned expansions listed in Section 4.2, BWH will not be adding any major additional owned real estate prior to the construction of the Brigham and Women's Building and BWH occupancy of the Binney Street Building. BWH will however be adding leased space (see Section 4.5) some of which will be used to relocate dry and wet research groups out of existing hospital buildings. That will in turn create the space BWH needs to relocate the existing occupants (faculty offices, patient care services support staff, and Asthma research wet lab) out of the Biophysics building in time for demolition and subsequent construction of the Brigham Green Enhancement and Parking Project.

The leased space and subsequent occupancy of the Binney Street Building and Brigham and Women's Building will help alleviate the overall stress of space availability on the BWH Campus and prevent delays such as those BWH is experiencing in getting the Brigham Green Enhancement and Parking project underway.

4.4 Campus Additions and Campus Upgrades

Due to BWH's reputation of excellence in patient care, and the resulting projected growth in the size and acuity of the patient base, as well as the hospital's commitment to education and research, BWH needs to renew existing facilities and expand its capacity for treatment with minor additions and upgrades to several of its existing buildings.

Campus Additions are small projects planned during the term of the IMP that result in a net increase in gross floor area. During the term of the IMP, BWH proposes the following Campus Additions that will result in approximately 20,000 net new square feet as described below:

- ◆ Renovate and upgrade the Neo Natal Intensive Care Unit with approximately 13,000 sf of net new space. This expansion of the 6th floor of the Connor's Center for Women's Health onto the roof of the 5th floor will result in all private rooms for NICU patients thereby providing privacy for patients and families. With a net increase of three beds, NICU will have a total capacity of 50 beds. The NICU expansion will not result in an increase in overall height of the Connor's Center for Women's Health;

- ◆ Renovate the 15 Francis Street lobby to offer modernized amenities which includes a minor addition to the Peter Bent Brigham building on the Shattuck St façade to create a new lobby area, open views to the Harvard Medical School open space and provide a renovated restaurant (area of public assembly); and
- ◆ Other minor expansions during the term of the BWH 2010 IMP as needed.

Campus Upgrades are planned upgrades and renovations of existing facilities that do not result in net new space on the BWH Campus. These Campus Upgrades typically fall into four categories including infrastructure improvements, upgrades for diagnostic treatments, upgrades to medical equipment, and support. The following is a list of planned Campus Upgrades:

- ◆ Develop and implement a strategic master plan for BWHs obstetric, neonatal and women's health service lines.
- ◆ Renovate approximately 5,500 sf of the ground floor of A-Building at 15 Francis Street for clinical support.
- ◆ Continue the 88,000 sf refurbishment and modernization and inpatient bed units at the Inpatient Tower at 75 Francis Street. Patient beds from the Inpatient Tower were relocated to the new Shapiro Cardiovascular Center which allowed the remaining Inpatient Tower bed space to be reorganized more efficiently and to be converted to some private rooms. Create an inpatient oncology center of excellence with all private rooms. Regionalize and renovate Orthopedic, Neuroscience, Medicine and Surgery bed units.
- ◆ Upgrade 2,800 sf of the main public cafeteria.
- ◆ Renovate the emergency department in two phases, short-term adding 12 new treatment bays (6,000 sf), and long-term expansion into adjacent building, Nesson 1 (17,000 sf).
- ◆ Renovate 6,060 sf of the Orthopedic and Rheumatology Clinic.
- ◆ Make BWH Campus-wide improvements for accessibility and way-finding for the disabled.
- ◆ Improve the energy efficiency and environmental quality of the existing physical plant.
- ◆ Continue roll-out of new automated pharmacy equipment BWH Campus-wide to meet USP 797.

- ◆ Add Cyber knife Oncology Treatment for advanced cancer treatments which impacts 2,500 sf.
- ◆ Continue replacement of aging MRIs, impacting 6,100 sf.
- ◆ Expand Plastic Surgery capacity and create a Wound Care Center with renovation of 2,700 sf.
- ◆ Renovate 900 sf of the Center for Preoperative Evaluation to meet growing surgery volume.
- ◆ Renovate 2,400 sf of Inpatient thoracic surgery unit and provision of digital x-ray on the inpatient floor.
- ◆ Create Zebra Fish Lab at 221 Longwood Avenue.
- ◆ Decompression and modernization of on-campus Endoscopy (impacts 8,550 sf).
- ◆ Expansion of Inpatient dialysis with 3,100 sf renovation.
- ◆ Renovate 3,100 sf to expand the Invasive radiology programs and six-bed recovery space
- ◆ Renovate and provide automation for Clinical Lab impacting 14,600 sf.
- ◆ Renovate 4,500 square feet to create a 44th OR and continue renovation of existing ORs.
- ◆ Complete Advanced Multi Modal Image Guided OR (AMIGO) enabling groundbreaking MRI & PET/CT Image guided procedures in 8,000 sf of space.
- ◆ Other Campus Upgrades as needed to invest in BWH's existing physical plant and buildings through renovation and modernization of the BWH buildings, mechanical equipment, and infrastructure that further its medical, academic and research missions.

These Campus Upgrades will enhance BWH's ability to provide the very best in patient care and create expanded research and training opportunities in keeping with its institutional goals.

4.5 Future Leased Space

In addition to the new space provided by the IMP Projects, BWH expects to require additional leased space off-site in the LMA for research, administration, support services, information systems, and other non-clinical areas. BWH plans to lease approximately 150,000 to 250,000 sf, depending upon its actual space needs as well as availability of

suitable real estate. Due to space constraints, BWH has already moved many hospital functions to off-campus locations, including leased facilities in other parts of Boston and in Brookline.

4.6 Proposed FAR

With the approval of this 2010 BWH IMP, the BWH Campus total square footage will be 2,509,153 which includes the Binney Street Building, the Brigham and Women's Building, the tunnel levels and bridge under and over Fenwood Road, 20,000 sf of Campus Additions and the already approved Brigham Green Enhancement and Parking. The BWH Campus will be a total of 14.4 acres including the Brigham and Women's Building Site and the tunnel and bridge area across Fenwood Road. The FAR of the BWH Campus with the changes described above is 4.01.

4.7 Schedule and Cost

The cost of the Binney Street Building will be approximately \$20 million and the cost of the Brigham and Women's Building will be approximately \$300 million. These costs are based on current estimates of construction and related costs which have decreased due to the current economy, and on assumed construction commencement dates. Any changes in the economy or Project schedule could change these estimates, as will design refinements as construction documents are developed. The Brigham and Women's Building must be completed within 10 years of the occupancy of the Binney Building.

The Brigham Green Enhancement and Parking, estimated to cost approximately \$58 million, is scheduled to be completed prior to the construction of the Brigham and Women's Building.

The IMP Projects will be developed in phases. The Binney Street Building, as well as the MMHC Project's Partial Hospital/Fenwood Inn is proposed in the initial phase of development. This phase is estimated to commence immediately upon the receipt of all required permits and approvals from applicable City and State agencies and authorities. Construction is anticipated to begin in Spring 2010 with approximately five months of phased abatement and demolition of the existing MMHC buildings. Demolition of these structures will allow construction staging area for the first phase of the MMHC Project which includes the Binney Street Building. A construction period of the approximately 18 months for the Binney Street Building is anticipated.

Following an interim phase when no construction activity is proposed and then the subsequent construction of the Residential Building, the Brigham and Women's Building will be constructed as the final development phase of the MMHC Project and the final significant element of the BWH 2010 IMP. The timing for construction of the Brigham and

Women's Building is contingent upon the financial market but will take place to ensure occupancy no later than 10 years following the opening of the Binney Street Building. The Brigham and Women's Building will likely take approximately 30 months to construct.

Section 2.3 of the Draft EIR/PIR includes additional information on overall MMHC Project schedule, including the IMP Projects.

The Campus Additions will occur throughout the term of the IMP. The expansion of the Neo Natal Intensive Care unit is anticipated to cost approximately \$28 million and is proposed in the next three to six years. The renovation of the 15 Francis Street lobby and minor expansion to the Peter Bent Brigham Building is estimated to cost approximately \$3 to \$4 million and is proposed in the next three to six years. The construction of the 15 Francis Lobby project will likely occur simultaneously with the construction of the Brigham Green Enhancement and Parking project. Campus Upgrades are planned throughout the term of the IMP.

4.8 Zoning

4.8.1 *Existing BWH 2005 Institutional Master Plan and Institutional Master Plan Overlay District*

The Boston Zoning Commission's (BZC) action in its adoption of Map Amendment #444 February of 2005, established the existing BWH Institutional Overlay District and adopted the BWH 2005 IMP. The BWH Institutional Overlay District and the BWH 2005 IMP together set forth the relevant dimensional, use and other regulations relevant to all of the properties owned by BWH within the LMA and environs (meaning those portions of Mission Hill proximate to the LMA).

The BWH Institutional Overlay District includes: (1) BWH's Main Campus, bounded by Francis Street, Binney Street, Shattuck Street and Huntington Avenue which is located within the H-3 Zoning District and the Restricted Parking Overlay District ("RPOD"); (2) 70 Francis Street, the block bounded by Binney Street, Vining Street, Fenwood Road, and Francis Street, and that portion of Francis Street which is located within the 3F-2000 Subdistrict of the Mission Hill Neighborhood Zoning District established in accordance with Article 59 of the Zoning Code and Enabling Act (the "Code") and within the RPOD⁷; (3) 80 Francis Street which is located within the H-1 Zoning District and the RPOD and a portion of which may be located within the Greenbelt Protection Overlay District ("GPOD");⁸ (4) 48 Francis Street which is located within the 3F-2000 Subdistrict of the

⁷ The portion of Francis Street which forms the basis of the above and below-grade connections to the existing operating rooms, support areas and "Pike" within BWH's Main Campus is located in part within the 3F-2000 Mission Hill Neighborhood Zoning Subdistrict as shown on Map 6D and in part within the Apartment Floor Area Ratio of 3.0 (H-3) Zoning District as shown on Map 6. This area is also located within the Restricted Parking Overlay District.

⁸ The uses and structures at 80 Francis Street pre-existed the adoption of the GPOD noted above.

Mission Hill Neighborhood Zoning District and within the RPOD; and (5) 221 Longwood Avenue which is located within the H-3 Zoning District and the Groundwater Conservation Overlay District ("GCOD")⁹. These properties are described in the BWH 2005 IMP and included within the boundaries of the existing BWH IMP Overlay District.

The zoning controls applicable to development within the BWH Institutional Overlay District are those set forth in the applicable provisions of BWH's IMP and Article 80 of the Code. BWH's IMP sets forth the use, dimensional, parking, loading and other requirements applicable to the development and use within the BWH Institutional Overlay District as currently configured. In 2007, BWH submitted an IMP update to the BRA and BTD was updated at the same time. As noted in the IMP update, BWH proceeded with IMP projects and made adjustments to the construction sequencing of certain campus, landscaping and other improvements to minimize overall construction impacts upon patients, visitors, and neighbors of the hospital.

The schedule for the Brigham Green Enhancement and Parking Project needed to be adjusted so as to account for delays due to issues of constructability and project financing. The timing of the Brigham Green Enhancement and Parking is driven by the need to have space to move the occupants of the Biophysics Building that will be demolished as part of this Project. In addition, difficulties in the financial markets made project financing challenging. Section 4.3 provides additional information on the Brigham Green Enhancement and Parking schedule. Current planning calls for the Brigham Green Enhancement and Parking Project to be completed prior to the start of construction of the Brigham and Women's Building proposed in this IMP.

4.8.2 Proposed Zoning Controls –Binney Street Building and Brigham and Women's Building and Related Improvements During the Course of the IMP

The Binney Street Building

The Binney Street Building, consisting of approximately 56,540 sf of office and clinical space will be constructed on the Binney Street Site, an approximately 12,454 sf vacant parcel of land immediately adjacent to the Servicer Center Complex known and numbered 80 Francis Street. The Binney Street Site is located within the Apartment Floor Area of 1.0 (H-1) Zoning District and the Restricted Parking Overlay District as shown on Map 1 "Boston Proper" and Map 6 "Roxbury" of the Zoning Maps for the City of Boston. The Binney Street Site and the Servicer Center Complex were permitted, constructed and used in accordance with M.G.L. c. 121A, the approvals for which expired earlier this year. The BRA has issued a Certificate of Project Termination with respect to the 121A approvals, in accordance with a BRA Board action taken on April 28, 2009.

⁹ The uses and structures at 221 Longwood Avenue pre-existed the adoption of the GCOD noted above.

By virtue of the BWH 2005 IMP approvals, the Binney Street Site was also included within the BWH Institutional Master Plan Overlay District. The proposed BWH 2010 IMP and corresponding amendments to the BWH IMP Overlay District would authorize the development and use of the Binney Street Building for BWH-related hospital use. The BWH 2010 IMP and amendments to the existing BWH IMP Overlay District will allow for the development and use of the Binney Street Building, consisting of approximately 56,540 sf of clinical and office space to be utilized by BWH for clinical and office uses. Pending the completion of construction of the Brigham and Women's Building, DMH (which is exempt from local zoning regulation) will occupy the Binney Street Building for its office use and clinical purposes until the DMH-designated space with the Brigham and Women's Building has been completed. Once approved, the BWH 2010 IMP and corresponding amendments to the BWH IMP Overlay District will authorize the construction of the Binney Street Building, as fully in compliance with all the relevant provisions of the Code, including dimensional, parking, loading and other special purpose districts, established in accordance with Section 3-1A or any other Section of the Code without the need for further relief.

The Brigham and Women's Building

As shown on Appendix D, the majority of the Main MMHC Site will be divided into two lots, one of which will be developed by RTH for residential purposes (the zoning controls for which are set forth in a Planned Development Area Plan prepared on behalf of RTH), and one of which will be developed by BWH both for its use and for use by DMH. The remainder of the MMHC Site is located at 20 Vining Street, directly across the street from the Main MMHC parcel, and will be developed as the Partial Hospital/Fenwood Inn, details of which are provided below.

The lot on which the proposed Brigham and Women's Building will be constructed will consist of approximately 65,129 sf (the "Brigham and Women's Building Site") and is located within the Massachusetts Mental Health Center Institutional Subdistrict (MMHC Institutional Subdistrict) of the Mission Hill Neighborhood Zoning District established in accordance with the provisions of Article 59 of the Code, and within the boundaries of the Restricted Parking Overlay District (RPOD) established in accordance with the provisions of Article 3-1A.c. of the Code. A portion of the MMHC Site, the portion which will be dedicated for use by RTH, is located within the Greenbelt Protection Overlay District (GPOD), established in accordance with Article 29 of the Code. The Brigham and Women's Building Site is not within the GPOD. According to Table D of Article 59 which sets forth the uses allowed within the MMHC Institutional Subdistrict, clinics, clinical laboratories, hospitals and general/professional offices are allowed as of right within the MMHC Institutional Subdistrict. The dimensional regulations applicable to development within the MMHC Institutional Subdistrict are as set forth in Table I of Article 59, as the same may be affected by the provisions of an approved IMP. Parking, other than that which

is required for and accessory to a residential use, is not allowed as of right within the MMHC Institutional Subdistrict and RPOD, absent zoning relief granted by the Board of Appeal in the forming of a conditional use permit or IMP approval.

By virtue of the proposed BWH 2010 IMP, the BWH portion of the MMHC Site will be included in the "BWH Campus" as that term is defined herein. The proposed BWH 2010 IMP and BWH Institutional Overlay District will include the portion of the MMHC Site which will be dedicated to BWH's use for the development and construction of the Brigham and Women's Building and BWH will request that the BRA and BZC approve the BWH 2010 IMP and adopt the necessary amendments to the existing BWH IMP Overlay District to effectuate the same. The underlying MMHC Institutional Subdistrict zoning allows for the clinical, office, laboratory, and research uses proposed for the Brigham and Women's Building. The BWH Institutional Overlay District and BWH 2010 IMP will be sufficient to authorize the use and construction of the proposed Brigham and Women's Building including the parking spaces in the underground garage and loading access thereto, as well as the tunnel and bridge across Fenwood Road. The development and use of the Brigham and Women's Building in accordance with the terms of the BWH 2010 IMP and BWH Institutional Overlay District will be deemed to be allowed as of right and determined to be in compliance with all relevant provisions of the Code, including dimensional, parking, loading, and other special purpose districts including districts established pursuant to Section 3-1A or any other Section of the Code without the need for further relief.

Campus Additions and Campus Upgrades / Previously Approved Brigham Green Enhancement and Parking

BWH will request that the BRA and BZC approve the 2010 BWH IMP which will authorize the Campus Additions (including 20,000 net new space) and Campus Upgrades (described in Section 4.4), and the previously approved Brigham Green and Enhancement Project (to the extent required). The Campus Additions include a 13,000 sf expansion of the Neo Natal Intensive Care unit on the 6th floor of the Connor's Center for Women's Health, a renovation and small expansion of the 15 Francis Street Lobby, and other small building additions as needed during the term of the BWH 2010 IMP. Campus Upgrades to existing buildings will also occur to ensure BWH facilities offer the best in patient care.

Partial Hospital / Fenwood Inn

The proposed site of the Partial Hospital/Fenwood Inn is a 10,853-sf lot with improvements located thereon located at 20 Vining Street. It is the site of an existing vacated administrative office building which is owned by the Commonwealth of Massachusetts by and through its Division of Capital Asset Management and has been operated by DMH. According to a review of Map 6D Mission Hill Neighborhood District, this property is

located within the Three Family 2000 sf of lot area (3F-2000) Subdistrict of the Mission Hill Neighborhood Zoning District and within Restricted Parking Overlay District established in accordance with Section 3-1A.c. of the Code.

The development and use of the Partial Hospital/Fenwood Inn will be exempt from local zoning and other local regulations, and will be authorized as an "essential government function" of DMH which, as an agency of the Commonwealth, will use the replacement Partial Hospital/Fenwood Inn – which had been located in the MMHC at 74 Fenwood Road – for the care and treatment, on an inpatient and outpatient basis, of the patient community which it serves. The Partial Hospital/Fenwood Inn will include a 42 bed transitional shelter program for homeless, mentally ill men and women, a 5 bed crisis stabilization unit and 8,260 square feet of partial hospital and outpatient treatment space. The redevelopment of the Partial Hospital/Fenwood Inn will be undertaken by BWH on behalf of DCAM/DMH pursuant to the terms of the Master Plan, Development Agreement, and Ground Lease with DCAM, acting by and on behalf of DMH, which will set forth the terms of the redevelopment.

Summary of Proposed Zoning Controls

Once the BWH 2010 IMP and the corresponding amendments to the BWH IMP Overlay District are approved by the BRA and adopted by the BZC, the BWH 2010 IMP and the BWH IMP Overlay District will authorize the additional BWH specific components of the MMHC Project, specifically the Brigham and Women's Building, and the Binney Street Building as well as the Brigham Green Enhancement and Parking and the Campus Additions and Campus Upgrades with respect to the uses and structures located therein. BWH's 2010 IMP and BWH IMP Overlay District will authorize existing structures and uses as described herein and located within the BWH Institutional Overlay District, including without limitation, parking and loading dedicated thereto. The proposed Projects described in this IMP, including the Brigham and Women's Building, the Binney Street Building, the updated Brigham Green Enhancement and Parking, and the Campus Additions and Campus Upgrades, will be authorized by virtue of the amendments to allow for the adoption of the BWH Institutional Overlay District and BWH's 2010 IMP. The adoption of the proposed amendments to the existing BWH Institutional Overlay District and the BWH 2010 IMP will result in changes to the zoning district designations currently set forth on Map 6D to include the BWH Institutional Overlay District and IMP designation concerning a portion of the MMHC IS Subdistrict which includes the majority of the Main MMHC Site, portions of Fenwood Road, = and modifications to those zoning controls currently in effect with respect to the 80 Francis Street Property as well as other herein described changes to the BWH Campus.

Following review, approval and adoption of to the BWH 2010 IMP and changes to the BWH Institutional Overlay District by the BRA and BZC, which IMP also includes a Development Plan as defined in the Code, the development and use of: the Binney Street Building, the Brigham and Women's Building, the updated Brigham Green Enhancement

and Parking; and the various Campus Additions and Campus Upgrades, in accordance with this BWH 2010 IMP, will be allowed as of right and determined to be in compliance with all relevant provisions of the Code, including use, dimensional, parking, loading and other special purpose overlay districts established in accordance with Section 3-1A or other Section of the Code, without the need to obtain any further zoning relief or approval.

Consistent with the direction provided by the BRA in 2005, it was agreed that a detailed summary of the deviations from the underlying H-1, H-3, MMHC Institutional Subdistrict, and 3F-2000 Zoning District Requirements is not required and these requirements are not relevant or applicable to the institutional development, both existing and proposed, within the BWH Institutional Overlay District. It is acknowledged that the level of detail which is provided the BWH 2010 IMP is sufficient to explicate the relevant zoning controls for the structures and uses described therein, including the proposed IMP Projects described as the Binney Street Building, the Brigham and Women's Building, the updated Brigham Green Enhancements and Parking, and the Campus Additions and Campus Upgrades, further details of which are provided in the Draft EIR/PIR as filed with the BRA.

With respect to the BWH Institutional Overlay District requirements, "Hospital Use", as that term is defined and described in Article 2A which includes uses and subuses, including but not limited to inpatient facilities, ambulatory care facilities and clinics, research and medical offices, and uses related and accessory thereto, including foodservice/restaurant, bank, and retail/gift shop, parking and loading uses are allowed as of right. The relevant dimensional requirements are those of FAR and height only, and no setbacks or yards are required. The existing parking spaces and loading spaces are as authorized currently and the parking and loading requirements applicable to the new Projects, as described in the BWH 2010 IMP, are determined in accordance with Large Project Review as described in Article 80B, and specified in Chapter 4 of this IMP. This BWH 2010 IMP and the BWH Institutional Overlay District shall set forth the use, dimensional, parking, loading and other requirements applicable to the development of the Projects as described in the IMP, which shall be deemed in compliance with all requirements of the Code, including special purpose overlay districts established pursuant to Section 3-1A or any other Section of the Code.

Future additional projects within the BWH Institutional Overlay District that: (i) are consistent with the uses and general purposes set forth within the BWH 2010 IMP; and (ii) do not, when aggregated with other such exempt projects throughout the duration of this BWH 2010 IMP, result in the cumulative erection or extension of more than 25,000 square feet of an Institutional Use, and are otherwise exempt from IMP review pursuant to Section 80D-2, shall be deemed in compliance with the use, dimensional, and other regulations of the underlying zoning for the purposes of obtaining a Notice of Exemption in accordance with the provisions of Section 80D-2.4 and Section 80D-10, provided that said project has

undergone Small Project Review in accordance with the provisions of Section 80E of the Code, whether or not expressly required therein, and provided further that such exempt projects cumulatively add no more than one story to any structure of ten or more stories in height.

At the expiration of the BWH 2010 IMP all then existing Institutional Uses within the BWH Institutional Overlay District are deemed to be allowed for all purposes and all pre-existing buildings and structures, whether occupied by any Institutional Uses or not, and described in the BWH 2010 IMP and located within the BWH Institutional Overlay District, are deemed in compliance with all use, dimensional, parking and loading requirements set forth in the Code, including special purpose overlay districts established pursuant to Section 3-1A or any other Section of the Code.

With respect to future leased space as noted in Section 4.5 above, such leases shall not require approval through an Article 80 IMP process if: (a) the use of such leased spaces is limited to non-“High Impact Subuses” as such uses are defined in Article 2A; and (b) but for the institutional nature of BWH’s occupancy, such use would be allowed either as-of-right in accordance with underlying zoning or permitted according to zoning relief which has been obtained in connection with such use or structure. All such leased space shall be deemed to comply with the BWH 2010 IMP upon provision to the BRA of written notice setting forth the location of, the area encompassed by, the duration of, and the parties to the lease, and the uses to be pursued with the space leased.

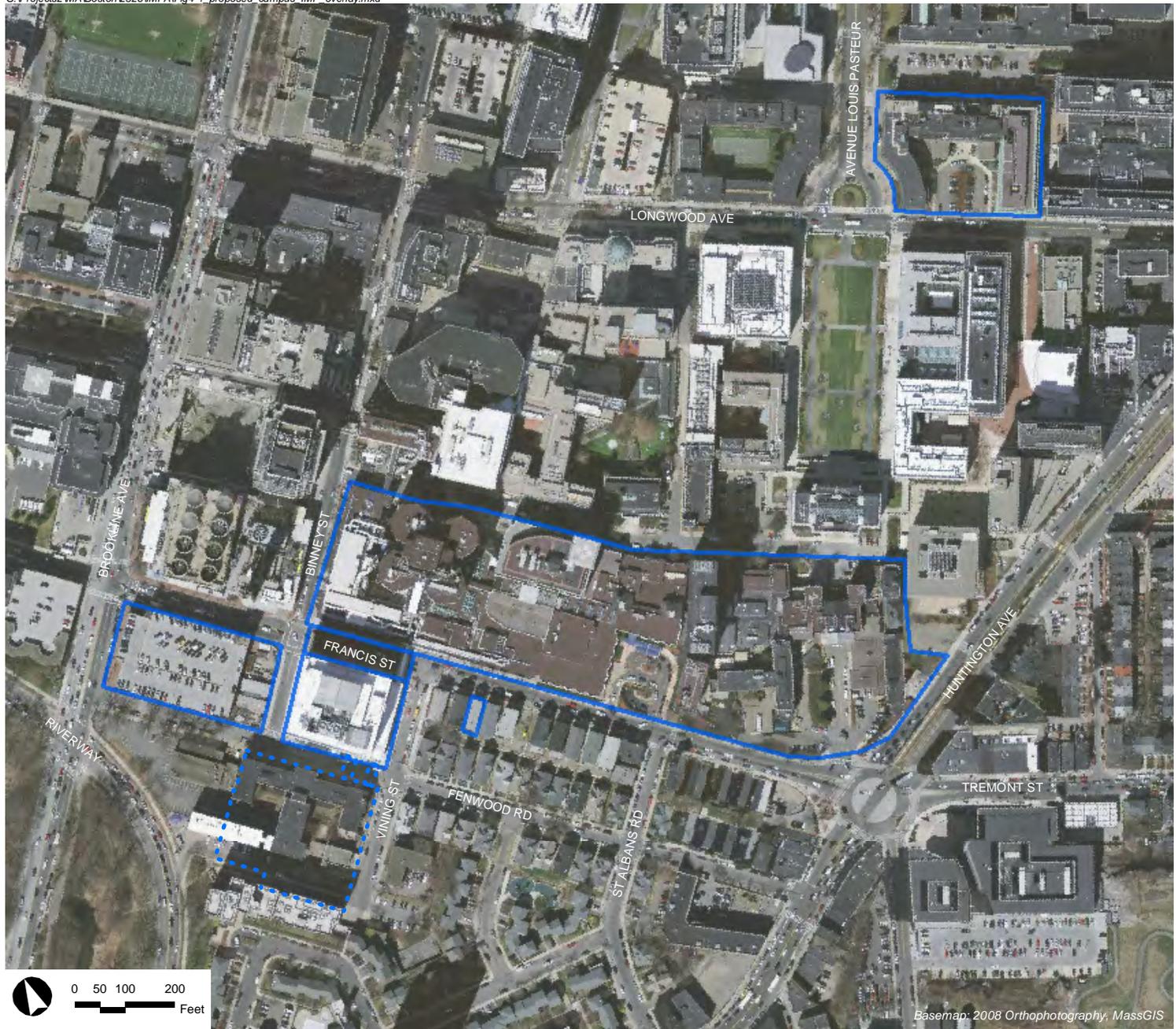
4.9 Campus Expansion

With the exception of adding the proposed Brigham and Women’s Building Site and tunnel and bridge connection to the Shapiro Cardiovascular Center under and over Fenwood Road to the BWH Campus, BWH does not have plans for additional expansion at this time. The proposed BWH Institutional Overlay District is shown on Figure 4-1.

4.10 Potential Future Projects

During the term of this IMP, BWH anticipates the development of the Binney Street Building, the completion of the Brigham Green Enhancement and Parking, the commencement of construction of the Brigham and Women’s Building, and implementation of Campus Additions and Campus Upgrades. Additional future projects are not proposed at this time.

Figure 4-1 the Proposed BWH Institutional Overlay District



LEGEND

-  Existing BWH Campus
-  Proposed BWH Campus

Basemap: 2008 Orthophotography, MassGIS

Source: BWH, BRA

BWH 2010 IMP Boston, Massachusetts

5.0 URBAN DESIGN

5.1 IMP Projects' Site History

The site of the Binney Street Building is within the current BWH Institutional Overlay District. BWH acquired the Binney Street Site along with the Servicenter Complex in 2004 when it was combination of low growth planting beds and brick hardscape. Currently, the Binney Street Site is occupied by construction trailers which are no longer in use, the transformer for the Servicenter Complex and the former bus stop for the Partners HealthCare and LMA shuttles – the bus stop function has been relocated to the front of the Shapiro Center.

The Brigham and Women's Building is proposed on the Main MMHC Site, the former location of the MMHC, a community mental health center administered by the DMH. Opened as the Psychopathic Department of Boston State Hospital, the MMHC Site is historically significant for the pioneering role MMHC played both in psychiatric research and in the development of new patient treatment strategies. The MMHC represented a shift from the asylum setting found at institutions such as Danvers and Northampton state hospitals to a more clinical and research-based rehabilitation program with a strong emphasis on furthering scientific knowledge. In 1956, the facility officially became known as the MMHC. The MMHC, at its temporary location at Shattuck Hospital, continues to provide outpatient psychiatry services, mental health research, inpatient care, and intensive day hospitalizations. The Main MMHC Site, under the control of DMH, currently contains five buildings with approximately 190,000 gross square feet. The buildings are currently vacant following the relocation of MMHC to Shattuck Hospital in 2003. The vacant buildings have suffered serious deterioration, including structural deterioration and they present a potential public safety hazard. In addition, there are approximately 163 surface parking spaces around the buildings which are currently licensed by the Commonwealth to BWH.

5.2 IMP Projects' Design

Although only the Binney Street Building and the Brigham and Women's Building are proposed in the BWH 2010 IMP, the design of these two buildings are tied to the overall MMHC Project which is proposed as a single, albeit phased, development effort. Where appropriate, this section addresses all four buildings, while focusing primarily on the Brigham and Women's and Binney Street Buildings.

The four buildings are intended to stand as individual buildings with architectural vocabularies appropriate to their respective uses, but work together as an ensemble in a mutually reinforcing and coordinated manner. The ensemble of buildings consists of four distinct masses: the Partial Hospital/Fenwood Inn, the Binney Street Building, the Brigham and Women's Building and the Residential Building. The Partial Hospital/Fenwood Inn Building is at the southeastern end of the Project Site, separated from the other buildings by

Vining Street. The Brigham and Women's Building, located between the Partial Hospital/Fenwood Inn and the Residential Building on Fenwood Road, will be separated from the Residential Building by a new landscaped pedestrian way. This new landscaped pedestrian way will permit a view corridor looking southwesterly from the intersection of Binney Street and Fenwood Road to the Riverway and the vistas beyond. The Binney Street Building will be located between Francis and Binney Streets and Fenwood Road, adjacent to the Servicenter Complex.

The scale and general massing of the Project as shown in this BWH 2010 IMP has been presented to the BRA staff and Boston Civic Design Commission. Refinements to massing, design details and articulation of the buildings will be subject to further review by BRA design staff and BCDC at the time they go proceed with schematic design review.

5.2.1 *Binney Street Building*

The Binney Street Building is proposed as a six-level structure between Binney Street, Francis Street and Fenwood Road, adjacent to the Servicenter Complex. The building presents a uniform roof line, but is five floors at Francis Street and six floors at Fenwood Road due to the change in grade across the Binney Street Site. The underlying massing is layered, with a solid, anchoring mass containing core elements along the garage and a lighter, glassy element which wraps the solid element along Binney and Francis Streets. The upper four floors of this lighter, glassy element are visually enclosed within a metal cornice which at the southwestern end extends toward Fenwood Road and on the northeastern side turns to become a vertical element on the Francis Street facade. The floors below this distinct massing element are set back to widen the sidewalks and further articulate the mass above. This widening of sidewalk extends the Binney Street sidewalk and creates entry plazas at both Binney Street intersections.

These two entry plazas mark the two points of entry to the building. The primary address is on Fenwood Road in a space defined by the entry plaza and the extended cornice canopy described above. The secondary entrance, located at the corner of Francis and Binney Streets accesses the meeting space and certain other first floor public areas, which need to be separate from other programmatic uses within the building.

Materials contemplated are chosen to reinforce the massing organization and include metal panels at the cornice, masonry units at solid areas and curtain wall.

5.2.2 *Brigham and Women's Building*

The Brigham and Women's Building is located at the eastern side of the Main MMHC Site. Its massing is organized as three vertically-oriented layers over a two-story podium. These three vertically-oriented layers slide past each other along their northwest-southeast axis, which at both northwest and southeast facades permit a slender, vertically-oriented organization. In addition, they create a staggered footprint at the northwestern end of the

Brigham and Women's Building which helps define and zone the ground plane of the pedestrian way. The two-story podium facing the RTH community to the southwest serves to set the taller, layered volume back from Neville House, the RTH residential high-rise located on the opposite side of the private way. An additional third level of massing is added to the podium at its southern corner and along its southeastern edge with the addition of an articulated conference center volume and the termination of the "Pike," a visual extension of the bridge crossing Fenwood Road from the Shapiro Cardiovascular Center at 70 Francis Street.

Major entrances to the Brigham and Women's Building are located at the north and east corners. The main BWH entry is located at the corner of Fenwood Road and Vining Street and accesses a lobby with security functions, entrance to the parking garage, and some small miscellaneous clinical functions which are proposed on the ground floor at the east entry. Another BWH entry is proposed along the private way which will allow access to the internal circulation system of the Brigham and Women's Building as well as the BWH Campus "Pike." The building also includes a main entry for DMH's MMHC psychiatric clinical space and administrative uses in the building. In addition to these entrances, the Brigham and Women's Building proposes crucial interior connections across Fenwood Road to the Shapiro Cardiovascular Center via a tunnel and bridge. Additional information on these connections is provided below in Section 5.4.

Service and garage entrances are located on the southwest façade along the private way.

5.2.3 Additional Design Details

Chapter 5.0 of the Draft EIR/PIR, submitted concurrently with the IMP, provides additional details on MMHC Project design. Specifically, Chapter 5.0 of the Draft EIR/PIR outlines the following:

- ◆ design intent of the Binney Street Building and Brigham and Women's Building within the context of the MMHC Project and responds to the BRA's Scoping Determination.
- ◆ describes broad design concepts including orientation and connectivity to area uses and consideration of the Binney Street Corridor
- ◆ describes the design approach to streetscape, wayfinding and vehicular access and egress.
- ◆ addresses open space planning, the rationale for the proposed massing and height and the design concept for the Binney Street Building and Brigham and Women's Building.

The Draft EIR/PIR also includes perspectives and elevations in Chapter 2.0 and floor plans in Appendix B. Due to the early stage of design, elevations and floor plans of the Brigham and Women's Building are not available. BWH will coordinate with the BRA design staff and BCDC and the design progresses for the Binney Street Building and the Brigham and Women's Building. BWH and design team will ensure appropriate articulation at ends of vistas of the Project Site.

5.3 Interim Condition

Construction of IMP Projects will be phased. The Binney Street Building is part of the first phase of the MMHC Project. The Brigham Green Enhancement and Parking will be completed prior to the start of construction of the Brigham and Women's Building. The Brigham and Women's Building will be the final phase of the MMHC Project. The agreement with the Commonwealth requires that the Brigham and Women's Building must be completed within 10 years of the occupancy of the Binney Street Building.

Due to construction phasing, there is a period of time with no construction activity between the construction of the Binney Street Building and the construction of MMHC Project's Residential Building and the Brigham and Women's Building. BWH and RTH have developed, in consultation with a Community Construction Mitigation Group, an interim plan outlining proposed uses of the Main MMHC Site during these periods with no construction activity. Section 2.3 and Section 4.10 of the Draft EIR/PIR describe plans for the interim condition. In general, the Main MMHC Site will be used as landscaped open space, temporary parking and a staging area for construction of the Residential Building and later the Brigham and Women's Building.

5.4 BWH Campus

The following respond to issues identified by BRA Design Staff and incorporated into the BRA Scoping Determination.

5.4.1 *Campus Connections*

The lifeblood of a hospital is its multi layered communication networks and pedestrian connections. Information in myriad forms pulse throughout the institution: patient information, electronic medical records, diagnostic images, care provider communications and test results. But just as important are the physical connections that allow staff, patients, materials and supplies, test specimens, medical equipment and families and the public to traverse the increasingly complex physical environment. The links and nodes that characterize these connections are vital to the functioning of the facility and consist of bridges, tunnels, and pedestrian walkways. These provide the essential connections but compete in some cases with an overlaid vehicular network.

5.4.1.1 Pedestrian and other connections

Pedestrian circulation is encouraged in – via the Pike – and around – via adequate sidewalks – the existing BWH Campus and will be reinforced and extended in and around the new Brigham and Women’s Building and the Binney Street Building. Comfortable sidewalks with appropriate streetscape improvements, City standard crosswalks and linked open spaces provide connections between the BWH buildings and the other LMA institutions, public transportation and neighborhoods surrounding the LMA.

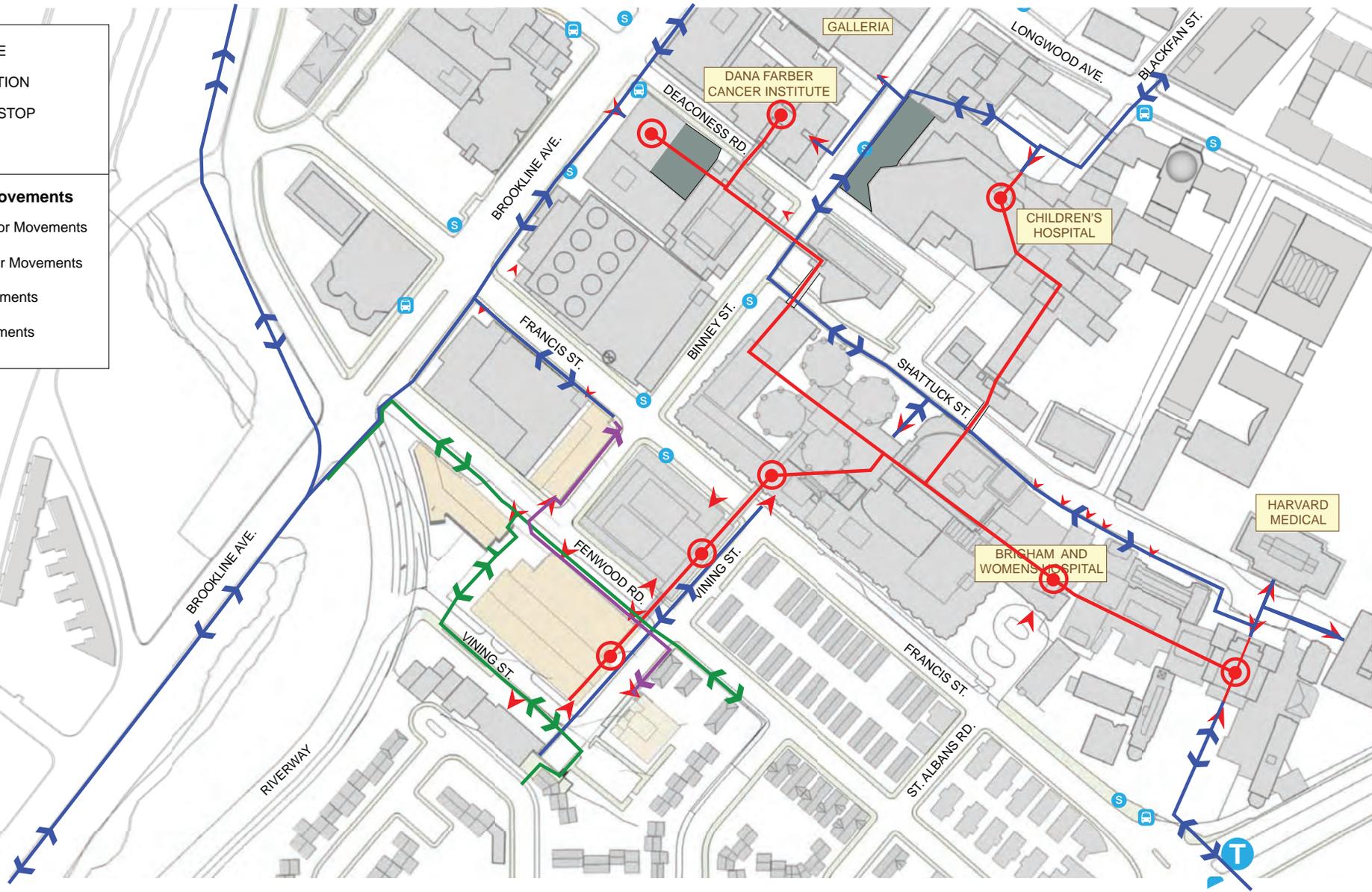
The major pedestrian movements on the BWH Campus occur along the length of Francis Street as pedestrian access to the hospital is mainly located on this street (see Figure 5-1 and Figure 5-2). From the east, pedestrians generally approach the BWH Campus from Huntington Avenue, which is also the MBTA Green Line corridor for its E-Branch. In addition, BWH administrative offices and conference facilities located nearby at One Brigham Circle contribute to pedestrian movement across Huntington Avenue at its intersection with Francis Street. As part of the approved Brigham Green Enhancement and Parking project, the area in front of the Peter Bent Brigham Hospital building at 15 Francis Street will become a new green space sloping gently down from the building’s front entrance to Brigham Circle. The south-facing green space will provide an attractive setting for the building that is the recognized image of the hospital. The space will be able to be enjoyed by patients, staff, visitors and residents. The previously-approved Brigham Green Enhancement and Parking will serve to welcome pedestrians coming from Brigham Circle/Huntington Avenue and improve pedestrian conditions and circulation on the BWH Campus.

From the west, pedestrians enter the BWH Campus from Brookline Avenue. The D Branch of the Green Line stops on Chapel Street near Longwood Avenue in Brookline. The Servicer Center Complex at the corner of Brookline Avenue and Francis Street is another source of pedestrian traffic to the hospital. The secondary entrance to the new Binney Street Building at the corner of Francis and Binney Streets will provide a small covered entry plaza integrated with planters and the entrance to the Servicer Center Complex. The sidewalk alongside the proposed Binney Street Building will continue the eight foot width of the Binney Street sidewalk between Francis and Shattuck Streets, but gradually widen to twelve feet at the corner of Binney Street and Fenwood Road where the proposed main building entrance with its own small covered entry plaza will be located.

-  ENTRANCE
-  MBTA STATION
-  SHUTTLE STOP
-  BUS STOP

Pedestrian Movements

-  LMA Exterior Movements
-  LMA Interior Movements
-  DMH Movements
-  RTH Movements

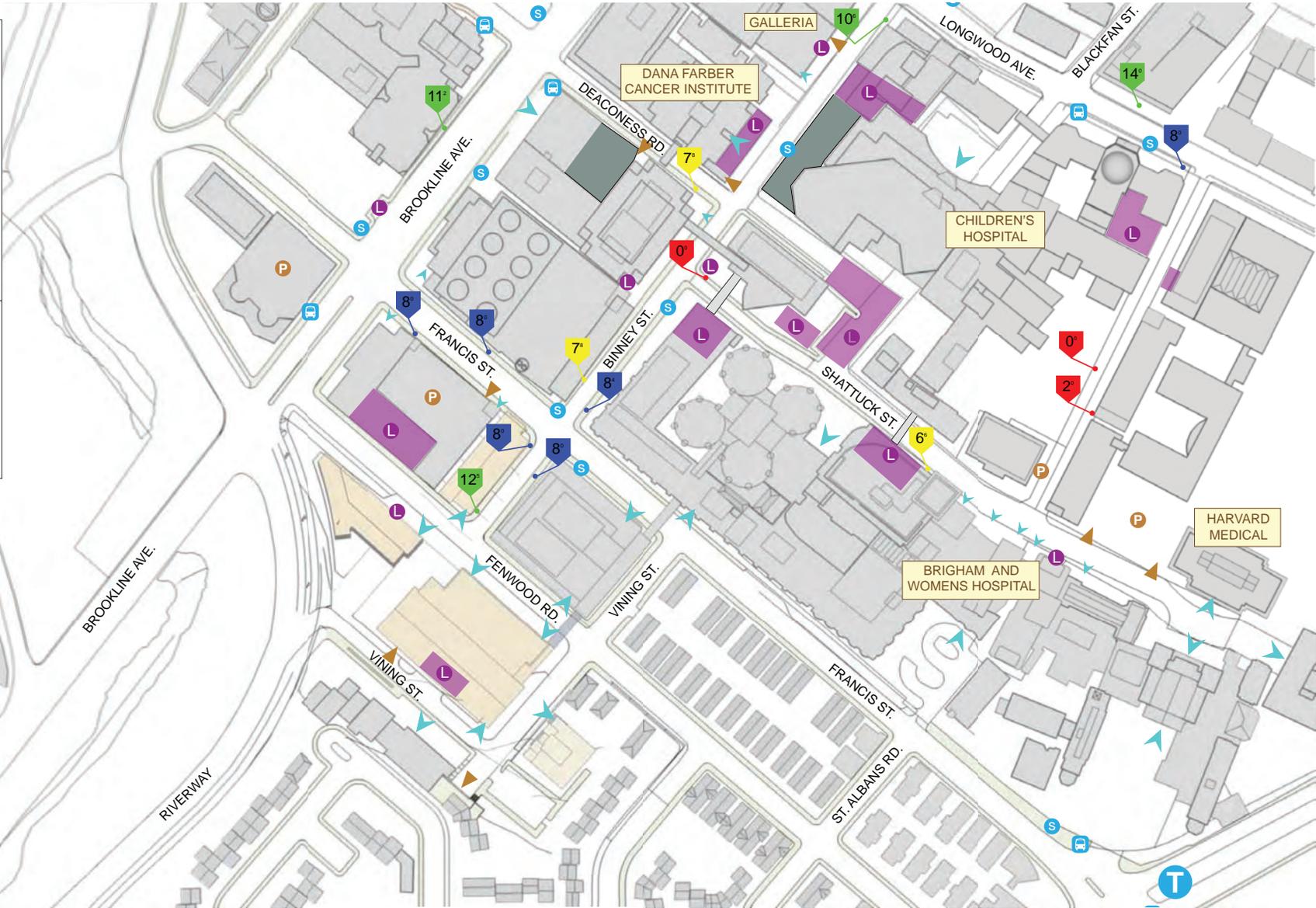


BWH 2010 IMP Boston, Massachusetts

-  ENTRANCE
-  MBTA STATION
-  SHUTTLE STOP
-  BUS STOP
-  PARKING
-  PARKING ENTRANCE
-  LOADING DOCKS
-  SERVICE AREA

SIDE WALK DIMENSIONS

-  LESS THAN 6'-0" WIDE
-  BETWEEN 6'-0" & 8'-0"
-  BETWEEN 8'-0" & 10'-0"
-  OVER 10'-0" WIDE



BWH 2010 IMP Boston, Massachusetts

Figure 5-2
Pedestrian Realm

From the south, Mission Hill residents approach the BWH Campus from surrounding streets and southern sections of Mission Hill, while medical staff approach the BWH Campus from the Mission Park Garage. In addition, Mission Park residents and BWH staff travel to and from Mission Park, which includes BWH leased space in a portion of the Neville House adjacent to the Mission Park Garage on Vining Street. Approximately 36,000 sf of the Neville House is leased for administrative and clinical space for hospital employees. Both populations will use either the landscaped sidewalk along the Brigham and Women's Building, across the proposed Fenwood Road bridge into the Shapiro Cardiovascular Center and subsequently across the Francis Street bridge to 75 Francis Street. To the north, there is a strong pedestrian connection for hospital medical staff to Harvard Medical School from 15 Francis Street to the medical school entrance courtyard on Shattuck Street. Pedestrian movement also occurs from Huntington Avenue to Harvard Medical School via a walkway through the courtyard around the library at the Harvard School for Public Health. Pedestrian movement occurs as well through the 75 Francis Street entrance through the main lobby to Shattuck Street.

The new Brigham and Women's Building will have landscaping to enhance the pedestrian experience as well as safe sidewalks and appropriate features to accommodate disabled access throughout the BWH Campus.

The parallel system of landscaped sidewalk and internal pedestrian circulation along and through the Shapiro Cardiovascular Center between the Mission Park Garage and 75 Francis Street will be continued in the proposed Brigham and Women's Building on Fenwood Road which will link to the Shapiro Cardiovascular Center via a Fenwood Road Bridge. The pedestrian experience along Fenwood Road will be similarly enhanced with a broadening of the sidewalk in front of the Brigham and Women's Building and introduction of street trees in a pattern to match those of the Shapiro Cardiovascular Center side of the street.

The Binney Street Building is set back to create entry plazas at both its primary entrance on Fenwood Road and secondary entrance on Francis Street. The secondary entrance plaza on Francis Street is also the point of entry to the adjacent Servicer Center Complex. Plaza development on Francis Street includes stairs beneath a cantilevered overhang to allow for some rain shelter. The sidewalk along Binney Street between these two plazas will increase from eight feet at Francis Street to twelve feet at Fenwood Road and be planted with a colonnade of street trees in flush tree grates.

Though the Partial Hospital/Fenwood Inn and Residential Building are not included in the BWH 2010 IMP, their design is integral to the enhanced pedestrian connections to the BWH Campus. On the opposite side of the proposed Brigham and Women's Building along Vining Street, the new Partial Hospital/Fenwood Inn will be set back from the sidewalk to provide a landscaped green space between the sidewalk and building. Visual connections such as sightlines and view management will be employed as the new Brigham

and Women's Building, the new Binney Street Building, and the Residential Building are planned and will be coordinated to enhance way finding and orientation as well as creating a sense of unity across the BWH Campus.

5.4.1.2 Tunnels

BWH tunnels extend a network of subsurface connections that link all the most important diagnostic and treatment areas of the hospital together. It also links them to the key support facilities – Central Processing Department, clean supplies, and the hospital's major loading docks and trash facilities. The tunnels are primarily for the movement of materials, gowned staff and non-ambulatory patients as a way of providing a clinically appropriate, dignified route to get the patients in need of higher acuity care to the clinical facilities, while segregating those populations from the administrative staff, visitors and ambulatory patients who more typically use above-grade connections, which are provided with adequate daylight to enhance their experience.

Below-grade construction is proposed at the Brigham and Women's Building P2 and P3 levels below Fenwood Road to allow tunnel connections to the existing L2 Imaging Floor and L3 Central Processing Department at the Shapiro Cardiovascular Center. Connections at these levels are crucial in providing a secure and clinically appropriate environment as they move back and forth between imaging, treatment, and other facilities at the Shapiro Cardiovascular Center and the clinical services of the new Brigham and Women's Building. This tunnel connection will also provide a necessary underground connection to the centralized linen and disposal services at the Servicer Center Complex that handles bio-medical waste, trash and linen services.

5.4.1.3 Bridges

Existing bridges provide safe, protected passage throughout the LMA. BWH buildings are connected by bridges internally between the 75 Francis street and the Shapiro Cardiovascular Center and between Connors 5th floor and the Tower 5th Floor. Externally, BWH is connected to its partner in cancer care the Dana Farber Cancer Institute, and to its partner in neonatal care the Children's Hospital Boston, both with a bridge to clinical areas as well as the research entities across Shattuck Street.

The Brigham and Women's Building will be integrated into the existing BWH Campus by an above-grade third level bridge across Fenwood Road connecting to the 2nd level of the Shapiro Cardiovascular Center at 70 Francis Street. The bridge will provide a vital connection between the Brigham and Women's Building to the rest of the BWH Campus, avoiding the creation of an unviable stand alone outpost. Furthermore, this bridge will be a continuation of the Pike, the primary circulation and organizing element within the hospital connecting all of the buildings on the BWH Campus. The Shapiro Bridge across Francis

Street connecting the Shapiro Cardiovascular Center to the BWH Campus is a vital link in integrating that building with the rest of the BWH Campus, improving overall way finding and enhancing the patient experience.

The Brigham and Women's Building bridge over Fenwood Road is equally critical to the efficient and safe operations of the hospital as it will provide:

- ◆ direct connectivity to the Pike which handles 80% of the hospital circulation and access to all hospital services;
- ◆ a connection to the hospital's main entry at 75 Francis Street (via Shapiro and Brigham bridges) which provides operationally vital services such as centralized patient registration and valet drop-off and pick-up;
- ◆ a physical connection to all BWH Campus buildings which is needed for patients to benefit from BWH's coordination of care by allowing access to multiple departments during a single visit;
- ◆ Pike access for BWH and other LMA Institutions to the 450 seat Conference Center planned for the third floor of the Brigham and Women's Building. This facility will be used for grand rounds, teaching, and conferences;
- ◆ Access to the Pike and the entire BWH Campus for the people who currently park their cars in the Mission Park Garage; and
- ◆ Access to the BWH Campus for the patients and visitors approaching the southern end of the BWH Campus.

All of the building users will derive benefits from having access to the entire BWH Campus via the bridge. For researchers this may mean going from their lab to bedside of a patient. For doctors this would mean being able to move between clinics, offices and bed floors. Finally, patients and visitors will be able to stay inside the BWH Campus way-finding system in a protected environment as they access services in different locations including the new Brigham and Women's Building. This efficient and safe circulation in a protected environment within the BWH Campus becomes especially critical for patients who are sick and or disabled.

5.4.1.4 Wayfinding

BWH has prioritized the reinforcement of the hospital's institutional identity and wayfinding. The Brigham and Women's Building and Binney Street Building, along with the recently completed Shapiro Cardiovascular Center and BWH's acquisition of the Servicer Center Complex will establish BWH's southwestern BWH Campus edge. The enhanced frontage on Fenwood Road, Vining Street, Binney Street, and, via the Servicer Center, Brookline Avenue, strengthen the hospital's image and identity at this end of the LMA.

This will provide the ability for a patient or visitor to access the BWH Campus at the BWH Building or Shapiro Center, and internally circulate to their appointment or visit via the Pike system.

At the eastern edge of the BWH Campus, the previously-approved Brigham Green Enhancement and Parking in front of 15 Francis Street at the Peter Bent Brigham Hospital building will strengthen the hospital's image and identity creating a clearly identifiable landmark and entry point at this key interface with the mass transit system. In addition, landscape improvements will provide a greatly improved pedestrian entry into the BWH Campus while creating an attractive green space for informal use by the public, patients, families and staff.

Signage for the Brigham and Women's Building and the Binney Street Building will be consistent with the goals set forth above to reinforce BWH's institutional identity. As described above, Project buildings with BWH uses will incorporate the BWH logo and entrances will be clearly marked. To promote integration of the proposed BWH buildings into the existing BWH Campus, the signage and wayfinding design will be consistent with the March 2006 Comprehensive Sign Design for the Shapiro Cardiovascular Center, subject to approval by the BRA.

The wayfinding approach for the Binney Street Building and the Brigham and Women's Building will include a clear plan to distinguish BWH occupied areas from the DMH uses, and residential uses of the MMHC Project. A clear plan for wayfinding is essential to help visitors traveling by car or foot easily identify their destination. Area signage will clearly mark each building and use. Signage will be appropriately sized and designed to reflect both the design of the MMHC Project buildings including the Binney Street Building and Brigham and Women's Building but also the aesthetic of the surrounding area. Potential measures to assist with wayfinding are providing directional signage along major access routes, using appropriate logos on buildings (DMH or BWH), including building names on the façade and marking clearly building entrances. To ensure the plan for each building meets these goals, the Proponent will meet with BRA design staff to discuss appropriate wayfinding and signage for each Project building.

5.4.2 *BWH Campus Open Spaces*

While very limited open space is available in a dense institutional complex like the LMA, the goal is to reinforce and extend the existing open space and green spaces with new open spaces. Open space provides relief from the intense hospital experience for staff and patients and helps define the built environment by its edges and negative volumes. Green space has been demonstrated in a great many studies to enhance healing and patient well being.

BWH open spaces, ad hoc relaxation spaces and green spaces accommodate passive and active enjoyment for staff, patients and the public and include:

- ◆ Seating, trees and landscaping at the end of Shattuck Street provide place for employees to have lunch surrounded by the impressive buildings of the Harvard Medical School
- ◆ The green pathway along Shattuck Street provides a pleasant walkway along the relatively quiet street
- ◆ The Cohn courtyard with tree planters, seating and hardscaping north of the tower lobby is a convenient space for lunch break as well as accommodating tents for special occasions and fundraisers
- ◆ The seating and hardscaped waiting area in front of 70 Francis provides covered seating while waiting for shuttle buses
- ◆ The green edge along Francis street provides some trees and a low wall which serves as informal seating areas and makes for a pleasant walk along Francis street
- ◆ The ramp, trees and lawn in front of 15 Francis Street provides one of the larger open spaces giving the historic buildings a formal front court as well as providing space for the huge annual block party known as Street Beat. Further expansion will make this one of the premier green spaces in the LMA. This will be more fully developed as part of Brigham Green Enhancement, which is to be completed prior to the start of construction of the Brigham and Women's Building.
- ◆ The planters and green edge along Binney Street from Francis Street to Shattuck Street offer a little green relief on this mostly hard concrete streetscape
- ◆ Trees and planters at 45 Francis street provide flowering trees to frame the main ambulatory entrance
- ◆ Broad sidewalk and landscaping as well as vistas into the Shapiro Atrium make Vining Street a pleasant green connection between the Mission Park Garage and 75 Francis Street.
- ◆ The healing gardens on the roof adjacent to the NICU on Connors 6 offer peace and serenity and a break from the stressful environment of the NICU. BWH recognizes the importance of peaceful surroundings and its role in promoting healing and will recreate this healing garden will be recreated as part of the expansion of the Neo Natal Intensive Care Unit.

Enhancements to these formal and ad hoc areas have been incorporated into the new IMP Projects' planning. They will extend and add to the green edges, open spaces and relaxation areas and open an important link to the Riverway and include:

- ◆ The open space between the Brigham and Women's Building and Residential Building will provide a terminus to Binney Street and will include various landscape and hardscape amenities to establish a sense of place and allow a visual amenity from and to the adjacent Riverway.

A widening of sidewalks at the Brigham and Women's Building and Binney Street Building entrances will create small plazas with decorative hardscape to mark their entrances and provide additional spatial relief along these pedestrian routes.

- ◆ The Brigham and Women's Building will create an additional length of widened sidewalk and landscaping that make Vining Street a pleasant green connection between the Mission Park Garage and 75 Francis Street.
- ◆ The Binney Street Building includes entry plazas on Fenwood Road and on Francis Street. The sidewalk along Binney Street between these two plazas will increase from eight feet at Francis Street to twelve feet at Fenwood Road and be planted with a colonnade of street trees in flush tree grates.
- ◆ The previously-approved Brigham Green Enhancement and Parking project will remove existing surface parking and the Biophysics building and create a landscape open space.

5.5 Compliance with the LMA Interim Guidelines

Chapter 10.0 of this 2010 IMP includes a discussion on compliance with the LMA Interim Guidelines.

Section 6.0

Transportation Access Plan Component

6.0 TRANSPORTATION ACCESS PLAN COMPONENT

6.1 Introduction

A detailed transportation analysis for the BWH Campus is provided in Chapter 3 of the Massachusetts Mental Health Center Redevelopment Draft PIR/EIR filed concurrently with this BWH 2010 IMP. The transportation analysis conforms to the BTD “Transportation Access Plans Guidelines.” The study includes an inventory of Existing Conditions which includes a survey and compilation of existing transportation conditions within the study area including transportation characteristics of the BWH Campus. Future transportation conditions were then projected within the study area for the years 2016 and 2021 since the development will be phased. The transportation analysis also identifies the proposed mitigation and improvement actions to address project-related pedestrian, parking, traffic, and public transportation impacts of the project.

The transportation study also includes characteristics and proposed operations of the Roxbury Tenants of Harvard, who is a joint Proponent of the MMHC Project with BWH, and the Massachusetts’ Department of Mental Health. Upon completion of the Project, BWH will occupy the Binney Street Building and the Brigham and Women’s Building (less 52,750 sf designed for use by DMH). The Residential Building will be operated by RTH and the Partial Hospital/Fenwood Inn will be operated by DMH.

The additional traffic generated by the IMP Projects is expected to have only limited impacts on the area’s transportation infrastructure. However, to offset these new trips, BWH is committed to providing transportation improvements and mitigation actions to improve transportation conditions for residents, patients, visitors, and employees traveling in the area.

6.2 Parking Summary

Over the past several years, BWH has had the opportunity to make only modest incremental increases to its on-campus parking supply in the LMA. With the opening of 70 Francis Street no new parking was provided however, the Brigham Green Enhancement and Parking Project was permitted to provide 400 (249 net-new) parking spaces for this building in the future. Current planning anticipates the opening of this Project before construction of the Brigham and Women’s Building.

The Project will provide a limited amount of new parking. The Project includes 406 new spaces to be constructed to provide necessary additional parking supply in the area for the Residential Building, DMH, and BWH. New residents will park in the Mission Park Garage (90 keycards). In addition, 16 existing residential spaces on the Main MMHC Site will be relocated to the Mission Park Garage. To accommodate additional residential parking in the Mission Park Garage, a total of 106 BWH employees who park in the Mission Park Garage today will need to be relocated to the new Brigham and Women’s Building Garage.

On a square footage basis the Project as a whole has a parking ratio of 0.62 parking spaces per 1,000 sf. BTD guidelines applicable to parking ratios for new construction would allow for 0.75 spaces per residential unit and 1,000 sf per non-residential land uses within the LMA and 0.75-1.0 spaces per 1,000 sf of non-residential use and 0.5-1.0 spaces per residential unit within the Mission Hill neighborhood. Under the existing guidelines, up to 584 parking spaces could be built to support the Project.

The commitment to minimize the construction of new parking spaces as part of the BWH 2010 IMP is a key to reducing traffic impacts in the area. New parking that is proposed within the IMP is below the LMA Interim Guidelines ratio of 0.75 spaces per thousand square feet¹⁰. BWH plans to be proactive about managing parking and encouraging employees to use alternative modes of transportation. In addition, BWH will rely on off-site parking outside of the LMA to meet a portion of its employee parking needs associated with the Project. This measure will discourage employee traffic in the LMA. As shown below in Table 6-1, when the MMHC Project is completed, BWH’s campus parking ratio will decline from 1.17 to 1.11 (spaces per ksf).

Table 6-1 BWH Parking Ratios in the LMA (Includes Owned and Leased Space)

	Brigham and Women’s Building Floor Area (sf)	BWH-Controlled Parking Spaces in the LMA	Parking Ratio (spaces/1,000 sf)
Existing Conditions	2,794,761	3,277 *	1.17
Future Conditions**	3,229,971	3,577	1.11

* Includes approved (but not yet constructed) 249 net-new permitted spaces at Brigham Green Parking and Enhancement Project.

** Does not include Residential Building and associated parking.

Source: Brigham and Women’s Hospital Facilities and Parking/Security Departments.

Note: Parking ratios are based on both owned and leased building space and parking within the LMA.

In addition to constraining the proposed parking supply, BWH will move valet operations from the Mission Park Garage to the ASB-II Garage to reduce traffic impacts to the residential neighborhood. The planned Brigham Green Enhancement and Parking Project, which includes 400 parking spaces (249 net-new) will accommodate the valet operations currently on the Main MMHC Site which were temporarily relocated there to complete the 70 Francis Street/Shapiro Building Project. With the changes to valet parking operations at BWH, modifications to the signal timings at the intersection of Vining Street/Francis Street are proposed to better process traffic flows on the Francis Street corridor.

¹⁰ Only the Binney Street Building falls within the boundaries of the area in which LMA Interim Guidelines are applicable. However MMHC Project, including the Binney Street Building and Brigham and Women’s Building, complies with those Guidelines as they relate to the construction of on-site parking spaces.

Patient and Visitor Parking Management

BWH provides a range of options to patients and visitors driving to its main LMA campus, including pick-up/drop-off areas, self-parking, and valet parking. The primary pick-up/drop-off loop is located at its main hospital entrance and Emergency Department, which is at 75 Francis Street, near the intersection of Francis and Binney streets. A second dedicated pick-up/drop-off loop is located at the H. Richard Nesson Ambulatory Center (ASB-II) at 45 Francis Street. Additionally, ancillary pick-up/drop-off activities are provided from the 15 Francis Street entrance, which is located in front of the Peter Bent Brigham building near the intersection of Francis Street and Huntington Avenue. Ambulatory care patients are encouraged to self-park at the Servicenter Complex. Visitors may, of course, also use any of the other area garages open to the public.

Valet services are currently provided at four locations on the campus: 75 Francis Street, 15 Francis Street, 45 Francis Street, and 221 Longwood Avenue. Vehicles arriving at 75 Francis Street, which were previously stored in the Mission Park Garage, are now stored at the ASB-II Garage and to a lesser extent the Main MMHC Site surface parking lot. The other valet areas are self contained and do not require vehicles to be stored at another location. In the future the Brigham Green Parking and Enhancement Project will also provide valet parking operations. Approximately 1,000 patients are valet parked each day from the three BWH Francis Street entrances.

Employee Parking Management

BWH charges competitive rates to its employees for the use of on-site parking to reduce the number of employee vehicles entering the LMA each day and make more nearby spaces available to patients and visitors. Employees who work at least 20 hours per week are eligible for reserved parking through BWH, allocated on a first-come, first-served basis. Shuttle buses operated by MASCO or Partners connect the remote parking locations to the main BWH campus. All on-site and nearby employee parking spaces are priced competitively. Remote employee parking spaces are offered at a reduced price. BWH offers a 50 percent discount for vanpool members.

BWH strongly encourages employees to use alternative modes of transportation. BWH's Massachusetts Department of Environmental Protection (DEP) Rideshare Program Update Report for 2008 indicates that 39 percent of the BWH employees drive to work. This is less than the area's average vehicle share of 47 percent as reported by the 2000 Census data.

6.3 Pedestrian Access

It is expected that the additional pedestrian traffic will help activate the streets abutting the Project Site. These new pedestrians will be accommodated by the widened sidewalks adjacent to the Project Site. The Project will also provide significant open space at the terminus of Binney Street. The open space will then extend into a pedestrian path between the LMA and the nearby Emerald Necklace through the Project Site.

6.4 Private Way

There is a private way that runs from the Riverway to the entrance of the Mission Park Garage between the Neville House building of Mission Park and forming part of the southern portion of the Main MMHC Site. It is slated to be redeveloped as a private roadway to serve a variety of access and service purposes for DMH, RTH and BWH and their respective successors, assignees, and invitees. It will be maintained, cleaned and plowed by the BWH for the benefit of all of the users. Contemporaneously with the execution of the ground leases for the MMHC Site between the Commonwealth (acting through DCAM) and BWH, the Commonwealth and the Proponent will record in the Suffolk County Registry of Deeds, a "Declaration of Easements" or similar instruments to confirm that the private way may be used by both residents of the Residential Building and users of the Brigham and Women's Building, including, without limitation, employees, invitees and patients of BWH and DMH, and their respective successors and assigns as the case may be.

The private way will be improved with sidewalk, curbing and some planting along the northeast edge, the pavement will be renewed and the entrance from the Riverway will include new traffic calming features and clearly marked pedestrian crossings perpendicular to the traffic flow both before and after the 90 degree turn (subject to DCR approval). The initial 200 feet of this roadway will be one-way from the Riverway to the first curb cut at the Brigham and Women's Building. From there to the end at the mouth of the Mission Park Garage, it will be two way.

The main traffic patterns will be:

- ◆ the one way flow of passenger cars from the Riverway to the new garage to be built under the Brigham and Women's Building and adjacent RTH and DMH facilities and properties;
- ◆ the two way traffic of cars, trucks and vans to the Brigham and Women's Building, all arriving and leaving via Vining Street which connects to the private way at the southern edge of the Main MMHC Site, where two-way traffic will end at the entrance to the Mission Park Garage; and
- ◆ pedestrian and some bicycle travel for people coming and going from the eastern sidewalk adjacent to the Riverway, the main Mission Park campus, the offices in

Neville House, the new Brigham and Women's Building's Vining Street entrance, the Partial Hospital/Fenwood Inn and the new Residential Building that is a part of this development.

The primary sidewalk for most pedestrian travel will be the existing sidewalk on the southwest side of the private way as it is not interrupted by curb cuts and has a green buffer from the adjacent Neville House.

6.5 Loading and Service

To accommodate additional demands, there will be a dedicated loading dock at the Brigham and Women's Building. This dock will provide four bays and will be shared with DMH.

The Residential Building is proposing a dedicated drop-off and loading zone on Fenwood Road. As proposed, this drop-off area will be approximately 60 feet long and therefore accommodate passenger cars and single-unit trucks. Moving activities and typically deliveries will be accommodated at this curb.

The Partial Hospital/Fenwood Inn will have a driveway to accommodate loading and service for the building. This driveway will be located off Vining Street. The driveway will be approximately 40-feet in length and will accommodate one single unit truck or two tandem vans or passenger vehicles. A small loading area off Vining Street is proposed for the Partial Hospital/Fenwood Inn. A loading zone for the Binney Street Building is proposed on Fenwood Road. The proposed driveway on the private way at the southern edge of the Main MMHC Site will provide access and egress to the parking garage and service area at the Brigham and Women's Building pursuant to the terms of a declaration of easements or other similar instrument as described above. A service entrance for the Residential Building will be located along Fenwood Road opposite the existing service entrances of the Servicenter Complex. Residents of the Residential Building will park in the Mission Park Garage which will be accessed via Vining Street or the private way.

The Binney Street Building will be served from a dedicated on-street loading zone adjacent to the site. This loading zone will be permitted with the Boston Transportation Department. It is anticipated that trash and recycling for the building will be consolidated at the existing loading facilities at the Servicenter Complex.

6.6 Traffic Impacts

The effects of the MMHC Project, including a detailed analysis of intersection level of service (LOS), were examined at 17 intersections specified by the City and MEPA. This analysis was conducted for existing conditions and for future conditions. The future

conditions analysis assumes the years 2016 for Phase 1 completion and 2021 for the entire Full Build condition. These analyses consider background growth, growth attributable to other identified projects, and traffic estimates associated with the MMHC Project.

With the 2016 Phase 1 Build Condition, traffic impacts associated with the Project will be reduced from the current condition due to the removal of BWH valet services from the Site. Overall there is a decrease in the parking supply Existing Conditions to the Phase 1 Build Condition.

The 2021 Full Build Condition creates additional traffic demands on the streets immediately surrounding the Project Site. Most affected are Vining Street and the private way adjacent to the Site. However, since there are currently low traffic demands on these streets today there is adequate capacity in the future to accommodate the Project generated traffic.

The results of the analysis indicate that there will be no substantial changes in LOS in the study area as a result of the Project. Several key intersections in the LMA and the Mission Hill neighborhood will continue to operate at poor LOS during the peak hours. The Longwood Avenue, Brookline Avenue and Huntington Avenue corridors will continue to operate with heavy vehicle delays. To reduce the Project's peak hour impacts, BWH will utilize remote parking facilities for a significant portion of the new employee population and shuttle these employees into the LMA. In addition, improvements at the intersection of Brigham Circle and Francis Street at Vining Street are proposed to improve operations.

6.7 Transportation Demand Management

BWH is committed to continuing to offer a wide array of Transportation Demand Management (TDM) incentives as a means to reduce single occupant driving and increase use of alternative forms of transportation to access the workplace. BWH actively supports efforts to reduce auto use for employees traveling to the hospital. Many actions to support this goal are currently actively employed by BWH, including the following:

- ◆ Employee Transportation Advisor.
- ◆ Membership in MASCO's CommuteWorks TMA.
- ◆ Full support of MASCO's other ongoing transportation initiatives.
- ◆ 50 percent transit pass subsidy for employees.
- ◆ Carpool assistance and incentives.
- ◆ Vanpool coordination and subsidies.
- ◆ Bicycling/walking incentives and amenities.

- ◆ Location-priced parking (i.e.; offering competitive-rate parking on-campus and subsidized parking off-campus).
- ◆ Telecommuting and compressed workweeks, where reasonably feasible.
- ◆ Promotional efforts.

BWH will continue to promote and improve its TDM program to benefit its employees and reduce traffic impacts to roadways and parking facilities within the LMA and nearby neighborhoods. In addition, both DMH and RTH are also committed to proactively supporting TDM actions as a means to discourage single-occupant travel to the Project Site.

6.8 Public Transportation

The Project is projected to have only a modest incremental impact on transit operations in the area by 2021. The analysis assumed that future BWH and DMH employees, patients, and visitors and RTH residents will have access to the many public transportation services offered by the MBTA, as well as the array of private shuttle and transportation demand management services that are offered in the LMA through MASCO.

Because there are so many public transportation options that provide service to and from the LMA, no single service appears to be unduly affected by anticipated increases in activities because of the Project under future conditions. Consequently, transit trips are expected to affect the transit system only minimally under future conditions.

6.9 Proposed Mitigation

The proposed transportation mitigation plan includes several elements that will be codified in the forthcoming Transportation Access Plan Agreement (TAPA) with the Boston Transportation Department. These items are summarized in Tables 6-2 and 6-3 and include the following:

- ◆ Provide significant open space at the terminus of Binney Street – providing a clear visual connection between the LMA and the nearby Emerald Necklace through the Project Site;
- ◆ Provide street trees and other hardscape amenities along Fenwood Road, Binney Street, Vining Street, and the private way;
- ◆ Modify existing traffic signal operations to accommodate improved vehicle access and pedestrian safety at Brigham Circle;
- ◆ Modify existing traffic signal timings at the intersection of Vining Street/Francis Street to better facilitate the change in valet operations at BWH that will remove valet parking from the Main MMHC Site and the Mission Park Garage;

- ◆ Improve pedestrian amenities by reconstructing and widening sidewalks along portions of Fenwood Road, Binney Street, Vining Street, and the private way on the southern portion of the Main MMHC Site;
- ◆ Reconstruct the private way on the southern portion of the Main MMHC Site and portions of Vining Street and Fenwood Road abutting the MMHC Site to create a friendlier pedestrian environment;
- ◆ Provide a patient drop-off area along Fenwood Road in front of the Brigham and Women's Building;
- ◆ Provide convenient vehicle drop-off location for residents/visitors to the Residential Building;
- ◆ Include four new loading bays at the Brigham and Women's Building;
- ◆ Provide loading/service areas for the Partial Hospital/Fenwood Inn and the Binney Street Building;
- ◆ Provide secure bicycle storage and shower facilities for employees in the Brigham and Women's Building;
- ◆ Preparation of a detailed Construction Management Plan (CMP) for each proposed construction phase; and
- ◆ Continued participation in and funding support for system-wide transportation improvement studies for the LMA and impacted portions of the Mission Hill neighborhood.

Table 6-2 Mitigation Action Plan

	Mitigation Element	Description	Purpose/Benefit	Implementation Timing
<i>Traffic Management Plan</i>				
1	Patient Drop-off on Fenwood Road	Provide a patient drop-off along Fenwood Road in front of the Brigham and Women’s Building – which will be made available for patients.	Provide convenient/efficient patient access to the new facility.	Certificate of Occupancy Brigham and Women’s Building
2	Residential Building Drop-off	Provide convenient vehicle drop-off location for residents/visitors to the Residential Building	Provide convenient and safe drop-off location along Fenwood Road.	Certificate of Occupancy Residential Building
3	Loading and Service Improvements	Include four additional loading bays to serve the new Brigham and Women’s Building.	Improve off-street loading conditions, eliminate potential illegal loading along Fenwood Road.	Certificate of Occupancy Brigham and Women’s Building
4	Materials Management Operations Plan	Continue to employ a proactive materials management plan at BWH Servicenter and West Plaza Loading docks.	Allows for “just in time” delivery techniques, which will reduce trucks trip frequency and dock utilization times at these locations.	Ongoing
<i>Local Street Network / System-wide Transportation Improvements</i>				
5	Brigham Circle Signal Improvements	Modify the existing traffic signal operations at Brigham Circle.	Will improve traffic access, and wayfinding and safety in the area.	Ongoing
6	Riverway Right-Turn Lane at Brookline Avenue Improvements	Support the provision of a dedicated right-turn lane from Riverway NB to Brookline Avenue. Project will be designed so that it does not preclude future implementation of this possible improvement.	Future traffic flow improvement at this intersection (to be permitted, designed and implemented by others).	Not Applicable
7	Area Sidewalk Improvements	Reconstruct widened sidewalks along portions of Fenwood Road, Binney Street, and Vining Street adjacent to the Project Site.	Improve pedestrian access, safety, and urban design of the area.	Certificate of Occupancy Binney Building/Partial Hospital Building
8	Area Street Improvements	Reconstruct roadways surrounding Site. New pavement markings will be installed	Improve operations and safety.	Certificate of Occupancy Brigham and Women’s Building
<i>Urban Design</i>				
8	Main MMHC Site Pedestrian Plaza	Provide significant open space at the terminus of Binney Street – providing a clear pedestrian connection between the LMA and the nearby Emerald Necklace through the Project Site.	Provide open space enhancement that complements open space in the area	Certificate of Occupancy Binney Building
9	Urban Design Improvements	Provide street trees and other hardscape amenities along Fenwood Road, Binney Street, and Vining Street.	Provide open space enhancement to the BWH campus and the adjacent neighborhood.	Ongoing through multiple phases of the Project

Table 6-3 Mitigation Action Plan (Continued)

	Mitigation Element	Description	Purpose/Benefit	Implementation Timing
<i>Parking</i>				
10	Limit new parking to be constructed	Project will include construction of 406 spaces for 633,960 sf of development.	Resultant parking ratio will be 0.62 spaces per 1,000 sf that complies with the ratio that has been established by the BTM within the LMA Interim Guidelines.	Certificate of Occupancy Brigham and Women's Building
11	Improve patient valet parking operations	Eliminate self parking in the ASB II Garage and convert that facility into a dedicated patient valet parking area. Modify signal timings at Vining Street/Francis Street to accommodate change.	Reduce patient traffic in the adjacent neighborhood by eliminating patient valet parking in the Mission Park Garage.	2010
12	Employee Parking Pricing	Evaluate and charge market rates for monthly employee parking.	Encourage shifting employee mode share from auto to transit. Will help to reduce parking demands.	Ongoing
<i>BWH Transportation Demand Management Plan</i>				
13	Maintain proactive in MASCO's TMA	Maintain access to wide array of TDM programs and amenities that seek to encourage the use of transit as a regular means of commuting.	Encourage shift in employee mode share from auto to transit.	Ongoing
14	Maintain high percentage employee transit subsidy	Maintain employee/tenant transit subsidy at 50 percent.	Encourage shift in employee mode share from auto to transit.	Ongoing
15	Zip Car Provision	Coordinate with ZipCar representatives to investigate provision of this shared-car service at the Brigham and Women's Building.	Encourage shift in employee mode share from auto to transit.	Certificate of Occupancy Brigham and Women's Building
16	Loading Dock Manager	Oversee loading operations.	Oversee delivery scheduling to maintain dock efficiency and reduce truck queuing at Brigham and Women's Building and other BWH materials management locations in the LMA.	Ongoing
<i>Construction Management Plan</i>				
17	Prepare Construction Management Plan	Prepare and submit a detailed Construction Management Plan (CMP) for the MMHC Project	Minimize construction impacts.	Ongoing through multiple phases of construction for this Project

Section 7.0

Infrastructure Systems Component

7.0 INFRASTRUCTURE SYSTEMS COMPONENT

7.1 Introduction

This section describes the existing infrastructure systems used by the BWH in the LMA and portions of the adjacent Mission Hill neighborhood. An overview of potential future infrastructure systems and impacts resulting from the proposed MMHC Project is presented in the Draft EIR/PIR being submitted concurrently with this BWH 2010 IMP.

The infrastructure systems addressed herein include sanitary sewer, water supply, stormwater drainage, electrical service, chilled water, natural gas, steam, and telecommunications. The analysis addresses the BWH Campus including the area located on Francis Street between Huntington Avenue and Binney Street, the recently constructed Shapiro Cardiovascular Center at 70 Francis Street, and 221 Longwood Avenue, Boston Lying-In, Medical Research Center, and the Richardson Fuller Building.

7.2 Sanitary Sewer

7.2.1 Existing System Conditions

The Boston Water and Sewer Commission (BWSC) owns and maintains the sewer lines in the public ways that service BWH. Existing sewer lines and connections within private land are owned and maintained by BWH.

Sanitary sewer systems in the nearby public streets and BWH Campus service roads are separate from stormwater collection systems. Within the study area, sanitary sewage flows by gravity through the collection system. Separation of sanitary and stormwater flows both maintains the hydraulic capacity of sanitary sewers during intense rainfall periods and reduces the amount of clean water conveyed through the sewer system and treated at the Deer Island Treatment Plant.

The BWH Campus is serviced by an existing 12-inch BWSC sanitary sewer in Francis Street and Vining Street. Sewage flows west on Francis Street, then south on Vining Street, then west on Fenwood Road, north on Riverway, then heads under the Muddy River into the town of Brookline. Sewage is picked up by the Brookline Sewer, flows north along the Muddy River, and is intercepted by the MWRA Charles River Valley Sewer. The sewage then heads to the Ward Street Headworks, Columbus Park Headworks, and discharges to the Deer Island Wastewater Treatment Plant for treatment and disposal.

221 Longwood Avenue is serviced by a 12-inch BWSC sanitary sewer in Longwood Avenue and a 10-inch BWSC sewer in Avenue Louis Pasteur. Wastewater in the 12-inch flows west on Longwood Avenue, north on Blackfan Street, and into the MWRA interceptor at the Fenway. From there the sewage heads to Ward Street Headworks, and ultimately discharges to the Deer Island Wastewater Treatment Plant. The 10-inch sanitary sewer

flows north on Avenue Louis Pasteur to Fenway, where it is intercepted by the MWRA line. From there it flows to the Ward Street Headworks, and eventually discharges to the Deer Island Treatment Plant.

Currently, the temporary trailers at the Binney Street Building Site are serviced by a 15-inch sewer on Fenwood Road. Sewage flows west on Fenwood Road, north on Riverway, then heads under the Muddy River into the town of Brookline. Sewage is picked up by the Brookline Sewer, flows north along the Muddy River, and it intercepted by the MWRA Charles River Valley Sewer. The sewage then heads to the Ward Street Headworks, Columbus Park Headworks, and discharges to the Deer Island Wastewater Treatment Plant for treatment and disposal.

7.2.2 Proposed Sanitary Sewer

The Binney Street Building and Brigham and Women’s Building will generate an average daily sewer flow of approximately 69,096 gallons per day (gpd), inclusive of mechanical equipment as shown in Table 7-1. Total sewage generation of the overall MMHC Project is provided in Chapter 7.0 of the Draft EIR/PIR.

Table 7-1 Wastewater Generation – Binney Street Building and Brigham and Women’s Building

Proposed Project	Size (sf) or # of Bedrooms	Flow Rate (gpd)	Sewage Generation (gpd)
Brigham and Women’s Building			
BWH - Wet Research	107,072	200/1,000 sf	21,414
BWH - Dry Research/Offices	45,888	75/1,000 sf	3,442
BWH - Clinics	152,960	200/1,000 sf	30,952
DMH – Office	36,020	75/1,000 sf	2,702
DMH - Clinical	16,730	200/1,000 sf	3,346
Binney Street Building			
Clinical Space	16,000	200/1,000 sf	3,200
Administrative/Offices	40,540	75/1,000 sf	3,040
Total New Wastewater Generation			68,096

The previously approved, but not yet constructed, Brigham Green Enhancement and Parking project is expected to generate 200 gpd that will discharge to an existing 12-inch sanitary sewer in Francis Street.

The Campus Additions, which consist of a 10,000 sf expansion of the NICU in the Connor’s Center for Women’s Health and a renovation of the 15 Francis Street lobby, are expected to generate approximately 2,750 gallons per day of wastewater. These Campus Additions will connect to existing building sanitary sewer systems.

7.3 Water Supply

7.3.1 Existing System Conditions

Existing water service for domestic use and fire protection is supplied from water systems owned and operated by the BWSC. Water to this area is delivered through interconnected network water distribution systems, designated by BWSC as the Southern Low Service (SLS) Systems and Southern High Service (SHS) Systems.

SLS systems are generally used to meet domestic water needs and street hydrant demand. SHS systems are generally used as the main supply to the low-pressure service system and also supply water for building fire protection systems.

The SLS and SHS system are integrally connected to form loops that allow major water demands to be fed from more than one direction. Looping allows each distribution system to function at optimum efficiency and provides a measure of safety and redundancy in the event of a water main break.

BWH is serviced by existing BWSC water mains in Binney Street (8-inch and 12-inch SLS), Francis Street (12-inch SLS and 30-inch SLS), Vining Street (12-inch SLS), Fenwood Road (30-inch SLS, 8-inch SLS and 12-inch SLS) and Huntington Avenue (8-inch SLS).

221 Longwood Avenue is serviced by BWSC water mains in Avenue Louis Pasteur (10-inch SLS), and Longwood Avenue (12-inch SLS).

7.3.2 Proposed Water Supply

Water generation is based upon estimated sewage generation with an added factor of 10 percent for consumption, system losses, and other usage. The average daily water demands for the Binney Street Building and Brigham and Women's Building are expected to be approximately 74,906 gpd, inclusive of mechanical equipment demand. Total water demand of the overall MMHC Project is provided in Chapter 7.0 of the Draft EIR/PIR.

The previously approved, but not yet constructed, Brigham Green Enhancement and Parking project is expected to require approximately 220 gpd. That demand will be met either through a new connection to the existing water main in Francis Street or through a connection to the BWH internal domestic water system.

The Campus Additions, which consist of a lateral expansion of the Connors Center for Women's Health and a renovation of the 15 Francis Street lobby, are expected to require approximately 3,025 gallons per day of domestic water. These projects will connect to existing building domestic and fire protection systems.

7.4 Stormwater Drainage

7.4.1 *Existing System Conditions*

BWSC owns and maintains the majority of the stormwater drainage systems serving the BWH Campus. The system serving the BWH Campus consists of a 12-inch drain and an 18-inch drain in Binney Street, an 18-inch storm drain in Francis Street, a 12-inch drain in Vining Street and a 36-inch drain in Fenwood Road. These lines flow into the 36-inch drain in Fenwood Road and then west on Fenwood Road towards Brookline Avenue, crossing the Riverway, and discharging at Storm Discharge Outfall 161 in the Muddy River.

221 Longwood Avenue is serviced by a 15-inch storm drain in Longwood Avenue and a 12-inch storm drain line in Avenue Louis Pasteur. These systems drain into the Charles River Basin via the Muddy River Diversion Conduit.

7.4.2 *Proposed Stormwater Drainage*

As part of the MMHC Project, the Binney Street Building and the Brigham and Women's Building are expected to result in beneficial changes in both drainage patterns and water quality. The Binney Street Building and Brigham and Women's Building are not expected to result in the introduction of pollutants, including sediments, into surface waters or local groundwater. Upon full-build out of the MMHC Project, surface parking will be eliminated.

The Brigham and Women's Building is proposed on the Main MMHC Site. The existing MMHC Site is approximately 83 percent impervious and currently covered mostly by roof area and pavement. The current design for the proposed MMHC Site will reduce the impervious area through increased landscaped areas and landscaped buffers. This additional landscaped space will not only reduce the volume of runoff, but will also enhance the quality of runoff entering the BWSC drainage system.

The Binney Street Building Site is currently covered by construction trailers and construction support space and has been in this condition for several years. In the proposed condition, the Site is expected to be nearly completely impervious.¹¹

¹¹ Although the Binney Street Site was previously a combination of brick hardscape and green landscaping, calculations of impervious, pervious and green spaces assume the current Binney Street Site use of construction trailers, bus stop for shuttles, and transformer for the Servicer Center Complex. Calculations of pervious area and green space in the proposed condition do not include the proposed green roof on the Binney Street Building. In general, the provision of a green roof on the Binney Street Building will reintroduce green and pervious surface to the Binney Street Site consistent with its historical use. Overall, there will be a significant increase in pervious and green spaces as a result of the Project, as noted in greater detail herein.

In addition to the added green space, the BWH is exploring permeable pavement materials, vegetated stormwater management areas and/or subsurface infiltration/detention systems. BWH intends to further refine the stormwater management strategy in conjunction with the progress of the design and overall sustainability objectives development.

Stormwater management controls will be established in compliance with BWSC standards and the Binney Street Building and Brigham and Women's Building will not introduce peak flows, pollutants, or sediments that would potentially impact the receiving waters of the local BWSC stormwater drainage system. Among the stormwater management controls considered for implementation will be deep sumped and hooded catch basins, sump cleaning, and oil/gas separators. Stormwater will be collected and discharged via several new connections to either the existing 36-inch drain in Fenwood Road or the 15-inch drain in Vining Street.

The previously approved, but not yet constructed, Brigham Green Enhancement and Parking project consists of the replacement of the existing conditions (pavement, roof, landscaped area) with a subsurface parking structure which will be topped with a landscaped park area. This project is expected to decrease impervious area since existing landscaped areas will be replaced with new and expanded landscaped areas. Therefore, this project is expected to improve water quality and reduce runoff.

The proposed expansion of the Neo Natal Unit and renovation and small expansion of the 15 Francis Street lobby consist of work within the existing campus footprint and is expected to have no impact on stormwater runoff conditions.

7.5 Electrical Service

7.5.1 Existing System Conditions

Two companies, NSTAR and the Medical Area Total Energy Plant (MATEP), provide existing electrical service in the LMA. MATEP is owned by Advanced Energy Systems (AES), a subsidiary of NSTAR. The BWH Campus, including the Shapiro Cardiovascular Center, has both a MATEP and NSTAR feed. The feeds enter the Tower building underground on Shattuck Street and Binney Street. 221 Longwood Avenue is fed by MATEP, via Longwood Avenue. NSTAR has recently completed upgrades in the BWH IMP Overlay District area, including Fenwood Road.

7.5.2 Proposed System Conditions

BWH is currently coordinating the estimated demands with NSTAR. Electrical demands are estimated to be as follows:

- ◆ Binney Street Building – 1,200 kVA
- ◆ Brigham and Women's Building – 4.8 MW

7.6 Chilled Water

7.6.1 Existing System Conditions

MATEP provides chilled water to the LMA through an underground distribution network. BWH uses chilled water to provide environmental cooling to BWH Campus buildings, other than the Shapiro Center which has its own chiller plant.

7.6.2 Proposed System Conditions

It is our understanding that MATEP does not currently have the additional capacity to provide the new Brigham and Women's Building and Binney Street Building with chilled water. Binney Street Building air conditioning will be provided through central electric systems.

7.7 Natural Gas

7.7.1 Existing System Conditions

National Grid (formerly Keyspan) has a network of low and intermediate pressure natural gas mains servicing BWH. The BWH Campus is serviced by two existing 6-inch Keyspan gas lines in Francis Street, a 4-inch gas line in Binney Street and a 6-inch gas line in Fenwood Road. 221 Longwood Avenue is serviced by gas lines on Longwood Avenue.

7.7.2 Proposed System Conditions

Natural gas demands are estimated to be 3,370 CFH for the Binney Street Building and 57,000 CFH for the Brigham and Women's Building.

7.8 Steam

7.8.1 Existing System Conditions

MATEP supplies steam to the BWH Campus, including 221 Longwood Avenue, through an underground distribution network. Steam is the primary source of heat for the BWH Campus.

Steam is supplied to the BWH Campus including the Shapiro Cardiovascular Center and Servicenter Complex via Binney Street and Francis Street. 221 Longwood Avenue is serviced via an existing MATEP steam line in Longwood Avenue.

7.8.2 Proposed System Conditions

It is our understanding that MATEP may not currently have the additional capacity to provide the new Brigham and Women's Building and the Binney Street Building with steam. The Proponent will monitor this energy source and if, in the future, it becomes technically feasible and economically attractive to utilize MATEP for some or all of the

energy for this new building, may choose to do so. At the current time, however, the conceptual design is for steam and chilled water to be produced onsite for the Brigham and Women's Building with high-efficiency equipment and electricity to be purchased via the grid.

Small quantities of steam needed for sterilization and humidification at the Brigham and Women's Building are expected to be imported from the steam supplied by MATEP to the existing BWH Shapiro Building.

7.9 Telecommunications

7.9.1 Existing Systems

Telecommunications infrastructure for Verizon, Comcast (formerly AT&T), RCN, and MCI/Worldcom are all present in the LMA.

The BWH Campus is serviced from telecommunication lines in Francis Street and Huntington Avenue. 221 Longwood Avenue is serviced from telecommunication lines in Fenwood Road and Avenue Louis Pasteur.

7.9.2 Proposed System

BWH will coordinate with telecommunication companies for the Binney Street Building and Brigham and Women's Building connections.

7.10 Campus Wide Energy

BWH is committed to maintaining and improving the health and well being of its patients, its staff, as well as that of the surrounding community. One of the hospital's primary guiding design principles is that improving the energy efficiency and environmental performance of a healthcare facility requires examining the entire facility from a "whole building" perspective through an integrated design process. This perspective permits the hospital to maximize the efficiency of the entire BWH Campus by incorporating individual state-of-the-art sustainable technologies into an integrated, synergistic system.

Since hospitals, by their nature are a twenty-four hour operation and intensive users of sophisticated equipment, they are large energy users. Due to the need for a consistent, reliable supply of energy to ensure the care and safety of patients, BWH is not able to rely on alternative energy sources. However, BWH has taken very seriously its leadership role in helping control excess energy use. Since 1995 BWH has commissioned mechanical systems in all new buildings, as well as in major renovations, to ensure systems are operating as efficiently as possible from their day of installation. A third-party review of the mechanical systems design, inspection of installation, and performance testing to ensure the

systems meet the design intent is conducted. BWH has also had an effective program in place to ensure chlorofluorocarbon (CFC) reduction in all heating, ventilation, air-conditioning, and refrigeration (HVAC-R) equipment purchased in the last ten years.

The hospital is continuously upgrading its facilities and equipment to ensure the most effective systems are in place. For example, a significant effort is underway to replace inefficient light fixtures to increase energy efficiency and improve illumination. Compact fluorescent lamps/ballast will be used in lieu of incandescent lamps, where possible. The highest efficiency fluorescent lamps/ballast combination will be specified for all fixtures of that type. In addition, natural lighting will be incorporated as much as possible into the IMP Projects' and Campus Additions and Campus Upgrades' design scheme.

Currently there are programs in place that are looking at ways to optimize energy performance. These programs include selection of more efficient equipment throughout the facilities, careful design of buildings to make them as effective as possible, and selecting medical equipment based on energy efficiency as well as intended performance. Achieving these improvements currently allows BWH to significantly exceed the energy efficiency requirements of Chapter 13 of the Massachusetts State Building Code (780 CMR). The Shapiro Cardiovascular Center participates in the United States Environmental Protection Agency's (US EPA) Energy Star/Green Lights program. Furthermore, it is anticipated that all new renovations in existing buildings will comply as well.

The IMP Projects and Campus Additions and Campus Upgrades will be consistent with BWH's commitment to improving BWH Campus energy efficiency.

Section 8.0

Historic Resources

8.0 HISTORIC RESOURCES

8.1 Introduction

The following section describes historic resources within and in the vicinity of the BWH Campus and generally discusses potential impacts on historic resources from the proposed Draft EIR/PIR projects.

8.2 Historic Resources

8.2.1 Existing Historic Resources

BWH owns buildings in and around the LMA, most of which are located within its 12.8-acre BWH Campus on Francis Street. None of the buildings owned by the BWH is listed in the State and National Registers of Historic Places. Two properties owned by BWH are included in the *Inventory of Historic and Archaeological Assets of the Commonwealth* maintained by the Massachusetts Historical Commission (MHC):

- ◆ Peter Bent Brigham Hospital, 15 Francis Street/721 Huntington Avenue; and
- ◆ Boston Lying-In Hospital, 221 Longwood Avenue.

Three historic resources listed in the State and National Registers of Historic Places are in the vicinity of the BWH Campus:

- ◆ Massachusetts College of Art;
- ◆ Olmsted Park System; and
- ◆ Massachusetts Mental Health Center.

In addition, several properties included in the *Inventory* are located in the vicinity of the BWH Campus. The name and address of properties listed in the State and National Registers of Historic Places and properties included in the *Inventory* within a half-mile radius of the BWH Campus are listed in Tables 8-1 and 8-2 respectively. Figure 8-1 depicts the locations of these properties; descriptions of each property are provided below.



Table 8-1 State and National Register-Listed Resources Within or in the Vicinity of the BWH Campus

No.	Name	Address
A	Olmsted Park System (including the Riverway)	Sections of the Back Bay Fens*, Emerald Necklace Parks* (including the Riverway, which is in a Protection Area)
B	Isabella Stewart Gardner Museum	280 The Fenway
C	Massachusetts School of Art	364 Brookline Avenue
D	Massachusetts Mental Health Center	74 Fenwood Road
E	Mission Hill Triangle District	Huntington Avenue, Smith, Worthington, Wigglesworth and Tremont streets
F	Timothy Hoxie House	135 Hillside Street
G.	Mission Church Complex	1525 and 1545 Tremont Street, 100 St. Alphonsus Street, and 80, 90, and 100 Smith Street

* Property listed as a Boston City Landmark

Table 8-2 Properties included in the *Inventory of Historic and Archaeological Resources of the Commonwealth* Within or in the Vicinity of the BWH Campus

No.	Name	Address
1	Southwest Fenway District	See Figure 8-1
2	Emmanuel College Main Building	400 The Fenway
3	Simmons College Main Building	300 The Fenway
4	Francis Street and Fenwood Road District	Francis Street and Fenwood Road
5	Winsor School	103 Pilgrim Road
6	Simmons College, North Hall	86 Pilgrim Road
7	Simmons College, Refectory	Behind Pilgrim Road
8	Simmons College, South Hall	321 Brookline Avenue
9	Former New England Deaconess Hospital Building	175 Pilgrim Road
10	Former Palmer Hospital Building	195 Pilgrim Road
11	Boston Public Latin School	78 Avenue Louis Pasteur
12	Vanderbilt Hall	245 Longwood Avenue
13	Boston Lying In Hospital**	221 Longwood Avenue
14	Massachusetts College of Pharmacy	179 Longwood Avenue
15	Girl's Latin School and Normal School	Palace Road, Tetlow Street, Huntington Avenue
16	Children's Hospital Administration Building	300 Longwood Avenue
17	Harvard Medical School District	210, 220, 230, 240, 260 Longwood Avenue and 25 Shattuck Street

Table 8-2 Properties included in the *Inventory of Historic and Archaeological Resources of the Commonwealth* Within or in the Vicinity of the BWH Campus (Continued)

No.	Name	Address
18	Harvard Dental School	188 Longwood Avenue
19	Former Angell Memorial Hospital	180 Longwood Avenue
20	Westcourt Apartment Block	164 Longwood Avenue
21	Carlton Apartment Block	160 Longwood Avenue
22	Thomas M. Rotch Jr. Memorial Hospital For Infants	55 Shattuck Street
23	Peter Bent Brigham Hospital**	721 Huntington Avenue/ 15 Francis Street
24	Farragut School	10 Fenwood Road
25	Boston Public Library Parker Hill Branch	1497 Tremont Street
26	Stone/Warren House	139 Hillside Street
27	Parker Hill/Mission Hill Triple Decker District	Calumet, Sachem, Oswald, St. Alphonsus, Hillside, Iroquois streets
28	Tremont Street District	Tremont Street
29	Parker Hill/Mission Hill North Slope District	Parker Tremont, Burney, Delle, Allegheny, Hillside, Terrace streets; Terrace Pl., Folsom Ave.

Key: ** Property located within the BWH Campus

Properties Listed in the State and National Registers of Historic Places

A. Olmsted Park System, Sections of the Back Bay Fens and the Emerald Necklace Parks

The Back Bay Fens and the Emerald Necklace Parks were designed by Frederick Law Olmsted as part of the Boston Park System. Landscaped as a park, the Muddy River runs through the Fens, and a conduit was created to carry the overflow of Stony Brook to the Charles River. To accommodate the various city streets in the area, several bridges were also constructed through the Fens and Emerald Necklace Parks. Simple in design, the Fens consists of a passive park of walkways and a bridle path. When the Charles River dam was completed in 1910, the salt water marshes began to die and three of the large marshes on the southern half of the Fens were filled, and the Victory Garden, part of Olmsted’s original design, was reconfigured in the early 20th century for playing fields. Despite the changes to the Fens in the 20th century, it remains an important and noteworthy resource in the Olmsted Park System Historic District. The Emerald Necklace Parks is similar in design to the Fens. The portion of the Emerald Necklace Parks adjacent to the LMA consists of low lying areas surrounding the Muddy River with meandering pathways on both sides of the waterway and bounded on the southwest by the landscaped Riverway. The Riverway itself is located within a Boston Landmarks Commission designated Protection Area.

B. Isabella Stewart Gardner Museum (280 The Fenway)

Isabella Stewart Gardner purchased the property at the corner of Palace Road in the 1890s. She hired architect Willard T. Sears to design Fenway Court as a personalized building to incorporate architectural and cultural pieces acquired by Mrs. Gardner in her travels and serve as a museum setting for other works of art. Construction began in 1900, making it the first building along this stretch of the Fenway. Mrs. Gardner opened her museum to the public in February of 1903.

The Isabella Stewart Gardner Museum is a Venetian inspired residence-museum in Italian Palazzo format, with a four-story main block and a hipped red Spanish tiled roof that is crowned by gabled skylight above the courtyard. The simple front façade is composed of six bays of tall windows at the 2nd and 3rd stories and smaller windows with metal grilles at the 1st and 4th stories. The openings have stone sills and flat arches. The central entry, flanked by carved marble lions, has a flat-roofed portico with a carved relief of St. George and the Dragon.

The building is significant both as an important work by Boston architect Willard T. Sears and for its association with Isabella Stewart Gardner, who made a significant contribution to Boston's cultural and civic affairs.

C. Massachusetts College of Art (364 Brookline Avenue)

Designed by the architectural firm of Henry and Richmond, the Massachusetts College of Art was constructed in 1929 and is currently part of the BIDMC East Campus. The large tan brick, modern gothic/art deco building was designed for the Massachusetts School of Art which was established as the Massachusetts Normal Art School in 1873. A six-bay, four-story central section is flanked by three-story wings. The building is ornamented with panels, gargoyles, and roundels. Inscriptions above the entries read "the useful and elegant arts minister to the comfort of man and gladden his eye with beauty" and "every genuine work of art has as much reason for being as the earth and sun." A large modern addition, the Shapiro Clinical Center at Beth Israel Deaconess Medical Center, is attached to the rear of the building.

D. Massachusetts Mental Health Center (74 Fenwood Road)

Historically known as Boston State Hospital, Massachusetts Mental Health Center is listed in the National Register of Historic Places as a contributing complex in the State Hospitals and State Schools Thematic Nomination. MMHC was designed by the firm of Kendall, Taylor & Co. in 1912 in the Late Gothic Revival Style. The hospital is significant for its associations with the state hospital system, its urban rather than rural location which was more commonplace in the nineteenth century, its establishment as an observation hospital, and its emphasis on research, social services, and prevention through clinical programs. It was one of the earliest hospitals of its type, as well as a national model and training ground for

leaders in the psychiatric field. MMHC is also significant for the architecture of the four-story, red brick, e-shaped Main Building, red brick Power House and cast iron picket fencing.

E. Mission Hill Triangle Architectural Conservation District

The Mission Hill Triangle District comprises 71 buildings in a triangular area bordered by Huntington Avenue, Tremont and Worthington Streets. In 1871, developer George D. Cox began building single-family row houses resembling those in the Back Bay. By the early 1880s, Huntington Avenue was extended, bringing with it electric car service that influenced new housing types. The Helvetica, a distinctive apartment hotel, was constructed at 706-708 Huntington Avenue in 1884-1885; three-family houses were built in 1890 on Wigglesworth and Worthington Streets; and the Georgian Revival apartment building known as the Esther (682 Huntington Avenue/142-148 Smith Street) was constructed in 1912. The District, which is designated a Boston Architectural Conservation District, exemplifies the development of this urban neighborhood from the 1870s to the 1910s. The buildings of brick, brownstone, sandstone and marble trace the changes from single-family housing to more modest three-family buildings and apartment buildings.

F. Timothy Hoxie House (135 Hillside Street)

The Timothy Hoxie House, built in 1854, is the only Italianate Villa in the Mission Hill area and is one of the few remaining examples of this style in the city of Boston. It is also one of the few remaining intact residences from the 1845 Highland Place subdivision. This development, bounded by what became Huntington Avenue, Parker Hill Avenue, and Sachem Street, was made possible by the establishment in the mid-1840s of a Roxbury Crossing commuter railroad station on the Boston and Providence line. In 1854, Timothy W. Hoxie, a Boston Commission merchant purchased a lot on Hillside Street and commissioned the construction of a house upon it which would remain his residence until 1882. Later in the 1880s, the house was moved across Hillside Street to its present location at 135 Hillside.

G. Mission Church Complex (1525 and 1545 Tremont Street, 100 St. Alphonsus Street, and 80, 90, and 100 Smith Street)

The Mission Church Complex is a grouping of six buildings including the Basilica of Our Lady of Perpetual Help commonly known as Mission Church. The group constructed between the years 1878 and 1910 signifies the importance of the church in the community. Starting with the construction of the Basilica, the group grew to include a rectory, convent, two schools, and a men's club. The Mission Church Complex was designated a City of Boston Landmark in August 2004.

Prominently sited on the gentle slope of Mission Hill, the main body of the Basilica of Our Lady of Perpetual Help was completed in 1878 and designed by the New York City based

architectural firm of Schickel & Ditmars. The two towers were added in 1910. Constructed on Roxbury puddingstone and trimmed with Quincy granite, the large Romanesque Revival basilica has a main façade with a blind arcade, large rose window, tripartite entrance set in round arches. Massive oak doors are set within entrance tympanums with carved sculptural figures. The interior includes stone, marble, stained glass and wood features, a fine example of a mosaic and the 110 foot dome topped with an octagonal cupola visible on the exterior.

Constructed in 1903 Our Lady of Perpetual Help Rectory was designed by the architect F. Joseph Untersee. The L-shaped, four story Victorian Gothic style rectory is located at the corner of Tremont and Alphonsus Streets and is connected to the Basilica by a low connector. Formally finished on all sides, the rough faced granite walls set off the polychromatic red brick and limestone trim. The high style and level of detail found in the architecture of the structure indicates the parish's prosperity only thirty five years after its founding.

Two school buildings are located in the district, the Mission Church School near Tremont Street and the Mission Church Grammar School near St. Alphonsus Street. Constructed in 1889, the Mission Church School was designed by the architect Henry Burns. The Italianate four story parochial school has an irregular plan and is composed of red brick with white granite trim and a Roxbury puddingstone base. The Mission Church Grammar School was constructed in 1901 as a more subdued three story red brick mixed Queen Anne/Georgian Revival style school building. Prior to its use as a school, the Grammar School was a temporary rectory for the Basilica.

A restrained example of Queen Anne architecture, the Mission Church Convent is treated with granite trim and has noteworthy terra cotta ornamentation at the third floor. Attributed to architect Henry Burns, the Convent was constructed in 1889. A third floor was added in 1901 to accommodate additional nuns who staffed the growing number of students enrolled in the parochial schools.

Completing the district, St. Alphonsus Hall was constructed in 1898 as a young men's clubhouse. The Romanesque Revival hall stands out in the district with its use of Roxbury puddingstone and buff colored brick. Designed by the German-Swiss architect F. Joseph Untersee, the architecture possesses decidedly Germanic influences. The interior includes a marble foyer, reception room, library, recreation room, gymnasium, and theatre complete with galleries to seat 1142 people.

Inventoried Properties

1. Southwest Fenway District (280, 300 and 400 The Fenway, all park strips and frontages facing the Fens and Muddy River between Louis Prang Street and Brookline Avenue)

The Southwest Fenway District is a significant grouping of institutional buildings facing the Fenway, Muddy River and Back Bay Fens. The buildings in the district, all constructed after the implementation of the Olmsted plan, include the Simmons College Main Building, Emmanuel College Main Building, the Sears' Venetian Fenway Court and the Gardner Museum.

2. Emmanuel College Main Building (400 The Fenway)

The 1916 Emmanuel College Main Building was designed by the architectural firm of Maginnis and Walsh for the Fenway Academy of Notre Dame and Convent. The college was the first Catholic college for women in New England. Designed in the Modern Gothic style, the imposing three-story building has a projecting wing and a large off-center bell tower. Large Gothic arched windows are separated by wall buttresses, and the peaked roof is dotted with small gables.

3. Simmons College Main Building (300 The Fenway)

The large Classical Revival Main Building was constructed in three stages from 1901 to 1929. Designed by the well-known architectural firm of Peabody and Stearns, the Main Building at Simmons College features a large central pedimented entry pavilion and Georgian style cupola. The two wings were added later and extend east and west along the façade line and are similarly detailed with brick walls and limestone string courses.

4. Francis Street and Fenwood Road District (Francis Street and Fenwood Road)

The Francis Street and Fenwood Road District consists of a group of residential single-family and three-decker houses and a few brick multi-family residential buildings along Francis Street and Fenwood Road from the late 19th and early 20th centuries. Most of the houses in the neighborhood have retained original porches, windows and maintain natural siding. Edges of the district along Huntington Avenue include brick multi-family properties dating from the turn of the 20th century.

5. Winsor School (103 Pilgrim Road)

The Winsor School was established in 1886 near the Boston Public Garden and moved to the Fenway area in 1910 when this building was designed by R. Clifton Sturgis. The Modern Gothic three-wing school building was designed with a swimming pool, playroom, outdoor playground and open-air classroom space reflecting the popular idea at the time to

involve females in sports. The brick building is detailed with limestone sills, lintels, string courses, quoins, oriels, and coping. The central gabled pavilion contains a tall Gothic window, and the roof is crowned by a central clock tower.

6. Simmons College, North Hall (86 Pilgrim Road)

The North Hall at Simmons College, constructed in 1906-7, was designed by architect Guy Lowell. The Georgian Revival nine-bay, brick dormitory building resembles the South Hall at Simmons College. The brick building features stone sills, flared lintels and a denticulated cornice. The North Hall is accessed by the entry on the southwest end wall and is attached to the Refectory by a one-story connector.

7. Simmons College, Refectory (Behind Pilgrim Road)

Constructed as a dining hall in 1905 by Guy Lowell, the Refectory is one of Simmons College's early structures. The rectangular plan brick building with a hipped roof features large round arched windows along the façade and small round windows open from the attic level. The Refectory is connected to the North Hall at 86 Pilgrim Road.

8. Simmons College, South Hall (321 Brookline Avenue)

The South Hall at Simmons College was constructed in 1905 by renowned architect Guy Lowell. The Georgian Revival style nine-bay, red brick building is four stories high and accentuated with light stone cornices, flared lintels and keystones, and a pedimented main entry. The South Hall was the first residential facility erected on the present campus and one of three Simmons College buildings designed by Guy Lowell including the North Hall and Refectory.

9. Former New England Deaconess Hospital Building (175 Pilgrim Road)

New England Deaconess Home and Training School was founded in 1889 by eight Methodist Deaconesses. The New England Deaconess Hospital was constructed in 1903-1907. The Georgian Revival style, three-story hospital is nine bays long with a central pediment and pilasters. Light colored stone details accentuate the façade. Deaconess was the first hospital to perform insulin treatment for patients in New England.

10. Former Palmer Hospital Building (195 Pilgrim Road)

Originally known as the Palmer Memorial Hospital, the imposing Georgian Revival building originally housed patients from the Cullis Consumptive Home in Roxbury and ministered to acutely ill patients requiring radium, deep X-ray therapy and surgery. The five-story brick building features a central three-bay pavilion with three-story pilasters. The nine-bay-wide and five-bay-deep building is accentuated with dentil courses and quioning.

11. Boston Public Latin High School (78 Avenue Louis Pasteur)

The Boston Public Latin School is architecturally notable as an example of Georgian Revival Institutional design which has significance as the present home of Boston's Public Latin School, the oldest public school in the United States, founded in 1635. Originally housed in the homes of school masters, the school had funds appropriated in 1645 and its building stood on the north side of School Street near Tremont Street. Architect James E. McLaughlin designed the structure which accommodated 1,310 pupils upon its completion in 1922. In 1932 and 1933, the building was enlarged to about twice its original size.

The large school building is composed of symmetrically arranged blocks. The main building is gable-roofed, crowned by a copper cupola, and features a tetrastyle pedimented portico on the 13-bay width front façade. At either side of the central block are flat-roofed wings, also of three stories, which project to the rear for lengths of 35 bays. The rear façade comprises the side wings (four bays wide on rear) flanking a one-story section inset with three-story connecting portion behind. The one-story portion contains six bays of arched windows, separated by paired pilasters.

12. Vanderbilt Hall (245 Longwood Avenue)

Designed by the architectural firm of Coolidge, Shepley, Bulfinch and Abbott and constructed in 1926-1928, Vanderbilt Hall was designed as living quarters for the students of the Harvard Medical School. Situated immediately opposite the Harvard Medical School campus, Vanderbilt Hall is a four story, predominately rectangular plan Mediterranean Revival style building with a distinctive concave exterior wall constructed to follow the half-circle Avenue Louis Pasteur. Broad copper eaves, balustraded balconies, round arches with quoins at the first floor, and iron grillwork gates enliven the regularized window pattern of student rooms. Designed by one of the pre-eminent architectural firms of the day, Vanderbilt Hall remains one of the few Mediterranean Revival style structures in Boston.

13. Boston Lying-In Hospital (211 Longwood Avenue)

The Boston Lying-In Hospital was established in 1832 for the care of poor women. Following several locations throughout Boston, planning for a new hospital and nurses home along Longwood Avenue began in 1920. Coolidge & Shattuck were selected as the architects and construction began in 1921. The move to the new facilities was completed on January 1, 1923.

The building is Mediterranean Revival in style, four stories in height, and "U" shaped in plan. It features a recessed entry portico with eight paired Tuscan columns. Coolidge & Shattuck won the City's first Harleston Parker Gold Medal, an award given by the Mayor for the most beautiful piece of architecture, building, monument or structure within the City limits or Metropolitan Park District, for this building. In 1966, the Boston Lying-In Hospital joined with the Free Hospital for Women to form the Boston Hospital for Women, and in

1980, the Boston Hospital for Women, the Peter Bent Brigham Hospital and the Robert Breck Brigham Hospital joined to form Brigham and Women's Hospital. In the early 1990s, one of the original wings of the U-shaped Boston Lying-In Hospital building was removed and replaced by a modern building, the Eugene Braunwald Research Center (1992).

14. Massachusetts College of Pharmacy (179 Longwood Avenue)

The Massachusetts College of Pharmacy main building was designed by the prominent architecture firm of Kilham and Hopkins and constructed in 1919 in the Classical Revival style. A monumental stair leads up to a central double pedimented portico whose frieze reads "Massachusetts College of Pharmacy." The seven bay central portico is flanked on each side by six bay wings with casement windows set within a light stone trim with keystone arches of brick above. Founded in 1823, the Massachusetts College of Pharmacy is the second oldest college of its type in the United States. Formal classes were begun in 1867.

15. Girl's Latin School and Normal School/Roxbury Community College (Palace Road, Tetlow Street, Huntington Avenue)

The Girl's Normal School opened in 1852 as the City's first effort to educate girls past grammar school. One hundred girls were enrolled and trained as teachers for the City's primary and grammar schools. The school became the Girl's Normal and High School, but by 1854 the two had separated, as four years of high school became a requirement to enroll in the Normal School. To meet the growing demand for girl's college preparatory education, the Girls' Latin School was established in 1878. It was not until 1907 that the Normal School and Girls' Latin occupied the same site when the existing buildings on Huntington Avenue were constructed.

The architecturally noteworthy Beaux-Arts red brick school buildings were designed through a collaborative effort of the architecture firms Peabody & Stearns, Maginnis, Walsh & Sullivan, and Collidge & Carlson. Originally designed as a cluster of four buildings, only three remain including the Girls' Latin School, the Model School, and the Normal School. The fourth structure, the Common Building has been replaced with a modern multi-story brick, concrete and glass structure.

16. Original Children's Hospital Administration Building (300 Longwood Avenue)

The original Children's Hospital building, built in 1912, is a noteworthy example of Classical Revival Institutional architecture. Designed by Shepley, Rutan and Coolidge, who designed several other institutional buildings in the LMA, the Children's Hospital building features a Corinthian-columned portico and grand front façade containing 25 bays in five parts. The building is crowned by a copper dome.

The building is significant due to its association with Children's Hospital, the third pediatric hospital established in America, which has since achieved national prominence. The hospital was incorporated in 1869 by Chandler Robbins, George H. Kuhn and Nathaniel H. Emmons. Nathaniel Thayer was its first president. Objectives outlined in the bylaws were the medical and surgical treatment of sick children; instruction in the diseases of children; and instruction of young women in the duties of nurses and nursery maids.

17. Harvard Medical School (210, 220, 240, 260 Longwood Avenue/25 Shattuck Street)

The Harvard Medical School was built between 1906 and 1908 in the Classical Revival style. It consists of five white marble buildings in a U-shaped plan around a monumentally-scaled, landscaped quadrangle. The buildings were designed by Shepley, Rutan and Coolidge who designed many of the buildings in the surrounding LMA. They are connected to one another by a raised marble terrace and marble banister further encloses the group along Longwood Avenue.

18. Harvard School of Dental Medicine (188 Longwood Avenue)

Immediately abutting the project site, and connected at its rear elevation to the Interim Building proposed for demolition, this Classical Revival style building was constructed in 1908-1909 as a classroom and clinical facility. Designed by the Boston firm of Shepley, Rutan & Coolidge, the brick and marble-trimmed building is two stories on a raised basement and has a six bay façade with a centered marble entry pavilion. Marble is also used for facing on the basement level of the building, the window keystones, and the cornice. Harvard College was the first US university to set up a dental school (established in 1867).

19. Former Angell Memorial Animal Hospital (180 Longwood Avenue)

The Angell Memorial Animal Hospital was designed by the architecture firm of Putnam & Cox and constructed between 1913 and 1915. The Georgian Revival style institutional building is composed of a central three-story balustraded block, flanked by two-story wings (with later third-story additions) that are two-bays wide and twelve-bays deep.

The building was established as a memorial to George Thorndike Angell, who founded the Massachusetts Society for the Prevention of Cruelty to Animals in 1868. When the Angell Memorial Hospital opened in 1915, it was the largest veterinary hospital in the country. In 1976, the Angell Memorial Animal Hospital moved to larger quarters at 350 South Huntington Street in Jamaica Plain. The building is now part of the Harvard University Longwood Campus.

20. The Westcourt Apartments (164 Longwood Avenue)

The Westcourt is a three-story brick apartment building, designed by John Holmes and constructed in 1900. The six-bay by five-bay building features Romanesque inspired ornamentation at the windows and entrance, and a prominent metal cornice. The building is notable for its associations with the Holmes Brothers who were also responsible for designing and constructing 160 Longwood Avenue, 641 Huntington Avenue, and 643 Huntington Avenue. The building is part of the Harvard Longwood Campus.

21. The Carlton Apartments (160 Longwood Avenue)

The Carlton is a brick row-type residential structure, designed by William Holmes and constructed in 1892. The building features a four-bay façade and side hall plan, metal bay windows with panel and pediment embellishment, sandstone sills, lintels, and door surrounds, and a prominent bracketed cornice. The building is architecturally noted as a good example of a panel brick style apartment building and is one of only a few residential structures remaining in this neighborhood. The building is part of the Harvard Longwood Campus.

22. Thomas Morgan Rotch, Jr. Memorial Hospital for Infants (55 Shattuck Street)

The Thomas Morgan Rotch, Jr. Memorial Hospital for Infants was designed by Shepley, Rutan and Coolidge and built in 1910. The building is a fine example of Classical Revival architecture by one of Boston's most prominent architectural firms who were responsible for several buildings in the LMA. The building is a white marble clad structure with a monumental Ionic portico and was designed to coordinate with the adjacent Harvard Medical School buildings.

23. Peter Bent Brigham Hospital (721 Huntington Avenue/15 Francis Street)

The will of Peter Bent Brigham provided the funds for the establishment of a hospital for the care of the poor in Suffolk County in 1877. In 1902 a hospital corporation was organized and a competition for the design of the new hospital was instituted. The architectural firm of Codman & Despradelle was chosen from the six competing firms. The hospital was opened in 1913 for the admission of patients.

Not long after its dedication, the design of the new hospital was cited for its role in the development of hospital architecture in America. Designed in the pavilion style, the Administration Building with its central Doric style pedimented portico is flanked on both sides with two projecting wings. Four pavilion style wards ran parallel down Francis Street. Each ward was connected to the other, and in turn to the Administration Building, and each terminated with an octagonal pavilion. The pavilion style wards have been demolished and

replaced with modern hospital buildings, but the Administration Building and projecting wings, though with some alterations, maintains its historic integrity and presence at Brigham Circle.

24. Farragut School (10 Fenwood Road)

The Farragut School was constructed in 1903 and opened in January 1904 as a 12-classroom primary school. Designed by the renowned architecture firm of Wheelwright and Haven, the Farragut School was considered experimental with its attempts to exclude sunlight from the classrooms to benefit the eyes. Despite the fact that this was the most expensive school erected at the time, the school board determined as early as 1905 that the lack of sunlight was a detriment.

The red brick Georgian Revival school building is complimented with light sandstone trim, quoins, stringcourses, keystones and classical surrounds at the entries. Nine-over-nine sash with flat arches, stone sills, keystones and roundels enclose a central playground. A low brick and cast iron fence parallel to the street complete the courtyard.

25. Boston Public Library Parker Hill Branch (1497 Tremont Street)

The Parker Hill Branch of the Boston Public Library was completed in 1931 from designs provided by the nationally renowned Boston-based architecture firm of Cram and Ferguson. Constructed in the Jacobethan style employing stone and brick, the plan of the structure is a rectangle. Fluted pilasters flank the arched main entrance on Tremont Street. A panel over the entrance features seal of the City of Boston and inscription of the library's name. Multi-pane windows set high on the façade are trimmed with white stone. The roof is covered in green slate shingles. Built during the height of the Depression, the estimated construction costs of the library were \$85.

26. Stone/Warren House (139 Hillside Street)

Constructed in the mid 1840s as part of the Highland Place subdivision, the Stone/Warren House is one of the oldest homes remaining in the neighborhood from that subdivision and is an important example of Gothic Revival style of architecture. Typical of that style, the house possesses overhanging steep roof gables and dormers, trimmed with cut-out or carved patterned bargeboarding and has arch attic and dormer windows displaying moulded trim and interlaced pointed arch mullions. The name of the house derives from two of its early residents. In the 1850s, Rev. Andrew L. Stone, a pastor of the Park Street Church, Boston acquired the house and lived in it until the end of the Civil War when he sold it to Samuel Mills Warren, a minister in the Swedenborgian Church who lived in the home until 1898.

27. Parker Hill/Mission Hill Triple Decker District

Located on Calumet, Sachem, Oswald, St. Alphonsus, Hillside and Iroquois Streets in the Mission Hill neighborhood of Boston, the Parker Hill/Mission Hill Triple Decker District is characterized by high quality of architect-designed triple deckers with a few single- and double-family Queen Anne style houses found scattered throughout the district. Many of the multi-family wood-frame houses were designed by Robert Watson and Samuel Rantin and Son, who specialized in three family-housing. Designed to be reminiscent of the higher style architecture in Jamaica Plain and Roxbury, the houses are architecturally detailed and most are gable-roofed.

28. Tremont Street District (Tremont Street)

The Tremont Street District consists of a series of four buildings from 1508-1542 Tremont Street. It is one of the few remaining intact late 19th and early 20th century streetscapes on Tremont Street. The C.A. Russell designed commercial and residential block at 1508-1518 Tremont Street at the corner of Burney Street was constructed in 1897. C.A. Russell designed a number of suburban houses and residential/commercial blocks in Roxbury. The Queen Anne, Georgian Revival three story orange brick building stands out with white stone trim. Although original ground floor storefronts have been altered, brick Doric pilasters are still present and metal oriels mark the second and third floors. The neighboring S.J. Rantin and Son designed commercial and residential block at 1520-1526 Tremont Street was constructed one year later in 1898 and completed in 1899. The buff brick building retains original fluted Corinthian pilasters and metal oriels. S.J. Rantin is also attributed to 1528-1530 Tremont Street. Also a Queen Anne and Georgian Revival commercial and residential building, this property was constructed in 1912 and retains similar details as its neighbor. Across Pontiac Street, 1536-1542 Tremont Street is an eclectic Queen Anne commercial and residential block constructed in 1899. Designed by architect Robert A. Watson, a prolific designer of three-deckers in Boston, the red brick and brownstone block is known as the "Murphy Building" as noted under the roofline with raised lettering. The district maintains the traditional streetcar commercial/residential feel and association of its day.

29. Parker Hill/Mission Hill North Slope District

The Parker Hill/ Mission Hill North Slope District consists of mostly residential structures dating from 1845-1910, which employ a variety of vernacular architectural styles and building materials. Among the housing types are modest worker's cottages, larger single family and double family homes, bow and octagonal front row houses, triple deckers, and apartment buildings. Development of the area occurred over three main phases: 1) early estate subdivision and suburban house construction, 1845-1865; 2) introduction of urban housing forms, 1865-1885; and 3) accelerated residential development, 1885-1910. Italianate/Mansard and Greek Revival/Mansard homes are typical extant examples from the early estate subdivision and suburban house construction phase. From the period of the

introduction of urban housing forms are left extant examples of mansard bow and bow front rowhouses. Exemplifying the accelerated residential development phase are Multi-family homes, Queen Anne triple-deckers, and Georgian Revival apartment buildings. The district also has notable religious structures executed in the Italianate, Gothic, and Victorian Gothic styles, among others employing wood, brick, and stone.

8.2.2 Potential Impacts

8.2.2.1 Binney Street Building and Brigham and Women's Building

During the term of the BWH 2010 IMP, BWH proposes the IMP Projects, Campus Additions and Campus Upgrades, and implementation of the previously-approved Brigham Green Enhancement and Parking. BWH does not plan any significant changes to other BWH Campus buildings over the next ten years.

The Binney Street Building is proposed on BWH-owned land which is currently occupied by construction trailers which are no longer in use, the transformer for the Servicenter Complex and the former bus stop for the Partners HealthCare and LMA shuttles.

The Brigham and Women's Building is proposed to be constructed on land which it will lease on a long-term basis from the Commonwealth of Massachusetts acting by and through its DCAM. Prior to the Commonwealth's lease of the property, it was anticipated that demolition of the MMHC buildings would likely be part of the redevelopment of the site. In June 2003, DCAM, DMH, MHC and the Boston Landmarks Commission (BLC) entered into a Memorandum of Agreement (MOA) for the disposition and redevelopment of MMHC. A copy of the MOA is attached as Appendix E.

The MOA states that if preservation of all character-defining features is not feasible, preservation of portions of contributing resources, as identified in the National Register nomination, is encouraged. The Project includes an architectural salvage and reuse plan that ensures the preservation of portions of the contributing buildings' character-defining features. As discussed below, the Proponent has developed a draft architectural salvage and reuse plan. The Proponent is working with BLC staff to finalize and implement the salvage and reuse plan after the Proponent acquires leasehold site control.

The MOA further stated that prior to any major changes on the MMHC Site, photographic recordation and documentation must be prepared and submitted for review by MHC, with final copies of the resulting documentation made available to MHC and BLC. In December 2005, archival black and white photographs documenting the character-defining features of MMHC were submitted to the MHC and BLC. In letters dated January 3, 2006 and January 25, 2006, BLC and MHC stated that the documentation submitted fulfilled the photographic recordation stipulation of the MOA.

Visual Impacts

As discussed in greater detail in the Draft EIR/PIR, Section 5.0 Urban Design, the designs of the Binney Street Building and Brigham and Women's Building will include a mix of building heights, materials and massing.

The Binney Street Building is proposed as a six-level structure between Binney Street, Francis Street and Fenwood Road, adjacent to the Servicer Center Complex. The building presents a uniform roof line, but is five floors at Francis Street and six floors at Fenwood Road due to the change in grade across the site. The Binney Street Building will be consistent in height with the adjacent Servicer Center Complex, and will be separated from the Francis Street and Fenwood Road Historic Area by the existing adjacent ten story Shapiro Cardiovascular Center.

The three story Partial Hospital/Fenwood Inn, included in the MMHC Project, will provide a transition between the Francis Street and Fenwood Road Historic Area to the east and the new Brigham and Women's Building to the west. The Residential Building, included in the MMHC Project, is located between the Riverway to the west of the Main MMHC Site and the Brigham and Women's Building. The massing of the Residential Building will be set back from the street to accommodate the mature trees. At its northwesterly end, the mass of the Residential Building is set back 30 feet to 40 feet from the Riverway property line and follows its curved geometry to the approximate midpoint of the Riverway frontage before stepping back first perpendicular to the Riverway for about 30 feet and then to the orthogonal geometry established by a plane parallel with Fenwood Road. The resulting notched geometry of the footprint establishes several distinct zones around the site.

Shadow Impacts

New shadow from the Binney Street Building and Brigham and Women's Building as well as the other MMHC Project buildings will generally be cast to the northwest, north and northeast on paved streets or on predominately late 20th century institutional buildings in the area.

The shadow study results indicate that the IMP Projects will not cause substantial impacts. In general, new shadow from the MMHC Project buildings will largely be limited to the immediate surrounding public ways and sidewalks of Fenwood Road, the Riverway, Binney, Francis and Vining Streets. Some shadows from the MMHC Project will be cast on the Riverway portion of the Emerald Necklace, however, impacts will be limited to the morning hours. As the sun moves across the sky during these impacted times the shadows will also be moving, therefore no one particular area of the Riverway will be in shadow during the entire impacted period. There will be no new shadows on the Riverway open space during the midday, afternoon and evening hours studied.

Impacts to other historic resources in the Project's vicinity will also be minimal. The Francis Street and Fenwood Road Historic Area will experience a limited amount of new shadow during the late afternoon.

8.2.2.2 Brigham Green Enhancement and Parking (Previously Approved)

The previously-approved Brigham Green Enhancement and Parking project will transform this part of the BWH Campus and have a positive impact on the Peter Bent Brigham Hospital building. Any impacts to historic resources associated with the Brigham Green Enhancement and Parking project will be limited to potential geotechnical impacts which will be monitored and mitigated.

The area to be developed currently includes the one-level Biophysics Building, constructed between 1975 and 1985, with approximately 8,492 square feet, an entry drive leading up to the entrance at 15 Francis Street, and a number of surface parking spaces. The existing Biophysics Building will be removed, and the facades of the Peter Bent Brigham Hospital Building, Carrie Hall and the Clinics Building will be rebuilt with masonry similar to the original design. The area in front of 15 Francis Street will become a new green space sloping gently down from the Peter Bent Brigham Hospital building entrance to Brigham Circle at Huntington Avenue and Francis Street. Constructed below the new green space will be a drop-off area for the parking garage. The vehicular entry for drop-off and parking will be moved as far to the west along Francis Street as possible to improve traffic conditions at Brigham Circle and enhance the pedestrian character of the area.

Brigham Green will be reconfigured as a broad green terraced lawn to set off the entrance to the Peter Bent Brigham Hospital. Reconstruction of this area will improve the pedestrian experience moving through the BWH Campus to Shattuck Street and the Harvard Medical School. Pedestrians arriving at Brigham Circle from the MBTA Green Line stops can make their way through the new green space connecting to Shattuck Street through the portico during business hours, and ultimately the Harvard Medical School Lawn at the head of, and on axis with, Avenue Louis Pasteur, thereby strengthening a sequence of green spaces from the Fens all the way to Brigham Circle.

Enhancing Brigham Green and rebuilding the altered facades of the Peter Bent Brigham Hospital building, Carrie Hall and the Clinics Building will redefine Brigham Green as a major public space in Boston and as a dignified entry to the east end of the BWH Campus and have a positive impact on the Peter Bent Brigham Hospital building.

Geotechnical impacts on historic resources in the vicinity of the garage are not anticipated, however, geotechnical monitoring will be undertaken during construction. The proposed garage will extend up to four levels below grade and the bottom of the excavation will likely be below the bedrock surface. The footprint of the garage will extend to within close

proximity to the Peter Bent Brigham Hospital building foundations. Reinforced concrete slurry walls will likely be used to provide temporary support of the excavation and protection of the existing building foundations.

Monitoring of the performance of the temporary earth support system will be performed, and will include offset monitoring points on the earth support, inclinometers, and horizontal and vertical monitoring points to be established on nearby structures, including the Peter Bent Brigham Hospital Building.

8.2.2.3 Campus Additions - Neo Natal Intensive Care Unit and 15 Francis Street Lobby Renovation

The proposed 13,000 sf addition to the Neo Natal Intensive Care unit will consist of a lateral expansion of the 6th floor of the Connor's Center for Women's Health. The expansion will be confined to the rooftop of the existing building and is not anticipated to result in any impacts to historic resources in the vicinity.

The proposed renovations to the lobby of 15 Francis Street will result in modernized amenities which include a small addition to the Peter Bent Brigham Building on the Shattuck Street façade to create a new lobby area and provide a renovated restaurant. This renovation and small addition will establish a porous connection with Harvard Medical School by opening views to the Harvard Medical School open space. The small addition will be located at the rear of the building and will not adversely impact the character-defining features of the Peter Bent Brigham building.

As the plans for the Neo Natal Intensive Care Unit expansion and renovation and expansion of 15 Francis Street advance, BWH will coordinate project reviews with the Massachusetts Historical Commission and Boston Landmarks Commission as applicable.

8.3 Archaeological Resources

There are no known archaeological resources within the BWH Campus. As documented by historic maps at the BRA and other repositories throughout the City, the BWH Campus is located completely on filled land. In the late 18th century, the BWH Campus site consisted of a marshy tidal area. The area remained largely undeveloped until the filling of the Back Bay westward through the BWH Campus site to the Town of Brookline in the second half of the 19th century. Flooding in the area in the last quarter of the 19th century was minimized and development began to flourish with the implementation of the Olmsted Plan of the Emerald Necklace.

8.3.1 Binney Street Building and Brigham and Women's Building

According to the National Register nomination for MMHC, no recorded archaeological sites exist on the MMHC Site. The National Register nomination further states that the small size of the former hospital site, combined with the dense urban development in and around the

MMHC Site, indicates that the potential for significant archaeological resources is low. Likewise, the Binney Street Building Site is also that of a small, urban parcel previously disturbed by prior construction activities.

8.3.2 *Brigham Green Enhancement and Parking (Previously Approved)*

Historic maps and orthophotos provided on the BRA website, indicate the site of the Brigham Green parking garage is located on filled marshland associated with the nearby Muddy River and has been previously impacted by construction of the Peter Bent Brigham Hospital and associated landscaping and driveways. Several small structures were located on the site of the existing BWH buildings by 1890, however, these structures were destroyed before or during the construction of the hospital buildings and associated landscaping and driveways. Due to the disturbed nature of the site, no impacts to archaeological resources are anticipated from the proposed parking garage.

8.3.3 *Campus Additions - Neo Natal Intensive Care unit and 15 Francis Street Lobby Renovation*

The expansion of the Neo Natal Intensive Care unit consists of a lateral rooftop addition to an existing building; therefore, no ground disturbance activities are proposed. Renovations to the 15 Francis Street Lobby, and the proposed small addition, will be confined to areas previously disturbed; therefore no impacts to archaeological resources are anticipated.

8.4 Status of Project Review with Historical Agencies

In addition to consulting with the Boston Civic Design Commission and neighborhood and community groups, BWH has met with the Boston Landmarks Commission. Specifically, BWH, together with RTH as part of the MMHC Project, filed an Article 85 application for the demolition of the existing buildings on the MMHC Site. At an August 11, 2009 BLC hearing on the Article 85 application the BWH, together with RTH, committed to continuing to work with BLC staff as the design for the project advances. Chapter 6.0 of the Draft EIR/PIR provides additional information regarding the architectural salvage plan. In general the plan includes salvaging and incorporating selective architectural features into the design of the project.

BWH is also committed to incorporating a photographic exhibit documenting the development of the MMHC Site. The exhibit will also highlight the pioneering role MMHC played in both psychiatric research and in the development of new patient treatment strategies, both of which revolutionized mental health care in the early twentieth century. As envisioned, the exhibit will be displayed in a light box in the Binney Street Building facing the Francis Street sidewalk. This location is highly visible given the active pedestrian activity along Francis Street from Brookline Avenue and Servicer Center Complex to the Shapiro Cardiovascular Center and beyond.

In their comment letter on the ENF for the MMHC Project, the Massachusetts Historical Commission requested that the potential shadow impacts on the Riverway from new construction be included in the Draft EIR. The Draft EIR/PIR provides information on shadow impacts in Section 4.2.

As the plans for the Neo Natal Intensive Care Unit expansion and renovation and expansion of 15 Francis Street advance, the Proponent will coordinate project reviews with the Massachusetts Historical Commission and Boston Landmarks Commission as applicable.

Section 9.0

Community Benefits

9.0 COMMUNITY BENEFITS

This Chapter is a summary of some of BWH's Community Benefits Program. For detailed information on all of BWH's community programs, please see Appendix C, AG Report.

9.1 Community Benefits of BWH

BWH is one of the largest providers of Health Safety Net care to people without means to pay for health care in the Commonwealth. In FY 2008, more than \$40 million worth of care was provided to approximately 3,000 patients. More than one-third of these patients came from Boston neighborhoods, including the communities of Dorchester, Mattapan, Jamaica Plain and Roxbury. At the same time, the hospital treated nearly 5,000 patients insured under Commonwealth Care.

BWH is also a major provider of health care for patients on Medicaid, providing more than \$161 million worth of care to more than 25,000 patients in FY 2008. Nearly half of those patients were from Jamaica Plain, Dorchester, and Roxbury.

The following summarizes a few of BWH's Community Benefit programs.

9.2 Integrated Youth Programs

BWH has taken a leadership role in crafting innovative programs to provide educational and employment opportunities to youth within the Mission Hill community. Examples of these programs are described below.

Health and Science Club in Elementary and Middle Schools

Since they were first offered in FY 2006, BWH organized Health and Science Clubs have provided science learning opportunities to over 200 students in the fourth, fifth, sixth, and seventh grades at three schools and one community center in Mission Hill.

In FY 2008, the Center for Community Health and Health Equity (CCHHE) coordinated Health and Science Clubs at Maurice J. Tobin School and Mission Grammar School. A total of 67 students participated. The Clubs provided an informal learning environment in which students worked with one another in small groups led by hospital employees on science experiments and listened to presentations by guest speakers. The relaxed yet structured atmosphere of the Clubs promoted teamwork and produced cooperative learning experiences that increased science knowledge. The Clubs also familiarized students with new health careers and showed them the types of education and training necessary to pursue specific health career paths.

A total of 30 BWH employees were recruited to serve as classroom volunteers and as guest speakers for the Health and Science Clubs. The volunteers were recruited from 17 BWH departments and were trained to use the Boston Public Schools' (BPS) Youth Explorations in

Science (Y.E.S.) curriculum, which aligns with the national science frameworks, enhances and reinforces the Science and Technology for Children and the Full Option Science System curricula (other BPS curricula), and addresses educational standards for engineering and technology. The Y.E.S. curriculum is also aligned with the science Massachusetts Comprehensive Assessment System (MCAS).

Science Works: Employment and Summer Science Lessons for 8th Grade Students

In FY 2008, ScienceWorks accepted 20 eighth-grade students to this volunteer, employment and academic program. Students were required to volunteer in a BWH department during June, and if their supervisors were satisfied with their performance, the students were offered paid positions to work 24 hours a week during July and August. Seventeen of twenty students were selected to participate over the summer. ScienceWorks also offered a series of five three-hour science lessons on the human brain that were held at BWH. The lessons were developed and taught by L. Todd Rose, Ph.D. of the Mind, Brain, and Education program at Harvard University and offered to 17 students from the Tobin School, Mission Grammar School and Roxbury Preparatory Charter School.

During these lessons, the students learned about neurons, the brain stem, and the hypothalamus. Additionally, they discussed the physiology of moods and emotions and how the mind acquires, stores, and retrieves information.

One week after each lesson, a test was administered to the students to determine how much information they learned and retained. Evaluation results show strong retention of science content knowledge. As part of the academic program, students were also required to write and submit research papers on neurology. Their paper topics included the following: memory, laughter, physical and emotional controls in the brain, fear, medulla oblongata, the hemispheres of the brain, the five senses, how art affects the brain, inhibitory control, sleep and dreams, and multiple intelligences.

Student Success Jobs Program: Internships for High School Students

In October 2008, 30 students were accepted into the Student Success Jobs Program (SSJP), joining 20 students who returned to SSJP from the previous year. SSJP is an after-school and summer work achievement program that is coordinated by BWH. Students are recruited from seven Boston public high schools in Mission Hill and Roxbury with which SSJP currently partners.

SSJP students work in a paid position within a hospital department ten hours a week during the school year and 25 hours per week in the summer. Students are matched with a BWH employee who serves as their mentor with students working in clinical and research labs, clinics and inpatients. In addition to working in the hospital and getting hands-on experience as well as attaining critical science skills, students are offered tutoring to maintain their academic success, attend monthly seminars, and submit written journals.

SSJP students also have opportunities to shadow health care professionals in the emergency department, operating room, and on patient rounds.

Student Success Jobs Program: College Scholarships

In 2008, 16 high school seniors in SSJP received one-year college scholarships that were offered by BWH. Six students received \$4,000 scholarships, four students received \$2,000 scholarships, four students received \$1,000 scholarships, and two students received \$500 scholarships.

Student Success Jobs Program: Summer Internships for College Students

In FY 2008, BWH provided full-time summer internships for 12 college students. Eight graduates of SSJP, and four students from the Boston Private Industry Council's PS Health Care Program, all of whom are majoring in science and health fields, began their 10-week internships at BWH in June 2008. The students worked in the following hospital departments: Center for Surgery and Public Health, Labor and Delivery, Pathology, Intervention Radiology, Thoracic Surgery Research, Neo-Natal Intensive Care Unit, OB/GYN Clinic, Center for Women and Newborn, Lab Control and Allergy Lab, and Thoracic Surgery.

Health Careers Academy

In FY 2008, the CCHHE provided grant support to the Health Careers Engagement Project at Health Careers Academy (HCA), a Horace Mann Charter School that prepares students in the ninth through twelfth grades for careers in the health sciences. The goals of the Health Careers Engagement Project are to promote student knowledge of health care professions and work sites, increase the number of HCA students who enter college programs designed to prepare them for health careers, and expand the number and variety of internships and other workplace learning experiences that are available to HCA students.

During the 2007-2008 school years, the Health Careers Engagement Project organized a guest speaker series for ninth and tenth grade students at HCA. Twenty health care professionals presented in the fields of dentistry, emergency medicine, health care administration, health law, internal medicine, molecular research, nursing, obstetrics/gynecology, pharmacy, physical therapy, psychology, public health, radiology technology, social work, and surgical technology. Additionally, the ninth and tenth grade students made ten site visits to health work sites across Boston and 84 eleventh and twelfth grade students received internship placements. Eighty-five ninth, tenth and eleventh grade students were given job shadowing opportunities at health care organizations and 65 students in the tenth and eleventh grades received summer placements in health-related academic enrichment and work experience programs.

Of the HCa students who graduated in 2008, 30 (46 percent) intend to pursue careers in health care and to major in health or science fields. In addition to the 20 students who intend to pursue nursing, the fields in which these students have expressed interest include: pre-medicine, biology, biochemistry, psychology, pharmacy and speech pathology.

Brigham Book Buddy Program

The Brigham Book Buddy Program, since its inception in 1994, has been implemented in partnership with the Maurice J. Tobin School in Mission Hill. Each month, BWH employees volunteer their time to the program by visiting the Tobin School kindergarten through fifth grade classrooms and reading aloud to students. The Brigham Book Buddies read books selected by the classroom teachers. The goals of the program are to improve students' reading and listening skills, connect the students with health care professionals who serve as role models, and promote the school's literacy objectives. During the 2007-2008 school year, the Book Buddies read to 188 students in 11 classrooms and donated 77 books to the school.

Pen Pal Program

In FY2007, the CCHHE started a Pen Pal Program linking 46 elementary school students in Mission Hill with BWH employees. The program aims at facilitating reading and writing skills among students. In 2008, this successful program more than doubled to 108 second- and third-grade students at Mission Grammar School and the Tobin School who were matched with 108 BWH employees.

Tobin Full-Service School Model

In January 2005, the Tobin School and BWH began to explore the feasibility of developing a full-service school model, which would enable the Tobin School to offer a broader, more coordinated network of before-school and after-school programs for children and parents. As a result of these initial discussions, a task force was convened in FY 2006 to undertake a more thorough planning process.

The development of the Tobin extended school model has focused on the following six areas: Community Resource Assessment, Health Services, Learning Assessment and Evaluation, Mental Health Services, Out-of-School Time Family and Community Engagement.

The Tobin Family Support Center staff is responsible for carrying out the family and community engagement segment of the program. In FY 2007, they selected a curriculum, ordered materials, and conducted outreach in preparation for English as a Second Language (ESL) classes to be offered at the Tobin School. The classes continued in FY2008 with six parents attending classes. They held fall and spring Open Houses to introduce new parents to the school. Eighty-five parents attended the fall Open House in September 2007, and 55

parents attended the spring Open House in March 2008. The parenting partners also organized two bake sales by parents, an apple picking field trip for families, and movie nights for children and parents. Also, in the fall of 2008 the first Grandparents group was established to support the growing numbers of grandparents that act as the primary caretaker of Tobin School students. The group was started with a core of eight grandparents with plans to expand to other grandparents in the school.

9.3 Violence Screening, Treatment and Prevention Programs

Passageway, a domestic violence intervention program developed by the BWH CCHHE, was launched in 1997. In developing Passageway, the CCHHE created a program that would both incorporate the perspectives and experiences of women and assist the hospital in integrating screening for abuse and domestic violence interventions into routine health care.

Passageway has become a leader in integrating domestic violence advocacy services and training for health professionals into the health care system. In the fall of 2004, BWH expanded Passageway to its community sites at Faulkner Hospital and Southern Jamaica Plain Health Center. Since its inception, Passageway has responded to over 7,000 requests for advocacy services and trained nearly 10,000 health care providers and staff. During FY 2008, Passageway responded to a total of 967 BWH and Faulkner Hospital patients and employees experiencing domestic violence.

9.4 Community Jobs Access

Project Hope, a multi-service, non-profit agency, was selected to receive a one-year contract for case management services. Through this contract, Project Hope will provide outreach, case management, and follow-up to residents for Mission Hill and nearby neighborhoods. Interested residents will be screened and receive an assessment customized action plan and job search assistance. In addition they will have access to supportive referrals, job readiness workshops, adult education and ESOL classes at Project Hope.

9.5 Massachusetts League of Community Health Centers

In FY2008, BWH provided grant support to the Mass. League's Workforce Development, Training, and Human Resources Initiative. Through this initiative the Mass. League:

- ◆ held a conference on Clinical Quality and Health Disparities with 142 participants;
- ◆ supported the role of a workforce development manager;
- ◆ established a customer service task force;
- ◆ provided integrated health disparities and cultural competence awareness trainings to Healthcorps volunteers; and

- ◆ continued the development and delivery of ongoing training in cultural competence in health care diversity and disparities for community health centers.

9.6 BWH Employees and Workforce Development

BWH is a major institutional employer of Boston residents. With a workforce of approximately 14,288 total employees, and 12,894 employees in the Longwood Medical Area itself, current data indicate that approximately 37%, or 4,817 of employees working in the LMA are Boston residents.

BWH employs approximately 12,894 FTEs at its facilities in the LMA. Over the next ten years, BWH expects employment at its facilities in the LMA to grow at an annualized rate of approximately two percent. This level of growth would result in approximately 2,824 new FTE positions being created in the LMA by 2019. It is expected that the new positions will reflect the full range of employment opportunities currently available at the hospital. The Brigham and Women's Building will create approximately 500 new jobs in both research and clinical areas.

In November 2006, BWH opened the HR One Stop Employment Center at 741 Huntington Avenue. This office is staffed with a full time recruiter and a full time Community Liaison. This is an example of BWH's unique commitment to bring job placement and recruiting opportunities to the community. BWH notes that the level of staff assistance provided exceeds the commitment set forth in the Cooperation Agreement with the BRA entered into in connection with the BWH 2005 IMP approval.

BWH continues its outreach efforts in the community and with the addition of a case manager. BWH will increase its success rate in placing people from the neighboring areas.

In 2008, BWH's new hires totaled 3,668 employees. Of these new hires, almost 69 percent were Boston residents and approximately six percent lived in the Mission Hill area.

BWH has undertaken significant efforts to attract and retain residents of the City of Boston, and in particular Mission Hill, to job opportunities and job training at BWH.

9.6.1 *Summer jobs and internships*

The hospital hired 94 high school students and 18 college students from the Mission Hill and bordering Boston zip codes. There were 57 departments that sponsored students. The hospital works closely with the Boston Private Industry Council and ABCD to ensure that summer youth referrals are from Mission Hill and surrounding neighborhoods. The hospital hopes to be able to continue to fund the hourly wages at the same level next year. This year we are planning to offer a series of workshops for the youth at Roxbury Tenants of Harvard who are interested in summer employment opportunities at BWH. The youth who successfully complete the program and meet the BWH employment criteria will be accepted into the program

9.6.2 *Community Career Liaison and Case Management Services at BWH*

BWH has made a commitment to increase access to employment at the hospital for residents of Mission Hill and bordering Boston communities. The Community Career Liaison works with Mission Hill applicants or potential applicants for employment at BWH. BWH Human Resources Department helps residents become competitive candidates for open positions at the hospital by providing, through Project Hope, case management services to assist residents in addressing problems such as limited literacy, lack of key job skills, lack of English fluency, childcare and transportation difficulties, and limited work experience.

Community Residents can receive the following services when enrolled in the Case Management Project;

- ◆ Assessment – Hold initial intake sessions with prospective clients and explain the services to them. Review each client’s work history and family support system to identify needs and challenges as well as strengths. Assess job fit for the positions that the client wants to pursue. Utilize the Test of Adult Basic Education (TABE) to determine the client’s literacy level.
- ◆ Workplace Protocols – Familiarize each client with workplace expectations and protocols.
- ◆ Customized Action Plan – In full collaboration with the client, establish an action plan that outlines issues to be addressed through case management and that will enhance client’s employability at BWH. Determine what the client and the case manager will each do to accomplish the goals of the plan. Establish a timeline for reaching the goals.
- ◆ Collaborate with BWH HR specialists – Accept referrals of Mission Hill residents who apply to BWH positions and who may be appropriate candidates for case management. Maintain contact with HR specialists as appropriate to facilitate re-application. BWH Community Liaison, HR specialists, will collaborate to ensure this program results in the successful employment of Mission Hill residents.
- ◆ Supportive Referrals – Make appropriate referrals to the BWH Human Resources Department for open positions within the hospital. Make referrals to ESL, GED, and adult basic education classes; childcare services; transportation services; social service organizations; and job training programs such as Partners in Career and Workforce Development (PCWD). Follow up to determine both whether the client has acted on the referral and whether the client has received the help that he/she requested.

- ◆ Ongoing Support – Engage in problem solving with clients as needed and provide advocacy on issues such as CORI check results. Maintain regular contact with clients to monitor progress on action plans. Strategize with clients to address challenges.
- ◆ Follow-Up – Maintain contact with clients at regular intervals for up to one year after active case management has ceased. Ensure that clients are able to sustain the progress that has been made. Address any setbacks that occur.

9.6.3 Training Activities

BWH is committed to providing its employees with a learning environment and resources to achieve their maximum potential and to help the organization fulfill its mission, vision and goals. BWH's commitment to continuous learning and development is demonstrated through the collaboration of departments that administer educational resources to meet the needs of employees. The hospital assesses staff development needs on a hospital-wide, departmental and individual level and uses these assessments to plan continuing staff education. The hospital promotes staff development throughout the organization by providing educational opportunities in the areas of both clinical and non-clinical training. This training is largely supported by work of departments such as Organizational Development and Learning, Workforce Development, Partners Corporate Training, The Center for Clinical Excellence, The Center for Nursing Excellence and others.

In FY 2008, approximately \$5,624,466.51 was spent by BWH on internal training and professional development programs. 808 courses were offered representing 1411 'available hours' of training. There were a total of 18,816 participants who received a cumulative total of 629,971 hours of training throughout the year. In addition, in FY 2009 BWH expended \$521,060 on scholarship and tuition reimbursement programs and \$594,010 on youth job training programs.

9.6.4 Project-Related Jobs

The IMP Projects will create both temporary construction jobs and permanent jobs. The Brigham and Women's Building and Binney Street Building will create approximately 500 new jobs in both research and clinical areas.

9.7 PILOT

BWH is currently making a Payment in Lieu of Tax (PILOT) contribution for the Nesson Ambulatory Services Building and Garage, the Thorn Building, the Shapiro Cardiovascular Center and the Servicer Center Complex.

9.8 Sustainable Design

BWH has a detailed and expansive set of policies in place to consistently address the need s of sustainable “green” building technology and practices. BWH’s commitment extends not only to new major projects and buildings as now required by the City of Boston under Article 37 of the Code and the Department of Public Health but to renovation projects and ongoing operations such as housekeeping, maintenance and energy conservation in out existing physical plant. BWH recently licensed two LEED accredited professionals within their permanent staff to supervise green initiatives and innovation. BWH is proud to have built the first LEED silver healthcare building in Massachusetts the Shapiro Cardiovascular Center.

BWH is committed a sustainable design and will incorporate sustainable design initiatives as part of the design, construction and operation of the IMP Projects, Campus Additions, including the expansion of the NICU and the renovation of the 15 Francis Street lobby and Campus Upgrades. The IMP Projects and Campus Additions and Campus Upgrades will advance sustainable and environmentally conscious design and construction practices. The Projects include environmentally protective technologies and practices such as energy-efficient equipment and fixtures, and water conservation features for mechanical, electrical, and architectural systems, where feasible.

BWH’s commitment to sustainability is reflected in its decision to exceed requirements of Article 37 of the Boston Zoning Code which requires buildings subject to Article 80B, Large Project Review, to be LEED certifiable. BWH proposes the Binney Street Building and Brigham and Women’s Building to be LEED Silver Certified.

9.9 Linkage Payments

Under Section 80B-7 of the Boston Zoning Code, projects that require zoning relief and that will devote more than 100,000 sf of space to “development impact uses,” must make contributions to the City of Boston’s Neighborhood Housing Trust and Neighborhood Jobs Trust.

For those portions of the IMP Projects that are classified as Development Impact Project uses, BWH will make a housing contribution grant and a jobs contribution grant to the Neighborhood Housing Trust and the Neighborhood Jobs Trust, respectively. BWH will pursue a Housing Creation Option Application to allow the housing linkage funds to be targeted to the Residential Building, if practicable. The IMP Projects will generate approximately \$2.4 million in housing and jobs linkage funds to the City of Boston.

Section 10.0

Consistency with Interim Guidelines

10.0 CONSISTENCY WITH INTERIM GUIDELINES

10.1 Introduction

In late fall 2002, the BRA and the Office of Jobs and Community Services (OJCS), in conjunction with the Boston Transportation Department initiated a master planning process for the LMA. In February 2003, the BRA adopted a set of Interim Guidelines to inform the BRA's considerations while reviewing proposed projects and Institutional Master Plans pursuant to Article 80 of the Boston Zoning Code prior to completion of the LMA strategic plan.

Only the Binney Street Building falls within the boundaries of the area in which LMA Interim Guidelines are applicable (see Figure 10-1). Therefore, the discussion of consistency with these Guidelines focuses on the Binney Street Building rather than the IMP Projects as a whole.

The following sections outline the Binney Street Building's consistency with the Interim Guidelines concerning Urban Design, Transportation, and Workforce Development.

10.2 Urban Design

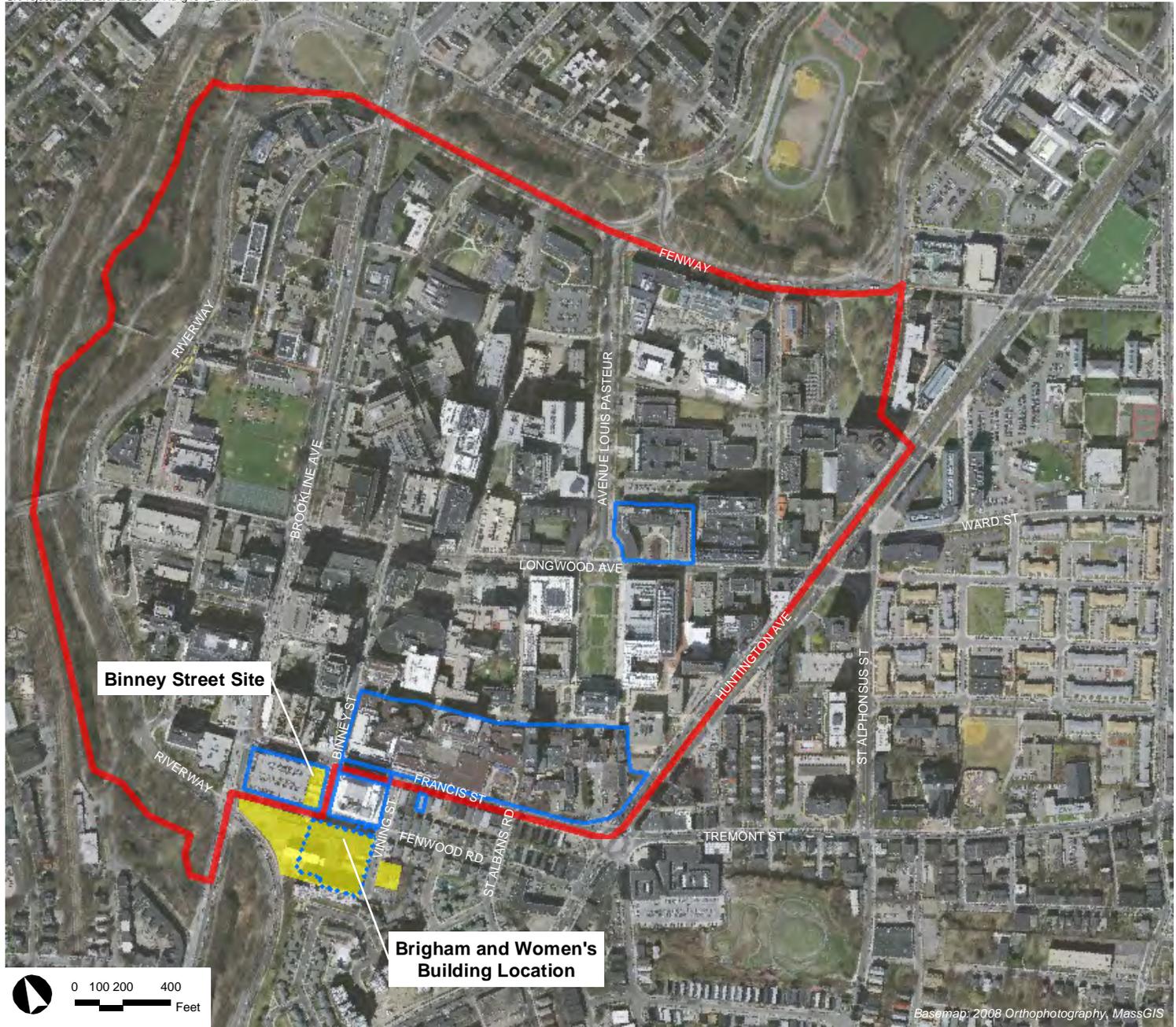
The Urban Design section of the Interim Guidelines establishes a set of design principles and criteria for projects in the LMA. The guidelines set principles to enhance and protect physical assets of the LMA, outline dimensional objectives, including height zones and setbacks, and describe public benefits that can be provided by project proponents and institutions in order to achieve building heights greater than the specified base heights.

10.2.1 Protection of Assets / Shadow Criteria

The Interim Guidelines establish a principle of protecting the physical assets of the LMA, and include restrictions on new shadows on City of Boston parks. The Interim Guidelines state:

“...no project will be approved if it casts any new shadow for more than one hour on March 21st on the Emerald Necklace, Joslin Park or Evans Way Park. This standard is consistent with the most recent shadow restrictions adopted in the City's Municipal Harbor Plan.”

The Project will comply with the BRA's LMA Interim Guidelines shadow criteria. No new shadow from the Binney Street Building will be cast on the Riverway on March 21st due to the building's location and height, which is consistent with the surrounding buildings as shown in Figures 10-2 through 10-6. The Draft PIR/EIR includes a discussion of shadow impacts of the entire MMHC Project.



LEGEND

-  MMHC Project Site
-  BWH Campus
-  Proposed BWH Campus
-  Longwood Medical and Academic Area

Source: BWH Real Estate, BRA

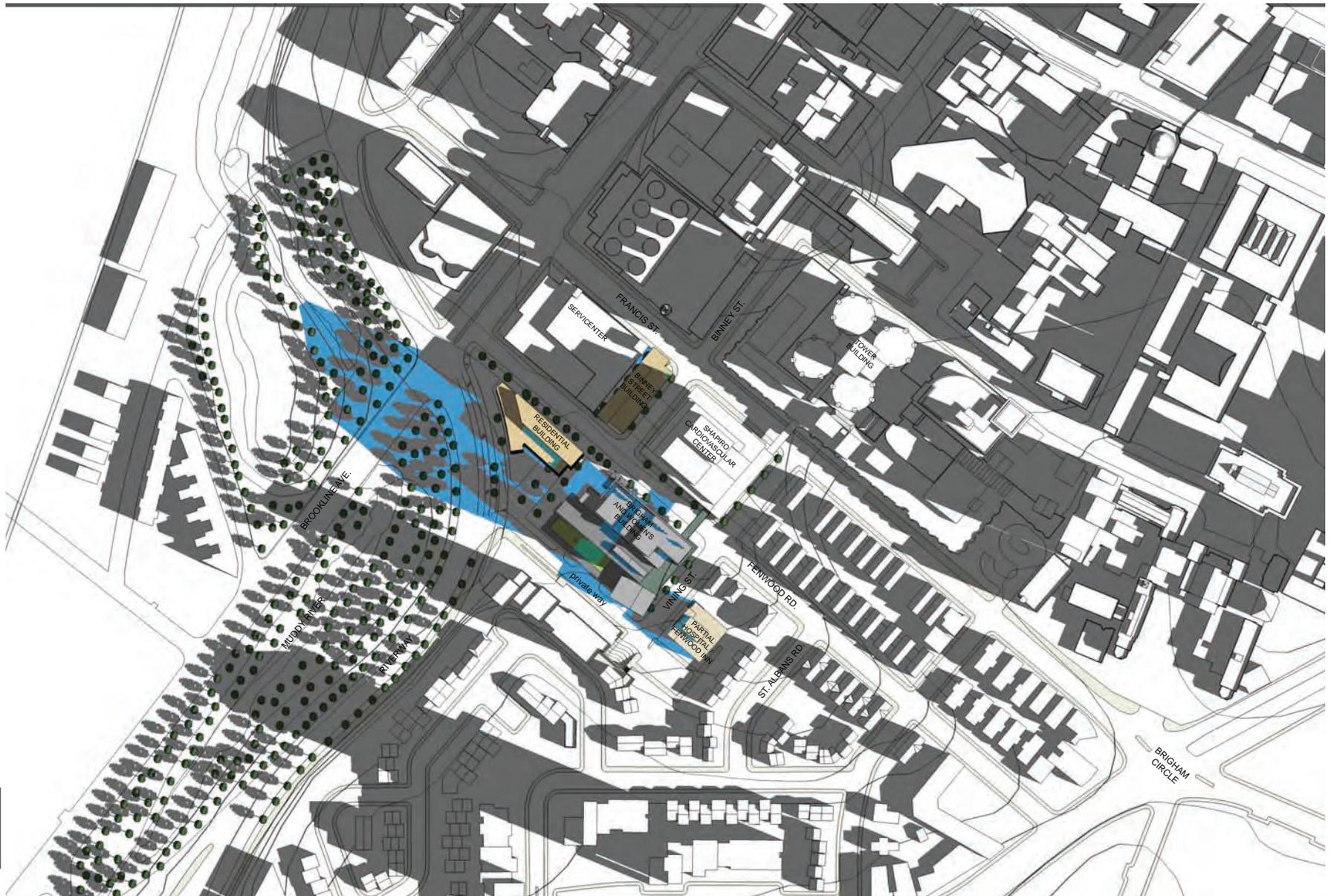
BWH 2010 IMP Boston, Massachusetts



BWH 2010 IMP Boston, Massachusetts



BWH 2010 IMP Boston, Massachusetts



BWH 2010 IMP Boston, Massachusetts





BWH 2010 IMP Boston, Massachusetts

10.2.2 *Height Zones*

The LMA Interim Guidelines identify three height zones. The first, allowing a potential height maximum of 75 feet, is designated to maintain the prevailing character of the existing street walks and will be applied along the major streets and any area adjacent to parks and the Fens. The second height zone, typically adjacent to the streetwall zone, will have a base height of 75 feet and a potential maximum height of 150 feet. The third height zone typically applies to the center of the blocks and will have a base height of 150 feet and a potential maximum height of 205 feet.

The Binney Street Building site is not located within a height zone. However, the height of the building will be 75 feet, as measured by the Boston Zoning Code, within the limits of the lowest allowed height by the Guidelines (zone 1), and below the height of the adjacent Servicer Center Complex which is in the third zone as described above.

10.2.3 *Setbacks and Stepbacks*

The Interim Guidelines state that setbacks from the curb shall equal the “most appropriate prevailing setbacks.” The guidelines also require that:

“Building mass above the prevailing street wall (potential maximum of 75’) must be either 75’ from the setback line, or, not be visible at street level from the back of the opposite sidewalk.”

The Binney Street Building will be approximately 75 feet in height with no setbacks, and therefore will be in accord with the requirement for a prevailing street wall of 75 feet.

10.2.4 *Mix of Uses*

The Guidelines seek to “improve the character, security, and vitality of the LMA” by increasing the mix of uses. The Binney Street Building will include a mix of uses, and therefore is consistent with this goal. In the short-term, the Binney Street Building will provide space that allows the MMHC, which was relocated to Shattuck Hospital in 2003, to return to the Mission Hill area. In the long-term, the building will provide additional administrative and clinical space for BWH. The uses within the building will create an active environment as patients and employees travel to and from the building, and throughout the LMA.

10.2.5 *Character*

The Interim Guidelines state that new projects should “build on and reinforce the distinctive physical, historic, and architectural characteristics of each of the institutions” by addressing simplified wayfinding, improved access and circulation, preservation and enhancement of buildings that contribute to the BWH Campus’s history, and limits on the width and spacing of tall building elements.

The Binney Street Building is consistent with these goals as follows:

- ◆ In the short-term, the building will be clearly marked as a DMH building. In the long-term, the building will be integrated into the BWH Campus and include signage similar to that used in other BWH facilities.
- ◆ The building will be similar in height to the adjacent Servicer Center Complex.

10.2.6 *Special Study Areas*

Portions of the BWH Campus, including Brigham Green, are included in the Brigham Circle Special Study Area and portions of the BWH Campus are included in the Fenwood Neighborhood Transition Zone. The Binney Street Building site is not within a special study area.

10.3 Transportation

As noted above, only the Binney Street Building, is within the area in which the Interim Guidelines apply. The LMA Interim Guidelines specify five transportation-related topics that must be addressed by every project in the LMA. These five topics include:

- ◆ Parking ratios;
- ◆ Transportation Demand Management;
- ◆ Traffic Management;
- ◆ Local Street Network; and
- ◆ System-wide Transportation Projects.

All of these topics are intended to help improve local vehicular circulation, reduce congestion and improve pedestrian access in and around the LMA. The Binney Street Building itself will not include parking or include changes to the local street network or traffic management.

The IMP Projects will provide a limited amount of new parking spaces with the project and visitors, employees, and residents will be encouraged to utilize alternative modes of transportation. The commitment to minimize the construction of new parking spaces as part of the BWH 2010 IMP is a key element to reduce traffic impacts in the area. New parking that is proposed within the 2010 IMP is below the LMA interim guidelines ratio of 0.75 spaces per thousand square feet. BWH plans to be proactive about managing its parking and encouraging employees to use alternative modes of transportation. In addition, BWH will rely on off-site parking outside of the LMA to meet a portion of its employee parking needs associated with the project. This step will discourage employee traffic in the

LMA. As shown below in Table 10-1, when IMP Projects are completed, BWH’s campus parking ratio will decline from 1.17 to 1.11 (spaces per ksف).

Table 10-1 BWH Parking Ratios in the LMA (Includes Owned and Leased Space)

	Brigham and Women’s Building Floor Area (sf)	BWH-Controlled Parking Spaces in the LMA	Parking Ratio (spaces/1,000 sf)
Existing Conditions	2,794,761	3,277 *	1.17
Future Conditions**	3,229,971	3,577	1.11

* Includes approved (but not yet constructed) 249 net-new permitted spaces at Brigham Green Parking and Enhancement Project.

** Does not include Residential Building and associated parking.

Source: Brigham and Women’s Hospital Facilities and Parking/Security Departments.

Note: Parking ratios are based on both owned and leased building space and parking within the LMA.

In addition to constraining the proposed parking supply, BWH will move valet operations from the Mission Park Garage to the ASB-II Garage to reduce traffic impacts to the residential neighborhood. The planned Brigham Green Project, which includes 400 parking spaces (249 net-new) will accommodate the valet operations currently on the Main MMHC Site which were temporarily relocated there to complete the 70 Francis Street/Shapiro Cardiovascular Building. With the changes to valet parking operations at BWH, modifications to the signal timings at the intersection of Vining Street/Francis Street are proposed to better process traffic flows on the Francis Street corridor.

Transportation Demand Management measures related to the Binney Street Building will be similar to those used for all of BWH.

10.3.1 Riverway Right-Turn Lane

For over 20 years, key LMA stakeholders have identified the northbound movement on the Riverway at its intersection with Brookline Avenue as a location providing inadequate capacity to support typical traffic demand on that specific approach. This right-turn lane is not proposed as part of the MMHC Project and the MMHC Project does not trigger the need for the right-turn lane. However, the MMHC Project has been designed so that future implementation of the right-turn lane improvement by others will not be precluded.

10.4 Workforce Development

The Interim Guidelines require institutions and developers to work with the BRA and OJCS to analyze current and future workforce needs and develop a Workforce Development Plan to address those needs. Information on Boston resident employees is requested as part of the workforce plan.

BWH has a comprehensive workforce development initiative that represents substantial investments in workforce development. Major elements of the initiative include:

For employees:

- ◆ Pre-college coursework offered on-site through Bunker Hill Community College in reading skills and basic math
- ◆ School at Work: A comprehensive, 8 month, pre-college and career planning program
- ◆ Patient Care Assistant (CNA) training offered by BHCC
- ◆ ESOL and G.E.D. courses offered through JVS/Healthcare Training Institute
- ◆ Microsoft Office Training: An 8 month program taught by JVS/HTI designed to increase the computer skills of administrative staff
- ◆ Access to live, online academic tutoring
- ◆ Career Coaching and individualized career planning assistance
- ◆ Education Financial Assistance Program that provides employees enrolled in particular clinical education programs up to \$10,000 per year in the form of a forgivable loan

For community residents:

- ◆ Access to our Community Career Liaison for the purposes of:
 - ◆ Identifying open positions
 - ◆ Assistance with applying to positions online
 - ◆ Screening of candidates from the community and following up with recruiters
 - ◆ Referral of residents to our community partner Project Hope for pre-employment preparation, referral for services, and career identification

10.4.1 *Employment Assessment*

BWH is a major institutional employer of Boston residents. With a workforce of approximately 14,288 total employees, and 12,894 employees in the Longwood Medical Area itself, current data indicate that approximately 37%, or 4,817 of employees working in the LMA are Boston residents.

These employees work in the full range of positions available at the institution as outlined in Table 10-2.

Table 10-2 BWH Boston Resident Employees by Job Family

Job Family	Number of Boston Resident Employees	Percent of Boston Resident Employees	Number of BWH Employees	Percent of BWH Employees
Clerical	990	20.6%	1,969	13.8
Department Head and Assistant	15	0.3	166	1.2
Dietary Intern	5	0.1	12	0.1
Engineering	22	0.5%	72	0.5
Fellow	775	16.1	921	6.4
Licensed Practical Nurse	19	0.4	49	0.3
Medical Doctor	254	5.3	1,379	9.7
Nurse Management	37	0.8	62	0.4
Ph. D. (Non-Medical Doctor)	78	1.6	405	2.8
Professional	652	13.5	2,252	15.8
Registered Nurse	516	10.7	2,921	20.4
Service	924	19.2	1,679	11.8
Student	128	2.7	357	2.5
Supervisor	24	0.5	145	1
Technical	351	7.3	1,899	13.3
Total	4,817	100%	14,288	100%

BWH employs approximately 12,894 FTEs at its facilities in the LMA. Over the next ten years, BWH expects employment at its facilities in the LMA to grow at an annualized rate of approximately two percent. This level of growth would result in approximately 2,824 new FTE positions being created in the LMA by 2019. It is expected that the new positions will reflect the full range of employment opportunities currently available at the hospital. The Brigham and Women’s Building will create approximately 500 new jobs in both research and clinical areas.

10.4.2 Existing BWH Workforce Development and Training Initiatives

BWH participates in a numerous workforce development initiatives – both within the institution and in the Greater Boston community – that accomplish the objectives established by the BRA’s Interim Guidelines.

BWH participates fully in community partnerships that expand employment opportunities for Boston residents, including those sponsored by Project Hope, The Boston PIC, ABCD and JVS/Healthcare Training Institute. In addition, BWH offers an extensive array of in-house workforce development and training programs to ensure the continued growth and advancement of its employees. In fiscal year 2009, BWH expended approximately \$5,665,734 in funding and in-kind resources on these workforce development programs.

Training activities

BWH is committed to providing its employees with a learning environment and resources to achieve their maximum potential and to help the organization fulfill its mission, vision and goals. BWH's commitment to continuous learning and development is demonstrated through the collaboration of departments that administer educational resources to meet the needs of employees. The hospital assesses staff development needs on a hospital-wide, departmental and individual level and uses these assessments to plan continuing staff education. The hospital promotes staff development throughout the organization by providing educational opportunities in the areas of both clinical and non-clinical training. This training is largely supported by work of departments such as Organizational Development and Learning, Workforce Development, Partners Corporate Training, The Center for Clinical Excellence, The Center for Nursing Excellence and others.

In FY 2008, approximately \$5,624,466.51 was spent by BWH on internal training and professional development programs. 808 courses were offered representing 1411 'available hours' of training. There were a total of 18,816 participants who received a cumulative total of 629,971 hours of training throughout the year. In addition, in FY 2009 BWH expended \$521,060 on scholarship and tuition reimbursement programs and \$594,010 on youth job training programs.

10.5 Conclusion

The Binney Street Building is consistent with the LMA Interim Guidelines. The building will be within the stated dimensions, will reinforce the character of the institution, have minimal impact to transportation infrastructure, and be a part of BWH's overall workforce development program. BWH will continue to work with the city and its agencies, MASCO, and neighbors in the LMA to protect the assets of the area and create a better physical environment in the LMA.

Appendix A

BRA Scoping Determination

BOSTON REDEVELOPMENT AUTHORITY

SCOPING DETERMINATION FOR MASSACHUSETTS MENTAL HEALTH CENTER REDEVELOPMENT INSTITUTIONAL MASTER PLAN NOTIFICATION FORM/PROJECT NOTIFICATION FORM

PREAMBLE

The Brigham and Women's Hospital Inc. ("BWH") and the Partners HealthCare System Inc. in association with the Roxbury Tenants of Harvard Inc. ("RTH") (the "Proponent") is proposing to redevelop the 2.39 acre Massachusetts Mental Health Center complex on Fenwood Road and Vining Street and the 0.29 acre Binney Street site at the corner of Binney Street and Francis Street (the "Site"). The Proponent proposes the demolition of the existing buildings located on the Site to allow for the construction of four buildings totaling approximately 633,960 square feet to house residential, parking, clinical, inpatient, research and office uses (the "MMHC Redevelopment Project".)

The Site is located in the Longwood Medical and Academic Area ("LMA") and Mission Hill residential neighborhood of Boston, situated three miles from downtown. The LMA is one of the country's preeminent areas of medical and academic institutions, encompassing approximately 210 acres and over 14 million square feet of building floor area. Over 53,000 people either work or study in the LMA (approximately 37,000 employees and approximately 15,000 students) on a typical weekday, and employment figures are projected to grow by 25% within the next decade. The Mission Hill neighborhood is one of Boston's most unique neighborhoods, where residents co-exist with the LMA. This distinctive cohabitation brings opportunity to the area but is also the basis for conflicts in terms of traffic and parking. The opportunity it affords the neighborhood is the diverse residents drawn to the area, including families, students and medical center staff. This mix makes Mission Hill one the most racially and economically diverse in the city. Once filled with farms and breweries, Mission Hill today is a architecturally rich district with a combination of homes built by early landowners, blocks of traditional brick row house, large three family homes and active small and large businesses.

As stated in Section 80D-1 of the Boston Zoning Code (the "Code"), "the purpose of Institutional Master Plan Review is to provide for the well-planned development of Institutional Uses in order to enhance their public service and economic development role in the surrounding neighborhoods." Under the Code, an Institutional Master Plan ("IMP") has a dual purpose of meeting the needs of the institution and relating the campus to its context in a positive way. As stated in Section 80B-1 of the Code, "Large Project Review provides for the comprehensive review of large development projects before the during the schematic design stage and affords the public the opportunity for review and comment. The purpose of this review is to assess a project's impacts on its surroundings and on City resources and to identify necessary mitigation measures."

In preparing its IMP Amendment and Renewal and Draft Project Impact Report ("IMP/ADPIR"), the Proponent will need not only to demonstrate an understanding of its future facilities needs but also the context of its Site, land uses, physical characteristics, planned changes, resident desires, and applicable public policy. The BRA also seeks to enhance the Proponent's presence in the City of Boston as an important economic development entity, employer and housing provider.

SUBMISSION REQUIREMENTS

FOR

MASSACHUSETTS MENTAL HEALTH CENTER REDEVELOPMENT PROJECT INSTITUTIONAL MASTER PLAN NOTIFICATION FORM/PROJECT NOTIFICATION FORM

The Boston Redevelopment Authority ("BRA") is issuing this Scoping Determination in response to an Institutional Master Plan Notification Form/Project Notification Form ("IMPNF/PNF") submitted by the Brigham and Women's Hospital, Inc. ("BWH") and Partners Healthcare System, Inc. in association with the Roxbury Tenants of Harvard, Inc. ("RTH") (the "Proponent") for the Massachusetts Mental Health Center Redevelopment Project (the "MMHC Redevelopment Project") on June 16, 2009. Notice of the receipt by the BRA of the IMPNF/PNF was published in the Boston Herald on June 19, 2009 initiating a public comment period ending on July 19, 2009. At the request of the Proponent, the comment period was extended to July 27, 2009. The IMPNF submission seeks to amend and renew the current Brigham and Women's Institutional Master Plan which was approved by the BRA on January 20, 2005 and by the Boston Zoning Commission on February 9, 2005, with an effective date of February 10, 2005 (the "2005 BWH IMP") pursuant to Article 80D of the Boston Zoning Code ("Code"). In conjunction with the submission of the IMPNF, the Proponent also submitted a Project Notification Form ("PNF") which seeks Large Project Review, under Section 80B of the Code, for 4 distinct buildings: 1) The Residential Building – which will be developed, managed and controlled by RTH – will include 66 affordable rental units and approximately 70 condominiums for a total of approximately 136 units. The building may also include approximately 10,000 SF of community space for a total of approximately 197,750 SF; 2) The Brigham and Women's Building - which will be developed, managed, and controlled by BWH – will include approximately 358,670 SF of space for research and development, clinical and office uses by BWH and the Department of Mental Health ("DMH"); 3) The Binney Street Building – which will be developed by BWH – will include 56,540 SF of clinical and office space which will be initially occupied by DMH and eventually utilized by BWH for outpatient uses; and 4) the Partial Hospital/Fenwood Inn Building – which will be developed by BWH on behalf of DMH – will include 13 single residential units and 17 double residential units and 8260 SF outpatient clinic and partial hospital. The MMHC Redevelopment Project, when completed, will include approximately 633,960 square feet of residential, parking,

clinical, inpatient, research and office uses and 406 parking spaces located beneath the Brigham and Women's Building.

Pursuant to Section 80B-5.3c and Section 80D-5.3c of the Code, a scoping session was held on June 30, 2009 with the City's public agencies to which members of the Task Force were invited and attended. A Task Force meeting, where the IMPNF/PNF was reviewed and discussed, was held on June 30, 2009. The Proponent presented the IMPNF/PNF at the LMA Forum on June 22, 2009 and at a public meeting in the Mission Hill neighborhood on July 14, 2009. Following the scoping session and based on the BRA's review of public comments and comments from the City's public agencies, the BRA hereby issues this Scoping Determination pursuant to Section 80B-5.3 and Section 80D-5.3 of the Code.

Section 80D: IMPNF Requirements:

Consistent with the requirements of Article 80D of the Zoning Code, the 2005 BWH IMP described the existing uses, structures, and activities on the BWH campus, along with future needs, master planning objectives, and proposed construction projects over the five-year term of the 2005 BWH IMP.

This Scoping Determination sets forth those elements specified in Section 80D-3 of the Code that are required to be included in the BWH Institutional Master Plan Amendment and renewal ("BWH IMPA"). This Scoping Determination requests information required by the BRA for its review of the proposed BWH IMPA in connection with the following:

1. Approval of the BWH IMPA pursuant to Article 80 and other applicable sections of the Code;
2. Recommendation to the Zoning Commission for approval of the BWH IMPA.

The BWH IMPA should be documented in a report of appropriate dimensions and in presentation materials which support the full review of the IMP. Forty copies of the full BWH IMPA should be submitted to the BRA. An additional fifty copies should be available for distribution to the Task Force members, LMA Forum participants, community groups and other interested parties in support of the public review process. The BWH IMPA should be made available in an electronic format on a server so that it may be viewed on the internet. The BWH IMPA should be submitted 1) as a stand-alone document, and 2) electronically in the form of CD's. The BWH IMPA should reference and/or include information from the Draft Project Impact Report ("DPIR") that

is also submitted to the BRA to meet the requirements of Large Project Review for the Proposed Project. The BWH IMPA document should include this Scoping Determination and text, maps, plans, and other graphic materials sufficient to clearly communicate the various elements of the BWH IMPA.

The BWH IMPA should include a complete update of the 2005 BWH IMP: existing uses, structures, and activities on the BWH campus, along with future needs, master planning objectives, and status of proposed construction projects over the five-year term of the 2005 BWH IMP. The BWH IMPA should also include an update on the following:

I. Brigham and Women's Mission and Goals

The mission of BWH as it relates to the MMHC Redevelopment Project should be described. The description should articulate the larger as well as local aspects of the mission. Services to the community are of particular interest. The population to be served by the MMHC Redevelopment Project should be described in detail. Changes expected in the type or size of the mission components, particularly as they relate to the MMHC Redevelopment Project, should be highlighted. The longer term goals and the expected growth in the number of employees, patients and research needs, at least ten (10) years into the future, should be described. A statement of how the MMHC Redevelopment Project will advance the mission and goals of the BWH should be included.

II. Program Needs and Objectives

Specific program needs and objectives for the BWH campus to be addressed in the BWH IMPA should be defined in sufficient detail. Included in the description should be current and future trends that are impacting BWH and shaping program objectives. Projection of changes in the patient population, employee population, new or expanded programs, research including National Institute of Health ("NIH") grants, parking, BWH enterprises and spin-off companies and other activities that require space in the LMA and in and outside of the City of Boston in the next 5 to 10 years should be included.

A. Compliance with the Longwood Medical and Academic Area Interim Guidelines:

The BRA has formulated a set of Interim Guidelines to govern proposed projects in the LMA. These Guidelines have been established to ensure that projects apply good planning principles in the areas of transportation, urban design, and workforce development. They describe the physical character of the LMA and outline mutually beneficial public benefits that can be provided by project proponents to achieve project heights that are greater than those specified in the Guidelines. Development

projects within the LMA must demonstrate compliance with guidelines for building height and setbacks, street networks, building character, environmental impacts, and transportation and workforce development. Included in this section should be an outline of how the BWH IMPA components, if applicable, comply with the Interim Guidelines.

III. Physical Needs and Objectives

A. Campus

A summary analysis of the BWH campus should be provided using sufficient text and visual materials.

B. Facilities

An inventory and description of the buildings, facilities, and other structures occupied on the BWH campus and beyond should be provided. An updated illustrative campus plan should be prepared showing the location of each facility. For each building the following information should be provided: total gross floor area, occupancy or use by gross floor area, height in stories and in feet, FAR (for each lot), year built and ownership.

Information on parking facilities should include the total number of parking spaces and a breakdown of the number of spaces allocated by used category. Appropriate description of other types of facilities and their use such as infrastructure systems, recreational fields, and places of assembly should be provided.

An analysis of the existing facilities in light of the identified program needs and objectives should be undertaken and documented.

IV. Campus Context

The immediate area around BWH should be inventoried, analyzed and summarized in the BWH IMPA. The analysis should include land use, building height and FARs, historic resources, open space, student and employee population, public facilities and a ten-year projection of future growth. The capacity and condition of the infrastructure system that serves the BWH should be documented. Area residents and businesses should be consulted and their views regarding the BWH IMPA should be described. From this analysis, guidelines should be defined that will shape the BWH IMPA so that BWH will relate positively to the area around it.

V. Master Plan

A. Development Program

A description of all the significant physical changes proposed for the BWH IMPA time period should be provided. Included here should be information on the renovation of existing facilities, leased space both on and off the BWH campus, urban design

improvements, and any potential future projects identified in the IMPNF. For those locations which are to gain zoning rights through the BWH IMPA, the information required is defined in Section 80D-3.4 of the Code. The impacts of each proposal on the campus should be discussed at a level of definition appropriate to the BWH IMPA and mindful that large projects shall undergo Article 80 Large Project Review when they are implemented. The demolition of any building over 50 years old is subject to the provision of Article 85 of the Zoning Code (Demolition Delay). A full explanation description of the Article 85 process should be provided.

B. Transportation Plan

The scope of the transportation component of the BWH IMPA is included in Appendix 1 and must be responded to in full by the Proponent.

C. Community Benefits Plan

1. Training and Employment Initiatives

A detailed description of BWH's current workforce and project future employment needs concerning the BWH IMPA and the MMHC Redevelopment Project should be provided. Of particular interest is learning about that part of the workforce that is drawn from the adjacent neighborhoods and about programs to recruit, train and promote this population.

2. Taxes

In the context of the IMPA process, the Proponent should meet with the City's Assessing Department to address the concerns expressed in the Assessing Department memo found in Appendix 1.

3. Other benefits

BWH should identify current and future proposed community benefits as well as any other benefits that minimize or mitigate detrimental and adverse impacts on the local community from the BWH IMPA.

D. Urban Design Scope

The BWH IMPA shall include a narrative of the MMHC Redevelopment Project's design concept and its relationship to the existing buildings and surrounding environment. In preparing the BWH IMPA, BWH's shall also address the following issues, providing thorough documentation in text and images.

- (a) Description of site history and a discussion of the MMHC Redevelopment Project's design;

- (b) Consistency with the LMA Interim Guidelines, as applicable, should be described and documented;
- (c) Description of short term plans for open spaces created by the demolition of existing buildings on the Site;
- (d) Improved wayfinding should be described as it relates to the MMHC Redevelopment Project and any future projects; and
- (e) The urban design component should include plans, and elevations to illustrate the MMHC Redevelopment Project.

The scope of the urban design component of the BWH IMPA is included in Appendix 1 and must be responded to in full by the Proponent.

VI. Comments

Comments from the City's public agencies, the Task Force and the public, found in Appendix A and B respectively, are incorporated as a part of this Scoping Determination. Comments from the City's public agencies and the Task Force must be responded to in full. Comments from the public must be responded to reasonably.

VII. Public Notice

The Proponent will be responsible for preparing and publishing in one or more newspapers of general circulation in the City of Boston a Public Notice of the submission of the BWH IMPA to the BRA as required by Section 80A-2. This Notice shall be published within five (5) days after the receipt of the BWH IMPA by the BRA. Public comments shall be transmitted to the BRA within sixty (60) days of the publication of this Notice, unless a time extension has been granted by the BRA in accordance with the provisions of Article 80 or to coordinate the BWH IMPA review with any required Large Project Review. Following publication of the Notice, the Proponent shall submit to the BRA a copy of the published Notice together with the date of publication.

Section 80B: PNF Requirements:

The Proponent is required to prepare and submit to the BRA a Draft Project Impact Report ("DPIR") that meets the requirements of this Scoping Determination by detailing the MMHC Redevelopment Project's expected impacts and proposing measures to mitigate, limit, or minimize such impacts. The DPIR shall contain the information necessary to meet the specifications of Section 80B-3 (Scope of Review; Content of Reports) and Section 80B-A (Standards for Large Project Review Approval) as required by this Scoping Determination.

The DPIR should be documented in a report of appropriate dimensions and in presentation materials which support the full review of the IMP. Forty copies of the full DPIR should be submitted to the BRA. An additional fifty copies should be available for distribution to the Task Force members, LMA Forum participants, community groups and other interested parties in support of the public review process. The DPIR should be made available in an electronic format on a server so that it may be viewed on the internet. The DPIR should be submitted 1) as a stand-alone document, and 2) electronically in the form of CD's. The DPIR should reference and/or include information from the BWH IMPA that is also submitted to the BRA to meet the requirements of Institutional Master Plan review. The DPIR document should include this Scoping Determination and text, maps, plans, and other graphic materials sufficient to clearly communicate the various elements of the DPIR.

Subsequent to the end of the forty-five (45) day public comment period for the DPIR, the BRA will issue a Preliminary Adequacy Determination ("PAD") that indicates the additional steps necessary for the Proponent to complete in order to satisfy the requirements of this Scoping Determination and all applicable sections of Article 80 of the Code. If the BRA finds that the DPIR adequately describes the MMHC Redevelopment Project's impacts and, if appropriate, proposes satisfactory measures to mitigate, limit or minimize such impacts, the PAD will announce such a determination and that the requirements for the filing and review of a Final Project Impact Report ("FPIR") are waived pursuant to Section 80B-5.4(c)(iv) of the Code. Before reaching said findings, the BRA shall hold a public hearing pursuant to Article 80 of the Code. Sections 80B-6 and 80D-10 require the Director of the BRA to issue a Certification of Compliance and a Certification of Consistency, respectively, before the Commissioner of Inspectional Services can issue any building permit for the MMHC Redevelopment Project.

Submission Requirements

I. General Information

1. Application Information

a. Development Team

(1) Names

- (a) Proponent (including description of development entity and type of corporation)**

- (b) Attorney
- (c) Project consultants and architect
- (2) Business address, telephone number and email for each
- (3) Designated contact for each

b. Legal Information

- (1) Legal judgements or actions pending concerning the MMHC Redevelopment Project
- (2) History of tax arrears on property owned in Boston by the Proponent
- (3) Evidence of site control over the Project Site, including current ownership and purchase options of all parcels in the MMHC Redevelopment Project, all restrictive covenants and contractual restrictions affecting the Proponent's right or ability to accomplish the MMHC Redevelopment Project, and the nature of the agreements for securing parcels not owned by the Proponent.
- (4) Nature and extent of any and all public easements into, through or surrounding the Project Site.

c. Disclosure of Beneficial Interests

Disclosure of Beneficial Interests in the MMHC Redevelopment Project must be provided pursuant to Section 80B-8 of the Code.

2. Project Area

- a. An area map identifying the location of the MMHC Redevelopment Project
- b. Description of metes and bounds of the Site or certified survey of the Site

3. Public Benefits

- a. Development Impact Project Contribution and Jobs Contribution specifying amount of housing linkage and jobs linkage contributions.
- b. Estimated annual property taxes for each parcel, and estimated total property taxes during all construction and phased development years and after full occupancy.
- c. Anticipated employment levels including the following:
 - (1) Estimated number of construction jobs
 - (2) Estimated number of permanent jobs

d. Current activities and programs which benefit adjacent neighborhoods and the city at large, such as: child care programs, scholarships, internships, elderly services, education and job training programs, etc.

e. Other public benefits, if any, to be provided.

4. Regulatory Controls and Permits

a. Existing zoning requirements, zoning computation forms, and any anticipated requests for zoning relief should be explained and submitted in full.

b. Anticipated permits required from other local, state, and federal entities with a proposed application schedule should be noted.

c. A statement on the applicability of the Massachusetts Environmental Policy Act ("MEPA") should be provided. If the MMHC Redevelopment Project is subject to MEPA, all required documentation should be provided to the BRA, including but not limited to, copies of the Environmental Notification Form, decisions of the Secretary of Environmental Affairs, and the proposed schedule for coordination with BRA procedure.

5. Community Groups

a. Names and addresses of the Site area owners, abutters, and any community or business groups which, in the opinion of the Proponent, may be substantially interested in or affected by the MMHC Redevelopment Project and the steps the Proponent is undertaking to address any concerns thereof.

b. A list of meetings held and proposed with interested parties, including public agencies, abutters, and community and business groups.

II. **Project Description and Alternatives**

1. Project Description

The DPIR shall contain a full description of the MMHC Redevelopment Project and its components, including their size, physical characteristics, development schedule, costs, and proposed uses. This section of the DPIR also shall present analysis of the development context of the MMHC Redevelopment Project. Appropriate site and building plans to illustrate the MMHC Redevelopment Project clearly shall be required.

2. Project Alternatives

A description of any alternatives to the MMHC Redevelopment Project, including the No-Build alternative (not carrying out the MMHC Redevelopment Project) shall be presented and the primary differences among the alternatives, particularly as they may affect environmental conditions, shall be discussed. The No-Build alternative shall establish the future baseline conditions to which the effects of the MMHC Redevelopment Project are to be compared.

3. Housing

The MMHC Redevelopment Project is expected to comply with the Mayor's Executive Order relative to the Inclusionary Development Policy. There are currently three (3) options offered under the Inclusionary Development Policy: (1) the construction of affordable units on-site; (2) the construction/provision of affordable units off-site; and/or (3) a payment in lieu of providing on-site affordable units. If the Proponent is proposing to locate some or all of the affordable units off-site, this location should be identified. Furthermore, any units provided off-site must be ready for occupancy on or before the date that the units within the MMHC Redevelopment Project are ready for occupancy.

III. Transportation Component

The scope of the transportation component of the MMHC Redevelopment Project is included in Appendix 1 and must be responded to in full by the Proponent.

IV. Environmental Protection Component

The DPIR shall contain an Environmental Protection Component as outlined.

Wind

In general, the BRA has adopted two standards for assessing the relative wind comfort of pedestrians. First, the BRA wind design criterion states that an effective gust velocity of 31 mph should not be exceeded more than one percent of the time. The second set of criteria used by the BRA to determine the acceptability of specific locations is based on the work of Melbourne. The placement of wind measurement locations shall be based on an understanding of the pedestrian use of the MMHC Redevelopment Project and the surrounding area. All wind tunnel test point points shall be approved by the BRA staff before conduction of testing. This set of criteria is used to determine the

relative level of pedestrian wind comfort for activities such as sitting, standing or walking.

Measurement points for this PLW analysis should be placed at all building entrances, entrances to public transportation stations, crosswalks and public sidewalks, public plazas and gathering areas, parks and green spaces

Analysis of results and effective mitigation should be presented in the Draft Project Impact Report (DPIR) using diagram methodology so that the delta or changes manifested by the MMHC Redevelopment Project relative to existing or as-of-right conditions (whichever provides the higher base impacts) are clearly understood.

Shadow

The shadow impact analysis must include net new shadow from the MMHC Redevelopment Project well as existing shadow and clearly illustrate the incremental impact of the MMHC Redevelopment Project. For purposes of clarity, the Proponent shall be directed to consider the use of color as an alternative to dark tonality to indicate new shadows. The shadow impact study area shall include, at a minimum, the entire area to be encompassed by the maximum shadow expected to be produced by the MMHC Redevelopment Project. The build condition(s) shall include all buildings under construction and any proposed buildings anticipated to be completed prior to the completion of the MMHC Redevelopment Project. Shadows from all existing buildings within the shadow impact study area shall be shown. A North Arrow shall be provided on all figures. Shadows shall be determined by using the applicable Boston Azimuth and Altitude data.

Particular attention shall be given to existing or proposed public open spaces and pedestrian areas, including, but not limited to, the existing sidewalks and pedestrian walkways within, adjacent to, and in the vicinity of the MMHC Redevelopment Project and the existing and proposed plazas, historic resources, in particular the Olmsted Park system and other open space areas within the vicinity of the MMHC Redevelopment Project.

Daylight

The Proponent shall conduct a daylight analysis for both build and no-build conditions. The analysis shall measure the percentage of skydome obstructed by the MMHC Redevelopment Project and evaluate the net change in obstruction. Since project alternative massing studies are requested as part of the Article 80 Development Review

Process, daylight analysis of such alternatives shall also be conducted for comparison. The study shall treat the following elements as controls for data comparison: existing conditions, the context examples, and the as-of right conditions. Particular attention shall be given to existing or proposed public open spaces and pedestrian areas, including, but not limited to, the existing sidewalks and pedestrian walkways within, adjacent to, and in the vicinity of the MMHC Redevelopment Project and the existing and proposed plazas, historic resources, in particular the Olmsted Park system and other open space areas within the vicinity of the MMHC Redevelopment Project.

Daylight analyses should be taken for each major building façade within the limits of the Boston Redevelopment Authority Daylight Analysis (BRADA) program, fronting these public and quasi-public ways. The midpoint of each public accessway or roadway should be taken as a study point.

Solar Glare

The Proponent has stated that the MMHC Redevelopment Project is not expected to incorporate the use of reflective building material. Consequently, the Proponent does not anticipate the creation of either an adverse solar glare impact or a solar heat buildup in nearby buildings. The Proponent shall demonstrate that the glass selected will avoid the creation of a visual nuisance and/or a hazard, as it interferes with vision and concentration. However, should the design change and incorporate substantial glass-facades, a solar glare analysis shall be required. The analysis shall measure potential reflective glare from the buildings onto potentially affected streets and public open spaces and sidewalk areas in order to determine the likelihood of visual impairment or discomfort due to reflective spot glare. Mitigation measures to eliminate any adverse reflective glare shall be identified.

Air Quality

The Proponent shall provide a description of the existing and projected future air quality in the MMHC Redevelopment Project vicinity and shall evaluate ambient levels to determine conformance with the National Ambient Air Quality Standards (NAAQS). Careful consideration shall be given to mitigation measures to ensure compliance with air quality standards.

A future air quality (carbon monoxide) analysis shall be required for any intersection (including garage entrance/exits) where the level of service (LOS) is expected to deteriorate to D and the MMHC Redevelopment Project causes a 10 percent increase in

traffic or where the level of service is E or F and the MMHC Redevelopment Project contributes to a reduction in LOS.

The study shall analyze the existing conditions, future No-Build and future Build conditions, for all Project Alternatives. The methodology and parameters of the air quality analysis shall be approved in advance by the Boston Redevelopment Authority (BRA) and the Massachusetts Department of Environmental Protection (DEP). Mitigation measures to eliminate or avoid any violation of air quality standards shall be described.

A description of the MMHC Redevelopment Project's heating and mechanical systems including location of buildings/garage intake and exhaust vents and specifications, and an analysis of the impact on pedestrian level air quality and on any sensitive receptors from operation of the heating, mechanical and exhaust systems, including the building's emergency generator as well as the parking garage, shall be required. Measures to avoid any violation of air quality standards shall be described.

Noise

The Proponent shall establish the existing noise levels at the MMHC Redevelopment Project site and vicinity and shall calculate future noise levels after project completion, thus demonstrating compliance with the Interior Design Noise Levels (not to exceed day-night average sound level of 45 decibels) established by U.S. Department of Housing and Urban Development, as well as applicable City, State and Federal noise criteria.

The Proponent has stated that mechanical equipment such as chillers, garage exhaust fans, and emergency generators have the potential to cause nuisance levels of noise. Due to the MMHC Redevelopment Project's proximity to an adjacent residential neighbors appropriate low-noise mechanical equipment and noise control measures will be required in accord with the Regulations for Control of Noise in the City of Boston and the Commonwealth of Massachusetts. The Proponent shall also describe any other measures necessary to minimize and/or eliminate adverse noise impacts from the MMHC Redevelopment Project.

Solid and Hazardous Waste

The Proponent shall provide a list of any known or potential contaminants on the MMHC Redevelopment Project site, and if applicable, a description of remediation measures to

ensure their safe removal and disposal, pursuant to the M.G.L., Chapter 21E and the Massachusetts Contingency Plan.

Any potential hazardous wastes to be generated by the MMHC Redevelopment Project site must be identified. In addition, potential waste generation must be estimated and plans for disposal indicated and measures to promote reduction of waste generation and to promote recycling in compliance with the City's recycling program described.

Geotechnical Impacts

A description and analysis of the existing sub-soil conditions, including the potential for ground movement and settlement during excavation and potential impact on adjacent buildings and utility lines shall be required. This analysis shall also include a description of the foundation construction methodology, the amount and method of excavation, and the need for any blasting and/or pile driving and the impact on adjacent buildings and infrastructure. A Vibration Monitoring Plan shall be developed prior to commencing construction activities to ensure that impacts from the project construction on adjacent buildings and infrastructure are avoided. Mitigation measures to minimize and avoid damage to adjacent buildings and infrastructure must be described.

Sustainable Design/Green Buildings

The purpose of Article 37 of the Boston Zoning Code is to ensure that major buildings projects are planned, designed, constructed and managed to minimize adverse environmental impacts; to conserve natural resources; to promote sustainable development; and to enhance the quality of life in Boston. Any proposed project subject to the provisions of Article 37 shall be LEED Certifiable (U.S. Green Buildings Council) under the most appropriate LEED rating system. Proponents are encouraged to integrate sustainable building practices at the pre-design phase. Proposed Projects which are subject to comply with Section 80B of the Boston Zoning Code, Large Project Review, shall be subject to the requirements of Article 37.

The MMHC Redevelopment Project consists of multiple buildings and accordingly the Proponent shall be required to submit separate LEED checklists, together with explanatory narratives demonstrating compliance with specific points. The Proponent shall also demonstrate that the Proposed Project will meet the requirements of Article 37 with appropriate supporting documentation and by certification from a LEED Accredited Professional. A LEED checklist or information on the Green Guidelines for Health Care will also be included.

Construction Impacts

A construction impact analysis shall include a description and evaluation of air quality impacts, noise generation and mitigation, construction staging, schedule, access routes, demolition, construction waste and recycling, measures to protect public safety, and rodent control.

Infrastructure Systems Component

An infrastructure impact analysis should be performed. The discussion of the MMHC Redevelopment Project on infrastructure systems should be organized system-by-system as suggested below. The applicant's submission must include an evaluation of the MMHC Redevelopment Project's impact on the capacity and adequacy of existing water, sewerage, energy (including gas and steam), and electrical communications (including telephone, fire alarm, computer, cable, etc.) utility systems, and the need reasonably attributable to the MMHC Redevelopment Project for additional systems facilities.

Any system upgrading or connection requiring a significant public or utility investment, creating a significant disruption in vehicular or pedestrian circulation, or affecting any public or neighborhood park or streetscape improvements, comprises an impact which must be mitigated. The DPIR must describe anticipated impacts in this regard, including specific mitigation measures, and must include nearby MMHC Redevelopment Project build-out figures in the analysis. The standard scope for infrastructure analysis is given below:

Utility Systems and Water Quality

- a. Estimated water consumption and sewage generation from the Proposed Project and the basis for each estimate. Include separate calculations for air conditioning system make-up water
- b. Description of the capacity and adequacy of water and sewer systems and an evaluation of the impacts of the MMHC Redevelopment Project on those systems
- c. Identification of measures to conserve resources, including any provisions for recycling or 'green' strategies
- d. Description of the MMHC Redevelopment Project's impacts on the water quality of Boston Harbor or other water bodies (Muddy River, Charles River) that could be affected by the MMHC Redevelopment Project, if applicable

- e. Description of mitigation measures to reduce or eliminate impacts on water quality
- f. Description of impact of on-site storm drainage on water quality
- g. Information on how the MMHC Redevelopment Project will conform to requirements of the Ground Water Trust under Article 32 by providing additional recharge opportunities
- h. Detail methods of protection proposed for infrastructure conduits and other artifacts, including BSWC sewer lines and water mains, during construction
- i. Detail the energy source of the interior space heating; how obtained, and, if applicable, plans for reuse of condensate.

Thorough consultation with the planners and engineers of the utilities will be required, and should be referenced in the Infrastructure Component section.

Energy Systems

- a. Description of energy requirements of the project and evaluation of project impacts on resources and supply
- b. Description of measures to conserve energy usage and consideration of the feasibility of including solar energy provisions or other on-site energy provisions.

Additional constraints or information required are described below. Any other system (emergency systems, gas, steam, optic fiber, cable, etc.) impacted by this development should also be described in brief. The relationship with MATEP and/or sustainable energy strategies should be defined.

Information is requested to clarify sewage tributary flows and constraints as well as energy choices. The location of transformer and other vaults required for electrical distribution or ventilation must be chosen to minimize disruption to pedestrian paths and public improvements both when operating normally and when being serviced, and must be described. Storm drain and sewage systems should be separated or separations provided for in the design of connections.

V. Urban Design Component

Submission Requirements:

1. Written description of program elements and space allocation (in square feet) for each element, as well as Project totals.
2. Neighborhood plan, elevations and sections at an appropriate scale (1"=100' or larger as determined by the BRA) showing relationships of the proposed project to the neighborhood context:
 - a. massing
 - b. building height
 - c. scaling elements
 - d. open space
 - e. major topographic features
 - f. pedestrian and vehicular circulation
 - g. land use
3. Color, or black and white photographs of the site and neighborhood.
4. Sketches and diagrams to clarify design issues and massing options.
5. Eye-level perspective (reproducible line or other approved drawings) showing the proposals (including main entries and public passages/areas) in the context of the surrounding area. Views should display a particular emphasis on important viewing areas such as key intersections, accessways, or public parks/attractions. Long-ranged (distanced) views of the proposed project must also be studied to assess the impact on the skyline or other view lines. At least one bird's-eye perspective should also be included. All perspectives should show (in separate comparative sketches) both the build and no-build conditions. The BRA should approve the view locations before analysis is begun. View studies should be cognizant of light and shadow, massing and bulk.
6. Additional aerial or skyline views of the project, if and as requested.
7. Site sections at 1"=20' or larger (or other scale approved by the BRA) showing relationships to adjacent buildings and spaces.
8. Site plan(s) at an appropriate scale (1"=20' or larger, or as approved by the BRA) showing:
 - a. general relationships of proposed and existing adjacent buildings and open spaces
 - b. open spaces defined by buildings on adjacent parcels and across streets
 - c. general location of pedestrian ways, driveways, parking, service areas, streets, and major landscape features

- d. pedestrian, handicapped, vehicular and service access and flow through the parcel and to adjacent areas
 - e. survey information, such as existing elevations, benchmarks, and utilities
 - f. phasing possibilities
 - g. construction limits
9. Massing model at 1":40'0" or equivalent reasonable scale for use in public presentations and review. In any case, a model of the updated MMHC site at 1":100'0" must be provided to the BRA for insertion in its Longwood Medical Area model.
 10. Study models at 1" = 16' or 1" = 20' showing preliminary concept of setbacks, cornice lines, fenestration, facade composition, etc. if and as required
 11. Drawings at an appropriate scale (e.g., 1":16'0", or as determined by BRA) describing architectural massing, facade design and proposed materials including:
 - a. building and site improvement plans
 - b. neighborhood elevations, sections, and/or plans showing the development in the context of the surrounding area
 - c. sections showing organization of functions and spaces, and relationships to adjacent spaces and structures
 - d. preliminary building plans showing ground floor and typical upper floor(s).
 - e. phasing, if any, of the Proposed Projects
 12. A written and/or graphic description of the building materials and its texture, color, and general fenestration patterns is required for the proposed development.
 13. Electronic files describing the site and Proposed Project at Representation Levels one and two ("Streetscape" and "Massing") as described in the document *Boston "Smart Model": CAD & 3D Model Standard Guidelines*.
 14. Full responses, which may be in the formats listed above, to any urban design-related issues raised in preliminary reviews or specifically included in the BRA scoping determination, preliminary adequacy determination, or other document requesting additional information leading up to BRA Board action, inclusive of material required for Boston Civic Design Commission review, and including information on the logistics of construction phasing.
 15. Proposed schedule for submission of all design or development-related materials.
 16. Diagrammatic sections through the neighborhood (to the extent not covered in item #2 above) cutting north-south and east-west at the scale and distance indicated above.

17. True-scale three-dimensional graphic representations of the area indicated above either as aerial perspective or isometric views showing all buildings, streets, parks, and natural features.

VI. Comments

Comments from the City's public agencies, the Task Force and the public, found in Appendix A and B respectively, are incorporated as a part of this Scoping Determination. Comments from the City's public agencies and the Task Force must be responded to in full. Comments from the public must be responded to reasonably.

VII. Public Notice

The Proponent will be responsible for preparing and publishing in one or more newspapers of general circulation in the City of Boston a Public Notice of the submission of the DPIR to the BRA as required by Section 80A-2. This Notice shall be published within five (5) days after the receipt of the DPIR. Public comments shall be transmitted to the BRA within forty-five (45) days of the publication of this Notice. Following publication of the Notice, the Proponent shall submit to the BRA a copy of the published Notice together with the date of publication.

Appendix A

BRA MEMORANDUM

TO: Sonal Gandhi

FROM: Katie Pedersen

DATE: July 22, 2009

RE: Massachusetts Mental Health Center Redevelopment
Boston, Massachusetts
Comments on Project Notification Form/Institutional Master Plan
Notification Form

I have reviewed the Plan Notification Form (PNF)/ Institutional Master Plan Notification Form dated June 16, 2009 and submit the following comments for the Environmental Protection Component. The Brigham and Women's Hospital, Inc. (the "Proponent") and Partners HealthCare System, Inc., in association with the Roxbury Tenants of Harvard Association, Inc. are proposing to redevelop the 2.39 acre Massachusetts Mental Health Center complex on Fenwood Road and Vining Street and the .29 acre Binney Street site at the corner of Binney Street and Francis Street (the "Site"). The Proponent proposes the demolition of the existing buildings located the Site and the construction of four buildings (totaling 633,960 square feet) to house residential, parking, clinical, inpatient, research and office uses (the "Proposed Project").

Wind

In general, the Boston Redevelopment Authority (BRA) has adopted two standards for assessing the relative wind comfort of pedestrians. First, the BRA wind design criterion states that an effective gust velocity of 31 mph should not be exceeded more than one percent of the time. The second set of criteria used by the BRA to determine the acceptability of specific locations is based on the work of Melbourne. The placement of wind measurement locations shall be based on an understanding of the pedestrian use of the Proposed Project and the surrounding area. All wind tunnel test point points shall be approved by the BRA staff before conduction of testing. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing or walking.

Measurement points for this PLW analysis should be placed at all building entrances, entrances to public transportation stations, crosswalks and public sidewalks, public plazas and gathering areas, parks and green spaces

Analysis of results and effective mitigation should be presented in the Draft Project Impact Report (DPIR) using diagram methodology so that the delta or changes manifested by the Proposed Project relative to existing or as-of-right conditions (whichever provides the higher base impacts) are clearly understood.

Shadow

The shadow impact analysis must include net new shadow from the Proposed Project as well as existing shadow and clearly illustrate the incremental impact of the Proposed Project. For purposes of clarity, the Proponent shall be directed to consider the use of color as an alternative to dark tonality to indicate new shadows. The shadow impact study area shall include, at a minimum, the entire area to be encompassed by the maximum shadow expected to be produced by the Proposed Project. The build condition(s) shall include all buildings under construction and any proposed buildings anticipated to be completed prior to the completion of the Proposed Project. Shadows from all existing buildings within the shadow impact study area shall be shown. A North Arrow shall be provided on all figures. Shadows shall be determined by using the applicable Boston Azimuth and Altitude data.

Particular attention shall be given to existing or proposed public open spaces and pedestrian areas, including, but not limited to, the existing sidewalks and pedestrian walkways within, adjacent to, and in the vicinity of the Proposed Project and the existing and proposed plazas, historic resources, in particular the Olmsted Park system and other open space areas within the vicinity of the Proposed Project.

Daylight

The Proponent shall conduct a daylight analysis for both build and no-build conditions. The analysis shall measure the percentage of skydome obstructed by the Proposed Project and evaluate the net change in obstruction. Since project alternative massing studies are requested as part of the Article 80 Development Review Process, daylight analysis of such alternatives shall also be conducted for comparison. The study shall treat the following elements as controls for data comparison: existing conditions, the context examples, and the as-of right conditions. Particular attention shall be given to existing or proposed public open spaces and pedestrian areas, including, but not limited to, the existing sidewalks and pedestrian walkways within, adjacent to, and in the vicinity of the Proposed Project and the existing and proposed plazas, historic resources, in particular the Olmsted Park system and other open space areas within the vicinity of the Proposed Project.

Daylight analyses should be taken for each major building façade within the limits of the Boston Redevelopment Authority Daylight Analysis (BRADA) program, fronting these public and quasi-public ways. The midpoint of each public accessway or roadway should be taken as a study point.

Solar Glare

The Proponent has stated that the Proposed Project is not expected to incorporate the use of reflective building material. Consequently, the Proponent does not anticipate the creation of either an adverse solar glare impact or a solar heat buildup in nearby buildings. The Proponent shall demonstrate that the glass selected will avoid the creation of a visual nuisance and/or a hazard, as it interferes with vision and concentration.

However, should the design change and incorporate substantial glass-facades, a solar glare analysis shall be required. The analysis shall measure potential reflective glare from the buildings onto potentially affected streets and public open spaces and sidewalk areas in order to determine the likelihood of visual impairment or discomfort due to reflective spot glare. Mitigation measures to eliminate any adverse reflective glare shall be identified.

Air Quality

The Proponent shall provide a description of the existing and projected future air quality in the Proposed Project vicinity and shall evaluate ambient levels to determine conformance with the National Ambient Air Quality Standards (NAAQS). Careful consideration shall be given to mitigation measures to ensure compliance with air quality standards.

A future air quality (carbon monoxide) analysis shall be required for any intersection (including garage entrance/exits) where the level of service (LOS) is expected to deteriorate to D and the Proposed Project causes a 10 percent increase in traffic or where the level of service is E or F and the Proposed Project contributes to a reduction in LOS.

The study shall analyze the existing conditions, future No-Build and future Build conditions, for all Project Alternatives. The methodology and parameters of the air quality analysis shall be approved in advance by the Boston Redevelopment Authority (BRA) and the Massachusetts Department of Environmental Protection (DEP). Mitigation measures to eliminate or avoid any violation of air quality standards shall be described.

A description of the Proposed Project's heating and mechanical systems including location of buildings/garage intake and exhaust vents and specifications, and an analysis of the impact on pedestrian level air quality and on any sensitive receptors from operation of the heating, mechanical and exhaust systems, including the building's emergency generator as well as the parking garage, shall be required. Measures to avoid any violation of air quality standards shall be described.

Noise

The Proponent shall establish the existing noise levels at the Proposed Project site and vicinity and shall calculate future noise levels after project completion, thus demonstrating compliance with the Interior Design Noise Levels (not to exceed day-night average sound level of 45 decibels) established by U.S. Department of Housing and Urban Development, as well as applicable City, State and Federal noise criteria.

The Proponent has stated that mechanical equipment such as chillers, garage exhaust fans, and emergency generators have the potential to cause nuisance levels of noise. Due to the Proposed Project's proximity to an adjacent residential neighbors appropriate low-noise mechanical equipment and noise control measures will be required in accord with

the Regulations for Control of Noise in the City of Boston and the Commonwealth of Massachusetts. The Proponent shall also describe any other measures necessary to minimize and/or eliminate adverse noise impacts from the Proposed Project.

Solid and Hazardous Waste

The Proponent shall provide a list of any known or potential contaminants on the Proposed Project site, and if applicable, a description of remediation measures to ensure their safe removal and disposal, pursuant to the M.G.L., Chapter 21E and the Massachusetts Contingency Plan.

Any potential hazardous wastes to be generated by the Proposed Project site must be identified. In addition, potential waste generation must be estimated and plans for disposal indicated and measures to promote reduction of waste generation and to promote recycling in compliance with the City's recycling program described.

Geotechnical Impacts

A description and analysis of the existing sub-soil conditions, including the potential for ground movement and settlement during excavation and potential impact on adjacent buildings and utility lines shall be required. This analysis shall also include a description of the foundation construction methodology, the amount and method of excavation, and the need for any blasting and/or pile driving and the impact on adjacent buildings and infrastructure. A Vibration Monitoring Plan shall be developed prior to commencing construction activities to ensure that impacts from the project construction on adjacent buildings and infrastructure are avoided. Mitigation measures to minimize and avoid damage to adjacent buildings and infrastructure must be described.

Sustainable Design/Green Buildings

The purpose of Article 37 of the Boston Zoning Code is to ensure that major buildings projects are planned, designed, constructed and managed to minimize adverse environmental impacts; to conserve natural resources; to promote sustainable development; and to enhance the quality of life in Boston. Any proposed project subject to the provisions of Article 37 shall be LEED Certifiable (U.S. Green Buildings Council) under the most appropriate LEED rating system. Proponents are encouraged to integrate sustainable building practices at the pre-design phase. Proposed Projects which are subject to comply with Section 80B of the Boston Zoning Code, Large Project Review, shall be subject to the requirements of Article 37.

The Proposed Project consists of multiple buildings and accordingly the Proponent shall be required to submit separate LEED checklists, together with explanatory narratives demonstrating compliance with specific points. The Proponent shall also demonstrate that the Proposed Project will meet the requirements of Article 37 with appropriate supporting documentation and by certification from a LEED Accredited Professional.

**Boston Water and
Sewer Commission**



980 Harrison Avenue
Boston, MA 02119-2540
617-989-7000

July 23, 2009

Secretary Ian Bowles
Executive Office of Environmental Affairs
MEPA Office
Attn: William Gage
100 Cambridge Street
Suite 900
Boston, MA 02114

and

Ms. Sonal Gandhi
Senior Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

Re: Massachusetts Mental Health Center Redevelopment
Project Notification Form/Institutional Master Plan Notification Form,
Environmental Notification Form

Dear Secretary Bowles and Ms. Gandhi:

The Boston Water and Sewer Commission (Commission) has reviewed the Project Notification Form (PNF) and the Institutional Master Plan Notification Form (IMPNF), and the Environmental Notification Form (ENF) for the proposed Massachusetts Mental Health Center Redevelopment Project in the Roxbury District of Boston. This letter provides the Commission's comments on the PNF, IMPNF, and ENF.

The proposed project is located on two sites which together comprise 2.68 acres. The first site, Massachusetts Mental Health Center (MMHC) site, consists of 2.39-acres formerly occupied by the MMHC Complex on Fenwood Road and Vining Street. The MMHC site currently contains five vacant buildings containing 190,000 gross square feet and is currently run by the Massachusetts Department of Mental Health. The site is bounded to the northwest by Brookline Avenue, to the west by The Riverway, to the northeast by Francis Street, and to the southeast by Vining Street. The second site, the Binney Street site, is a 0.29-acre area bounded to the northeast by Francis Street and southwest by Fenwood Road and is currently occupied by vacant construction trailers used by the Brigham and Women's Hospital (BWH).



The proposed project consists of the demolition of five existing buildings located on the MMHC site and the relocation of the construction trailers currently located at the Binney Street site in order to construct four buildings of approximately 633,960 square feet (sf), ranging in height from approximately 40 to 220 feet. The proposed project will include residential, clinical, inpatient, research, and office uses, including replacement space for the MMHC, possible community space, and the removal of 163 surface parking spaces. The proposed development will contain 406 underground parking spaces located beneath the proposed BWH building which will be constructed during this project. This will result in a net gain of 243 parking spaces.

According to the PNF, IMPNF and ENF, the proposed sanitary sewer discharge is 99,180 gallons per day (gpd) and the project is expected to generate approximately 109,100 gpd of water demand. For water service, the site is served by an 8-inch low service water main in Vining Street, a 8-inch low service and 12-inch low service main in Fenwood Road, and a 12-inch low service water main in Binney Street. There is a 30-inch low service transmission main in Vining Street and a 30-inch transmission main in Fenwood Road. The Commission will not permit the proponent to connect to the 30-inch main for fire protection or domestic water services.

According to the PNF, ENF and IMPNF, there is a 12-inch sewer in Fenwood Road and a 12-inch sewer in Vining Street. These discharge to the Brookline Sewer and ultimately to the MWRA Deer Island Waste Water Treatment Plant. The Commission recently replaced a portion of the 12-inch sewer on Fenwood Road with a new 15-inch sewer.

For storm drain service, there is a 36-inch storm drain in Fenwood Road and a 15-inch storm drain in Vining Street.

The Commission has the following comments regarding the PNF, IMPNF and ENF:

General

1. Prior to demolition of the buildings, all water, sewer and storm drain connections to the buildings must be cut and capped at the main pipe in accordance with the Commission's requirements. The Developers, the Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc., must then complete a Termination Verification Approval Form for a Demolition Permit, available from the Commission and submit the completed form to the City of Boston's Inspectional Services Department before a demolition permit will be issued.
2. All new or relocated water mains, sewers and storm drains must be designed and constructed at the Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. expense. They must be designed and constructed in conformance with the Commission's design standards, Water Distribution System and Sewer Use Regulations, and Requirements for Site Plans. To assure compliance with the Commission's requirements, the Brigham and Women's



Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. must submit a site plan and a General Service Application to the Commission's Engineering Customer Service Department for review and approval when the design of the new water and wastewater systems and the proposed service connections to those systems are 50 percent complete. The site plan should include the locations of new, relocated and existing water mains, sewers and drains which serve the site, proposed service connections as well as water meter locations.

3. The Department of Environmental Protection, in cooperation with the Massachusetts Water Resources Authority and its member communities, are implementing a coordinated approach to flow control in the MWRA regional wastewater system, particularly the removal of extraneous clean water (e.g., infiltration/inflow (I/I)) in the system. In this regard, DEP has been routinely requiring proponents proposing to add significant new wastewater flow to assist in the I/I reduction effort to ensure that the additional wastewater flows are offset by the removal of I/I. Currently, DEP is typically using a minimum 4:1 ratio for I/I removal to new wastewater flow added. The Commission supports the DEP/MWRA policy, and will require the Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. to develop a consistent inflow reduction plan.

The 4:1 reduction must be addressed at least 90 days prior to activation of water service and will be based on the estimated sewage generation provided with the project site plan.

4. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. should be aware that the US Environmental Protection Agency issued a draft Remediation General Permit (RGP) for Groundwater Remediation, Contaminated Construction Dewatering, and Miscellaneous Surface Water Discharges. If groundwater contaminated with petroleum products, for example, is encountered, will be required to apply for a RGP to cover these discharges.
5. A Groundwater Conservation Overlay District has been developed and this project is located within it. This district is intended to promote the restoration of groundwater levels and reduce the impact of surface water runoff. The applicant for a building permit will be required to construct a structure capable of retaining a specific amount of stormwater accumulated on the site. This retention structure would be designed to direct the stormwater towards the groundwater table for recharge. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. should contact the Inspectional Services Department for further information.



Water

1. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. should provide separate estimates of peak and continuous maximum water demand for residential, commercial, industrial, irrigation of landscaped areas, and air-conditioning make-up water for the project with the site plan. Estimates should be based on full-site build-out of the proposed project. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. should also provide the methodology used to estimate water demand for the proposed project.
2. In addition to the water conservation measures required by the Massachusetts Plumbing Code and listed in the Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. should also consider implementing other water saving measures where appropriate. Public restrooms should be equipped with sensor-operated faucets and toilets.
3. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. are required to obtain a Hydrant Permit for use of any hydrant during the construction phase of this project. The water used from the hydrant must be metered. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. should contact the Commission's Operations Division for information on and to obtain a Hydrant Permit.
4. If potable water is to be used for irrigation of the landscaped areas, the amount should be quantified. If the Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. plan to install a sprinkler system, the Commission suggests that timers, tension meters (soil moisture indicators) and rainfall sensors also be installed. The Commission strongly encourages the creation of landscape that requires minimal use of potable water.
5. The Commission is utilizing a Fixed Radio Meter Reading System to obtain water meter readings. For new water meters, the Commission will provide a Meter Transmitter Unit (MTU) and connect the device to the meter. For information regarding the installation of MTUs, the Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. should contact the Commission's Meter installation Department.



Sewage / Drainage

1. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. must submit to the Commission's Engineering Customer Service Department a detailed stormwater management plan which:
 - Identifies best management practices for controlling erosion and for preventing the discharge of sediment and contaminated groundwater or stormwater runoff to the Commission's drainage system when the construction is underway.
 - Includes a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils; groundwater or stormwater, and the location of major control or treatment structures to be utilized during the construction.

 - Provides a stormwater management plan in compliance with the DEP's standards mentioned above. The plan should include a description of the measures to control pollutants in stormwater after construction is completed.
2. Developers of projects involving disturbances of land of one acre or more will be required to obtain an NPDES General Permit for Construction from the Environmental Protection Agency and the Massachusetts Department of Environmental Protection. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. are responsible for determining if such a permit is required and for obtaining the permit. If such a permit is required, it is requested that a copy of the permit and any pollution prevention plan prepared pursuant to the permit be provided to the Commission's Engineering Customer Services Department, prior to the commencement of construction. The pollution prevention plan submitted pursuant to a NPDES Permit may be submitted in place of the pollution prevention plan required by the Commission provided the Plan addresses the same components identified in item 1 above.
3. The Commission encourages the Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. to explore additional opportunities for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides, and fertilizers.
4. If the Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. seek to discharge dewatering drainage to the Commission's sewer system, they will be required to obtain a Drainage Discharge Permit from the Commission's Engineering Customer Service Department prior to discharge.
5. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. must fully investigate methods for retaining stormwater on-site before the Commission will consider a request to discharge stormwater



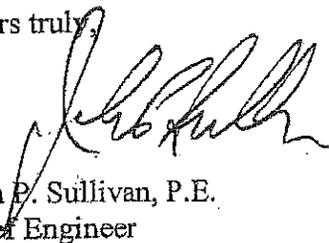
to the Commission's system. The site plan should indicate how storm drainage from roof drains will be handled and the feasibility of retaining their stormwater discharge on-site. Under no circumstances will stormwater be allowed to discharge to a sanitary sewer. The Commission encourages the proponent to explore utilization of green roof technologies.

6. Sanitary sewage must be kept separate from stormwater and separate sanitary sewer and storm drain service connections must be provided.
7. The Commission requests that the Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. install a permanent casting stating "Don't Dump: Drains to Charles River" next to any catch basin created or modified as part of this project. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. should contact the Commission's Operations Division for information regarding the purchase of the castings.
8. If a cafeteria or food service facility is built as part of this project, grease traps will be required in accordance with the Commission's Sewer Use Regulations. The Brigham and Women's Hospital, Inc, Partner's HealthCare System, Inc., and the Roxbury Tenants of Harvard Association, Inc. are advised to consult with Mr. Mark Medico, Deputy Superintendent of Special Projects; with regards to grease traps.
9. The enclosed floors of the parking garage must drain through oil separators into the sewer system in accordance with the Commission's Sewer Use Regulations. The Commission's Requirements for Site Plans, available by contacting the Engineering Customer Services Department, include requirements for separators.
10. Existing sewer and drain services not reused by the proponent shall be capped at the existing sewer main in conformance with the Commission's standards.
11. Though it is not anticipated for this project, the Commission requires that existing stormwater and sanitary sewer service connections, which are to be re-used by the proposed project, be dye tested to confirm they are connected to the appropriate system.



Thank you for the opportunity to comment on this project.

Yours truly,



John P. Sullivan, P.E.
Chief Engineer

JPS/ah

C: Arthur Mombourquette, The Brigham and Women's Hospital, Inc.
Timothy J. Pattison, Partners HealthCare System, Inc.
Girma Belay, Roxbury Tenants of Harvard Association, Inc.
Peter Munkenberg, Roxbury Tenants of Harvard Association, Inc.
Michael Slezak, Linea 5
Michael Liu, The Architectural Team
Cindy Schlessinger, Epsilon Associates, Inc.
Kathleen Pedersen, BRA
M. Zlody, BED
P. Larocque, BWSC

MEMORANDUM

TO: Sonal Gandhi
FROM: David Carlson
DATE: August 7, 2009 and as amended
SUBJECT: Massachusetts Mental Health Center Redevelopment Project
Scoping Comments

The Brigham and Women's Hospital with Partners Healthcare (BWH) in association with the Roxbury Tenants of Harvard (RTH) propose to redevelop the Massachusetts Mental Health Care (MMHC) site and a site on Binney Street into a mixed-use complex providing for the needs of MMHC as well as allowing for BWH research needs, residential uses with a high affordability ratio, and parking. A total of about 630,000 SF is proposed on about 2.68 acres in four buildings on what will be four parcels (Binney site, Fenwood Inn, BWH building, RTH building). The deal is complex, however, since all development will be accomplished in the first ten years under a 95-year lease for the MMHC site. Proposed zoning relief is proposed to be accomplished via a PDA for the RTH portion of the site and via an amended IMP for the BWH and Binney sites. This latter results in IMP implications for the BWH Campus.

URBAN DESIGN COMPONENT

The BCDC has voted to review and seen a presentation of the Massachusetts Mental Health Center Redevelopment proposal in their meeting on August 4, 2009. Comments as reflected in the draft minutes for that date are attached. Completion of the BCDC process must be completed as soon as possible given the reported schedule of the primary Projects and entitlements contemplated under the PNF.

The information presented in the PNF suggests a number of studies, many of which engage the nature and treatment of the area's streetscape and massing relationships, as well as the Proposed Project's relationship to the Emerald Necklace system along the Riverway. More information on the following topics is requested in the DPIR/IMP/PDA submission.

Pedestrian and streetscape strategies. The MMHC Redevelopment Project will need to study strategies of connection and orientation that provide not only for comprehension of this extension of the BWH Campus, but also for the residential area encompassed by RTH. BWH Campus connections must be reinforced by strong streetscape improvements and pedestrian crossings along Vining and Binney that extend to and embrace the MMHC site. Wayfinding and directional signage is encouraged. The streetscape improvements should extend along both sides of Fenwood as well. And how will the proposed reconfiguration at Brookline Avenue strengthen pedestrian as well as vehicular traffic? The logic of the BWH 'Pike' is proposed to be extended via a single primary bridge across Fenwood, connecting the new BWH building to the Shapiro Center at 70 Francis Street. This proposal's urban logic must be defended in terms of necessity of use, as the bridge across Francis was defended and ultimately approved for the Shapiro Center. Finally, the pedestrian connections that help knit the community of RTH and other residential neighbors together should be diagrammed and strengthened where possible. Vining Street Extension should be treated to accommodate and resolve many forces...and to diminish the impacts of the Riverway ramp and the loading and parking entries.

Connections to the neighborhood. Develop diagrams and concepts, translatable into reinforcing action, that are clearly intended to animate and connect the edges of the MMHC Redevelopment Project with the surrounding institutions and neighborhoods (see above), and to create and enhance through-block pedestrian path connections such as the connection along the Binney corridor continuation to the green

space of the Emerald Necklace along the Riverway. Safe physical connections to walking or bicycling trails should be created or strengthened. Connections to MBTA services (Green lines, buses) should also be clear, and space must be provided within the Project for bicycles - improvements that will replace the *ad hoc* bicycle forest on Francis at the corner of Binney must be included in the programming of the new buildings.

A Campus Signage Plan for BWH should be developed, if such does not already exist, or extended to include the new BWH buildings.

An IMP for the BWH buildings implies Campus-wide thinking. This should extend to ideas of transportation as well as energy and communication/data systems. The percentage of employees and visitors who bicycle may be limited by the amount of bicycle racks and reasonable storage facilities provided; this idea should be expanded as a strategy, and possibly extended into ideas of patient therapy if applicable. Regarding energy, consider consolidating systems in development as well as the use of alternative energy sources (solar, wind, geothermal), or maximizing the use of local resources such as MATEP. An infrastructure analysis/update should be included in the IMP (see standard Article 80 infrastructure analysis requirements).

Campus (BWH networks) and Open Spaces. Develop a diagram and plan that shows BWH Campus connections and other key connections inside and outside of buildings. Develop a plan for the open space networks which both act along edges and along the major pathways, and play a role in defining the nature of the BWH Campus. Show how open spaces, including the spaces which serve now as *ad hoc* places of relaxation and refuge, may be defined further in the future, even if not currently a part of the intended IMP entitlement. Develop the open space on the MMHC parcel in particular not only as a 'collector' of the view corridor of Binney Street and plaza/forecourt to two building entries, as a connector, and as a 'buffer' for the Riverway traffic and green space, but also as a resource for the residents of the RTH building and an amenity of green respite for the public, and as a conceptual reflection of the green space of the Riverway. Demonstrate how the phasing and parcelization of the two buildings on the primary MMHC lot will be worked out to allow the efficient accomplishment of what is planned for open space. Determine whether the trees noted in the conversation that took place at the BCDC can reasonably be saved and, if not, design the open space and streetscape so that the shading and green effects that exist now will be an asset in the future.

The nature of Binney Street should be considered along its length. Also consider the future role of the Binney building as part of the BWH Campus and the location of its primary entry. Aside from the streetscape improvements referenced earlier, consider the responses possible to the ending (or continuation) of its view corridor, which now terminates in part on both the MMHC building complex and the Neville House. Currently the scheme attempts to accomplish several goals: ending the view corridor in a vertical building component expression, gathering the force of the Binney corridor and its pedestrians into a forecourt/proscenium, and redirecting the axis of the view corridor to suggest a connection to the open space of the Riverway which is translated into open space on the parcel as well. The scheme is a design work in progress and will be stronger if simplified.

Massing and Height. Discuss the degree and means of conformance with the LMA Interim Guidelines. Shadow investigations should be a part of this in particular as they impact the Riverway. The massings of the two primary buildings on the MMHC site as shown are serving several ideas and responding to a number of constraints. It may be helpful, particularly in addressing the BCDC comments, to show the process by which the proposed massing was conceived, and to investigate possible adjustments by taking a *macro* look at the larger massings in the immediate area, as well as considering sectional relationships across streets (Vining and Vining Extension, Fenwood, and the Riverway).

For the Proposed Project, we suggest submitting the following urban design materials for its schematic design. These are for the most part standard requirements for the equivalent of a DPIR stage. Certain of these requirements will also be appropriate more slightly more broadly to the IMP. Children's should develop a physical model of their campus if this has not already been done. The studies requested above for the IMP should be developed at a scale appropriate to the element study and purpose (i.e. diagrams, concept plan, plan or section detail needed to define a concept, etc.)

1. Written description of program elements and space allocation (in square feet) for each element, as well as Project totals.
2. Neighborhood plan, elevations and sections at an appropriate scale (1"=100' or larger as determined by the BRA) showing relationships of the proposed project to the neighborhood context:
 - a. massing
 - b. building height
 - c. scaling elements
 - d. open space
 - e. major topographic features
 - f. pedestrian and vehicular circulation
 - g. land use
3. Color, or black and white photographs of the site and neighborhood.
4. Sketches and diagrams to clarify design issues and massing options.
5. Eye-level perspective (reproducible line or other approved drawings) showing the proposals (including main entries and public passages/areas) in the context of the surrounding area. Views should display a particular emphasis on important viewing areas such as key intersections, accessways, or public parks/attractions. Long-ranged (distanced) views of the proposed project must also be studied to assess the impact on the skyline or other view lines. At least one bird's-eye perspective should also be included. All perspectives should show (in separate comparative sketches) both the build and no-build conditions. The BRA should approve the view locations before analysis is begun. View studies should be cognizant of light and shadow, massing and bulk.
6. Additional aerial or skyline views of the project, if and as requested.
7. Site sections at 1"=20' or larger (or other scale approved by the BRA) showing relationships to adjacent buildings and spaces.
8. Site plan(s) at an appropriate scale (1"=20' or larger, or as approved by the BRA) showing:
 - a. general relationships of proposed and existing adjacent buildings and open spaces
 - b. open spaces defined by buildings on adjacent parcels and across streets
 - c. general location of pedestrian ways, driveways, parking, service areas, streets, and major landscape features
 - d. pedestrian, handicapped, vehicular and service access and flow through the parcel and to adjacent areas
 - e. survey information, such as existing elevations, benchmarks, and utilities
 - f. phasing possibilities
 - g. construction limits
9. Massing model at 1":40'0" or equivalent reasonable scale for use in public presentations and review. In any case, a model of the updated MMHC site at 1":100'0" must be provided to the BRA for insertion in its Longwood Medical Area model.
10. Study models at 1" = 16' or 1" = 20' showing preliminary concept of setbacks, cornice lines, fenestration, facade composition, etc. if and as required
11. Drawings at an appropriate scale (e.g., 1":16'0", or as determined by BRA) describing architectural massing, facade design and proposed materials including:

- a. building and site improvement plans
 - b. neighborhood elevations, sections, and/or plans showing the development in the context of the surrounding area
 - c. sections showing organization of functions and spaces, and relationships to adjacent spaces and structures
 - d. preliminary building plans showing ground floor and typical upper floor(s).
 - e. phasing, if any, of the Proposed Projects
12. A written and/or graphic description of the building materials and its texture, color, and general fenestration patterns is required for the proposed development.
 13. Electronic files describing the site and Proposed Project at Representation Levels one and two ("Streetscape" and "Massing") as described in the document *Boston "Smart Model": CAD & 3D Model Standard Guidelines*.
 14. Full responses, which may be in the formats listed above, to any urban design-related issues raised in preliminary reviews or specifically included in the BRA scoping determination, preliminary adequacy determination, or other document requesting additional information leading up to BRA Board action, inclusive of material required for Boston Civic Design Commission review, and including information on the logistics of construction phasing.
 15. Proposed schedule for submission of all design or development-related materials.
 16. Diagrammatic sections through the neighborhood (to the extent not covered in item #2 above) cutting north-south and east-west at the scale and distance indicated above.
 17. True-scale three-dimensional graphic representations of the area indicated above either as aerial perspective or isometric views showing all buildings, streets, parks, and natural features.

DAYLIGHT AND SHADOWS

These investigations have likely been scoped by another BRA reviewer. For the required BRADA analysis, all of the streets bordering the primary MMHC site are of interest. For the shadow analysis, focus on the duration and scope of any impacts on the Emerald Necklace park area.

INFRASTRUCTURE SYSTEMS COMPONENT (referenced above)

An infrastructure impact analysis should be performed.

The discussion of Proposed Project impacts on infrastructure systems should be organized system-by-system as suggested below. The applicant's submission must include an evaluation of the Proposed Project's impact on the capacity and adequacy of existing water, sewerage, energy (including gas and steam), and electrical communications (including telephone, fire alarm, computer, cable, etc.) utility systems, and the need reasonably attributable to the proposed project for additional systems facilities.

Any system upgrading or connection requiring a significant public or utility investment, creating a significant disruption in vehicular or pedestrian circulation, or affecting any public or neighborhood park or streetscape improvements, comprises an impact which must be mitigated. The DPIR must describe anticipated impacts in this regard, including specific mitigation measures, and must include nearby Proposed Project build-out figures in the analysis. The standard scope for infrastructure analysis is given below:

1. Utility Systems and Water Quality

- a. Estimated water consumption and sewage generation from the Proposed Project and the basis for each estimate. Include separate calculations for air conditioning system make-up water
- b. Description of the capacity and adequacy of water and sewer systems and an evaluation of the impacts of the Proposed Project on those systems
- c. Identification of measures to conserve resources, including any provisions for recycling or 'green' strategies
- d. Description of the Proposed Project's impacts on the water quality of Boston Harbor or other water bodies (Muddy River, Charles River) that could be affected by the Project, if applicable
- e. Description of mitigation measures to reduce or eliminate impacts on water quality
- f. Description of impact of on-site storm drainage on water quality
- g. Information on how the Proposed Project will conform to requirements of the Ground Water Trust under Article 32 by providing additional recharge opportunities
- h. Detail methods of protection proposed for infrastructure conduits and other artifacts, including BSWC sewer lines and water mains, during construction
- i. Detail the energy source of the interior space heating; how obtained, and, if applicable, plans for reuse of condensate.

Thorough consultation with the planners and engineers of the utilities will be required, and should be referenced in the Infrastructure Component section.

2. Energy Systems

- a. Description of energy requirements of the project and evaluation of project impacts on resources and supply
- b. Description of measures to conserve energy usage and consideration of the feasibility of including solar energy provisions or other on-site energy provisions.

Additional constraints or information required are described below. Any other system (emergency systems, gas, steam, optic fiber, cable, etc.) impacted by this development should also be described in brief. The relationship with MATEP and/or sustainable energy strategies should be defined.

Information is requested to clarify sewage tributary flows and constraints as well as energy choices. The location of transformer and other vaults required for electrical distribution or ventilation must be chosen to minimize disruption to pedestrian paths and public improvements both when operating normally and when being serviced, and must be described. Storm drain and sewage systems should be separated or separations provided for in the design of connections.

Excerpted from the draft BCDC Minutes of August 4, 2009:

The next item was a presentation of the **Massachusetts Mental Health Center ('MMHC') Redevelopment Project**. Jonathan Katz (JK) of Brigham and Women's/Partners HealthCare introduced Michael Liu (ML) of The Architectural Team and the rest of the MMHC team. The proponents are Brigham and Women's Hospital ('BWH'), The Roxbury Tenants of Harvard ('RTH'), DCAM, and the State DMH. The conversation about redeveloping the site began 11 years ago, in 1998, when it became clear that the existing buildings could no longer adequately serve their functions. The MMHC actually moved out in 2003; in 2005, an RFP for the site was issued, with respondents required to build first and at no cost to the State DMH 70,000 SF of space and 50 parking spaces. For that, DCAM would grant a 95-year lease. We (BWH) had worked with RTH on the Shapiro (70 Francis Street) Building and so, when the site became available, we decided to go in together. The key objective of the State is to get their clients back to the site ASAP. JK then showed an aerial photo, an existing site plan, the proposed site plan, and describes the basic program. He noted the phasing, and the eventual move of DMH to the second floor of the BWH building.

Peter Munckenbeck of RTH then gave the background of their organization...Harvard bought land, built towers, and started a war, resulting in a demarcation line and in the approval of MATEP. With Shapiro, they moved the line of demarcation up to Vining Street. That was the genesis of this partnership, and allowed for the continuation of residential and a defined limit for medical uses.

ML then presented the conceptual design, noting key features such as the topography and The Riverway. Vining Street leads to a 1372-car garage under the RTH complex and Neville House. He noted also the existing bridge across Francis to the Shapiro Building, and the proposed continuation of that path across Fenwood to the new BWH building. ML: There are four buildings; we are presenting only two, and the other two only as they are components of a future Master Plan. Along the Riverway, there is a continuation of a 35-foot-wide swath of open space setback; at the RTH building, this would screen the parking garage. The footprints of the buildings are integrated with the massings, which we have altered to create a space and a diagonal opening/path at the end of Binney. The corner entries reinforce the space. (Goes to perspective drawings. PM leaves, and DH takes the gavel as Acting Chair.)

ML: The Neville House residential use starts above its base, and the BWH building sets back to maximize the distance between the towers where units exist. The profile is as thin as possible in the RTH residential building, to minimize shadows, to respond to the geometry of the Riverway and the BWH tower. It is a continuation of layers, of elements. The bridge connection continues the 'Pike,' which ends at the corner closest to the RTH garage. There will be a minor entry there, because half of all BWH parking is in that garage. (Shows views.) The Binney Building has its core layer against the existing Service Garage; its glassy form is a platonic shape along Binney. On Francis, the building continues the sense of the garage entry and bus stop, echoing across the street. This is the second level of the building; its main entry is on Fenwood. At the Partial Hospital, we have tried a more residential scale, recalling the scale of the triple-deckers on Francis and Fenwood. (Shows street elevations and drawings of the Partial Hospital/Fenwood Inn.)

AL: The two yellow (DMH) parcels - on the original site, were the programs together? Peter: Yes, they were in the same building complex. AL: Do they want that? Peter: No, there are separate programs. AL: If then it's still the same organization, then should the architecture be more the same? DS: Why not build the Binney Building higher? ML points out the drawing is deceptive; the height is really the same as the large adjacent Service Center building. DS: Then I withdraw the question. JK: The program space is adaptable to each user (DMH then BWH); this was worked out carefully. LE: So no connection is needed (across Vining) when it moves? JK: No. DC: Why are you demolishing the buildings in the first phase? You can't use them? Joe: The buildings have all the issues you would expect. So we can't use them; we intend to have 50 surface parking spaces, and temporary green space. Peter: We expect to build the residential building in about three years. DC: The piece that concerns me is the sidewalk along Fenwood. Peter: That's why the building is set back from Fenwood; we want to save the trees, that's a demand from the community. DC: They are not likely able to be saved; you should look at that closely. Peter: We will take a look; we have an arborist. JK: There is a lot of phasing, a lot of things going on. Peter: There is an intense interest in the interim period being acceptable. DC: Present information on the sidewalks and plantings in Committee.

DS: Keep the BWH building massing in line with 70 Francis; it's important to step to the scale of the community. AL: I agree. DS: I'm not sure what the aesthetic is with the Fenwood Inn - it's like an institutional Deco. Maybe it should be even more residential. ML: We considered that, but were concerned about durability. DS: It feels like an old relic that doesn't fit well...a contextual building...that doesn't fit. Peter: Let us show you photos of brick buildings in the area. DM: This is a complex program. You impact an enormous amount of streetscape. The view corridors are incredibly important. On the corridors: some should go through, some should terminate. The relationship between the three largest buildings, the Shapiro Building being one - the latter is so deliberate across Vining. I don't see (the connection). And then for the residential vs. the research - I'm not convinced there either. The pieces are where they are, I'm not arguing that. It really feels like the site plan are these three (plus) large buildings. The Binney Building fits, in many ways. I'm looking for more connections on the others.

DH: A model is needed before you come to Committee. I'm not sure that's the norm, but it is needed. AL: A broader context is needed. The massing strategy for the BWH building, the 3 slabs coming to an edge, is respectful of the Neville House, but nothing else. There are many other ways to do it; it needs more looking at. Adjusting the footprint might also open up view corridor possibilities. There are ways to arrange the SF and plan you need. DH: The issue of the bridge should be resolved. DAC: Yes - The BCDC approved the bridge at 70 Francis, but they presented clear arguments for the need for the bridge as part of the resolution. LE: The desire lines are unclear. And during the phasing...I want to protect the pedestrian and view corridors through the site.

DH asked about the process. DAC explained that it was complex, but that the BCDC and BRA would be asked to approve the two smaller buildings, while the two larger buildings would eventually return with more detail as an IMP (the BWH building) and PDA (the RTH building), but the site plan holding it all together and the massing would have to be resolved as well. DH: Comments?

Julie of the Friends of the Emerald Necklace noted that morning shadows would be significant at 15 stories. Is there any way to reduce them? Peter: We need the program shown. Julie: You can look at other massings. DH: Maybe that can be an agenda item in Committee. Julie: The smaller buildings are not so much a concern. Allison Pultinas of the Friends of Historic Mission Hill noted that the intersection (at Brookline) should get attention; a widening was proposed. The trees are suffering now, and have to be cared for if they are to be saved. Vining Street Extension now is a driveway; it should have sidewalks. Neville House doesn't face the Riverway; these buildings shouldn't turn their back. DH: Thanks. There should be more attention to the landscape architecture. With that, the MMHC Redevelopment Project was sent to Design Committee.



BOSTON
TRANSPORTATION
DEPARTMENT

ONE CITY HALL PLAZA/ROOM 721
BOSTON, MASSACHUSETTS 02201
(617) 635-4680/FAX (617) 635-4295

August 12, 2009

Sonal Gandhi
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201

RE: Massachusetts Mental Health Center Redevelopment – Project Notification
Form/Institutional Master Plan Notification Form

Dear Ms. Gandhi,

Thank you for the opportunity to comment on the Project Notification Form/Institutional Master Plan Notification Form (PNF/IMP NF) for the Massachusetts Mental Health Center Redevelopment. The proposal includes four buildings on three sites: a Residential Building with approximately 136 units of mostly affordable housing, to be developed by the Roxbury Tenants of Harvard; a Brigham and Women's Building with 358,670 square feet of space for research and development, clinical and office uses; a building on Binney Street with 56,540 square feet of clinical and office space; and a Partial Hospital/Fenwood Inn Building with 30 residential units, an 8,260 square foot outpatient clinic, and a "partial hospital" (a link between inpatient and outpatient mental health treatment).

The proposal also includes a 406-space parking garage to be located below the Brigham and Women's Building. Under the current plan, 90 parking passes would be provided by Brigham and Women's for the new residential units in the nearby Mission Park Garage.

The Residential Building and the Brigham and Women's Building would be constructed on the site of the former Massachusetts Mental Health Center, which contains five vacant buildings and approximately 163 surface parking spaces that are currently leased by the Department of Capital Asset Management (DCAM) to Brigham and Women's Hospital.

The project would be built in phases, with the Binney Street Building and the Partial Hospital/Fenwood Inn building to be constructed upon completion of permitting, and the Residential Building and the Brigham and Women's Building to be constructed in a subsequent

THOMAS M. MENINO, Mayor



phase when capital is available. The Brigham and Women's Building must be completed within 10 years of the completion of the Binney Building under the terms of the development agreement with DCAM.

As a next step, the proponent will be required to develop an Institutional Master Plan (IMP) and a Draft Project Impact Report (DPIR) that responds to the scope of work outlined by the Boston Transportation Department (BTD). Analysis performed by the proponent will lead to a Transportation Access Plan Agreement (TAPA), which will codify the project's transportation-related elements, including mitigation items. To further the discussion that will lead to the TAPA, the following comments identify issues needing clarification, additional submissions, and proposed mitigation items.

Parking

Parking in the Longwood Medical Area is a challenge for the City, the neighborhood, and the medical institutions that are so critical to the region's economy. Too much parking encourages driving and exacerbates traffic congestion. Too little parking puts pressure on parking in adjacent neighborhoods and could hinder job recruitment. BTD intends to work closely with the proponent to determine the minimum amount of parking needed to support this development, taking into account capacity in existing lots and garages, and assuming implementation of aggressive and effective parking demand management strategies, as described below.

Number of Spaces

The proponent is proposing to construct a 406-space underground parking garage in conjunction with the Brigham and Women's Building in the second phase of the project. This represents a rate of 0.65 parking spaces per thousand square feet of development. Parking for the Residential Building would be provided in the existing Mission Park Garage. The spaces displaced by the residential parking would be relocated in the new parking garage.

In the interim phase before the Brigham and Women's Building is completed, the proposal is to provide 50 parking spaces for the Department of Mental Health on the project site as surface parking or in the adjacent Servicer Center Garage. The existing site has 163 surface parking spaces.

The IMPNF notes that starting in October, 2009 Brigham and Women's Hospital will control 650 spaces in the Servicer Center Garage, an increase of 580 spaces from the 70 spaces it currently leases from MASCO.

To clarify future parking needs, the proponent should analyze the existing parking supply and utilization, and predicted supply and demand at four stages: 1) During construction of the first phase; 2) After the first phase is completed; 2) During the interim between the first phase and construction of the Brigham and Women's Building; and 3) After construction of the Brigham and Women's Building. The potential for accommodating parking demand in appropriately remote facilities should be included in the analysis.

The parking analysis should also include a description of proposed parking policies and pricing in the proposed underground garage, including allowable users, allocation of spaces among users, permits and leases, public parking, reserved and dedicated spaces, shared parking strategies, fee structures/rates, discounts, and cash-out (see below) policies.

Parking Demand Management

BTD commends Brigham and Women's Hospital for providing remote parking facilities for its employees and offering a parking rate structure that makes it advantageous for employees to park outside of the LMA. Future submittals should provide more details on the parking rate structure, and efforts to make use of additional appropriately remote parking facilities.

BTD encourages the proponent to take parking demand management a step further by implementing a "cash-out" program for employees that receive parking as part of their compensation packages. Employees that accept the parking cash-out would agree to commute by methods that don't require parking and would receive a cash allowance equal to the employer paid parking subsidy. This would reduce the demand on existing parking and would also reduce congestion on City streets.

Spaces for Car Share and Low Emission Vehicles

The IMPNF notes that Brigham and Women's will explore the opportunity to provide for a car-sharing service such as Zipcar in the Servicenter Garage. To encourage a reduction in personal automobile use, the proponent should provide spaces provided for car-share services and for carpool, vanpool, and shuttle service parking.

Current trends indicate that electric hybrids will soon be a significant percentage of all vehicles on the road. BTD is aggressively promoting the installation of a supporting infrastructure for these vehicles. We request a commitment to dedicate 5% of the total vehicle parking capacity for low-emitting and fuel efficient vehicles, and a commitment to provide dedicated electric vehicle charging stations.

Service and Loading

As noted in the IMPNF, Brigham and Women's Hospital is proposing to use existing loading and service areas located in the Servicenter Loading Dock at 89 Fenwood Road, at the West Plaza Loading Dock at 20 Shattuck Street, and at the Thorn Building (50 Shattuck Street). The site plan also shows a loading area for the Partial Hospital/Fenwood Inn off of Vining Street, a service entrance for the Brigham and Women's Building off the Vining Street extension, and a service entrance for the Residential Building off Fenwood Road. More information is needed to evaluate the service area for the Residential Building, such as the need for a curb cut, and confirmation that sufficient space is provided to ensure that service vehicles do not block the sidewalks.

Public Transportation

The project site is well served by public transportation, with ready access to buses along Brookline, Longwood and Huntington avenues and Greenline D and E Line trolleys. To promote the use of public transportation, Brigham and Women’s provides a 50 percent subsidy to the cost of MBTA and commuter rail passes for employees.

In addition, as a member of MASCO, Brigham and Women’s Hospital supports ten bus routes that provide service within one-half mile of the project site.

BTD comments the efforts of Brigham and Women’s Hospital to promote the use of mass transit and public transportation. As a further incentive to encourage mode shift, we encourage the proponent to institute a program used by other area hospitals in which free transit passes are provided to employees who give up their parking spots for three months under a “Three for Free” program.

Traffic

A detailed, empirically-based estimate of future trip generation based on resident, employment and patient projections and a comprehensive review of existing conditions will be required for each phase of this project. At a minimum, the evaluation should include analysis of the following intersections:

- Longwood Avenue and Riverway
- Longwood Avenue and Brookline Avenue
- Longwood Avenue and Binney Street
- Longwood Avenue and Huntington Avenue
- Francis Street and Brookline Avenue
- Francis Street and Binney Street
- Francis Street and Vining Street
- Francis Street and Huntington Avenue
- Riverway and Brookline Avenue
- Fenwood Road and Brookline Avenue
- Fenwood Road and Binney Street
- Fenwood Road and Vining Street
- Fenwood Road and Huntington Avenue
- Vining Street Extension and Vining Street

Counts at these intersections shall include bicycle and pedestrian counts as well as vehicular counts.

Pedestrian Access

Given the number of people who walk to destinations in this area or combine transit with walking, it is important to provide a safe and inviting pedestrian environment along any sidewalks impacted by this project. BTD is most interested in streetscape improvements (including generous sidewalks and street trees), wayfinding and signage, and enhancements to pedestrian access and connectivity to the campus. Future submittals should describe these and provide pedestrian counts and projections along major pedestrian routes to the buildings.

Bicycle Access

The project site is located between two major links in the City’s off-road bicycle network – the Southwest Corridor and Riverway portion of the Emerald Necklace. As the City expands its network of on-street facilities and makes connections to these off-road paths, bicycle ridership is expected to increase. In addition, the City is working with MAPC and neighboring cities to launch a bike share program in the spring of 2010, with an expected 1,500 to 3,000 bicycles to be located in the metropolitan area. These efforts are expected to dramatically increase bicycle ridership in the City over time.

Future submittals should describe the existing accommodations for bicycles (including the location and number of bike racks and bike cages) and any proposed improvements to the accommodations. The site plans must include secure covered bike parking spaces for residents and employees, and covered or open outdoor bike parking spaces for patrons and visitors. The IMP should also consider provision of spaces for bike share facilities, and potential bike share locations. All spaces must be conveniently located near building entrances. BTD is in the process of updating its Bicycle Facilities Policy that addresses the minimum number of spaces required – the draft new policy is attached.

To encourage commuting by bicycle, the project must also include shower facilities that are available for use by all building employees.

Transportation Demand Management

The PNF/IMP/INF briefly describes TDM measures currently implemented by Brigham and Women’s Hospital. BTD looks forward to reviewing a more detailed description of the program and new measures proposed to improve the effectiveness and comprehensiveness of the program. Using the existing program as a foundation, BTD will work with the proponent to determine the specifics to be codified in the TAPA.

Site Plan

The proponent needs to submit an engineered site plan within the context of the surrounding roadways at 1:20 scale depicting:

- Vehicular Access and Circulation
- Parking Layout and Circulation
- Pedestrian Access and Circulation
- Bicycle Access and Circulation
- Shuttle/Van Pool Pickup and Dropoff
- Parking Spaces for Car Sharing services
- Service and Loading*
- Roadways and Sidewalks
- Building Layout
- Bicycle Parking Locations and Types (covered, indoor, bike share, etc)
- Transit Stops and Connections
- Electric Vehicle Charging Stations

** Trash compactors/dumpsters need to be depicted as well.*

Construction Management Plan

As the project advances, the proponent will be required to develop and submit a detailed Construction Management Plan (CMP) to BTM for review and approval. The CMP will address TDM measures for construction workers, proposed street occupancies, equipment staging, sidewalk relocations and hours of construction work. BTM will work with the proponent to execute the CMP.

Sincerely,



Charlotte Fleetwood
Transportation Planner
Boston Transportation Department
Policy and Planning Division

Cc: Vineet Gupta, Director of Policy and Planning
John DeBenedictis, Director of Engineering



ASSESSING DEPARTMENT

Boston City Hall, Room 301, Boston, MA 02201

TO: Sonal Gandhi, Senior Project Manager
FROM: Matt Englander, Director of Tax Policy
DATE: August 19, 2009
RE: Mass Mental Health Center - Comments for IMP Scoping Determination

Boston residents are very fortunate to have some of the best hospitals, colleges & universities, museums, and other cultural attractions in their backyard. Partners HealthCare ("Partners"), who purchased the property from the state, will be funding the development phase, and managing a portion of the property upon completion, is one such world-class institution that adds to Boston's unparalleled medical landscape. However, when institutions like Partners expand or redevelop their property they increase their reliance on and demand for essential City services (police, fire, snow removal, etc). And while Partners attracts patients/residents from all over the world, it is the Boston taxpayers who must subsidize the cost of these services.

As Partners seeks to enhance their campus, I ask that they consider the impact on taxpayers by increasing their Payment-in-Lieu-of-Tax (PILOT) commitment.

Should you or representatives from Partners have any questions related to this consideration please contact me at (617) 635-4797.

Appendix B



July 10, 2009
Fenway Community Development Corporation
73 Hemenway Street, Boston, MA 02115
www.fenwaycdc.org, 617.267.4637

Ms. Sonal Gandhi
Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007
617.918.4314
Sonal.Gandhi.BRA@cityofboston.gov

**“Project Notification Form, Institutional Master Plan Notification Form,
Massachusetts Mental Health Center Redevelopment,
June 16, 2009”**

Sonal,

Thank you for the opportunity to review the Project Notification Form (PNF).

Fenway CDC builds and preserves affordable housing and champions local projects that engage the entire Fenway community in protecting the neighborhood’s economic and racial diversity as well as its long-term vibrancy.

Fenway CDC has **no objections** to moving to the next phase of review the proposal for a four-building, 633,960-sf complex, submitted by The Brigham and Women’s Hospital, Inc. (BWH), Partners HealthCare Systems, Inc., and Roxbury Tenants of Harvard Association, Inc. (RTH). In the next phase, after the BRA issues a scoping determination, the proponent will file a Draft Project Impact Report (DPIR) for further public review.

We are confident that the issues we raise here, though significant, will be thoughtfully addressed. Our most pressing concern is that insufficient assurance has been offered that the residential building will ever be built. This is the single most important community benefit from this proposal. Without this significant investment in the affordable housing stock of the neighborhood and the addition of community facilities, this would be an unattractive proposal.

Fenway CDC first reviewed the PNF against our **Urban Village Plan**. The Urban Village Plan is Fenway CDC’s vision for the Fenway’s growth into the 21st century. The core of that vision is a smart-growth residential neighborhood in the heart of Boston that is welcoming to the broadest spectrum of residents.

The plan sets goals in five key areas: 1) a sufficient and varied housing supply, 2) access to public transportation and reducing vehicular traffic, 3) community-building facilities such as a community center, 4) a healthy business community serving local residents and visitors while providing employment opportunities, and 5) open space and a responsible level of impact upon the environment. The first section of our comments on the proposal reflects our assessment of how the project would advance those goals.

1. **Housing:** The greatest threat to the future of the Fenway is maintaining economic diversity among its residents. This proposal will help meet that need:



- a. The residential building (to be developed, managed and controlled by RTH) will include approximately 66 affordable rental units and approximately 70 condominiums—a substantial number of which will also be affordable—for a total of 136 new housing units.
 - b. What will trigger the start of construction for this building?
 - c. How will this building be financed? There is at least one measure of the value of this building to the community: If this were off-site, inclusionary rental housing, the developer's expected contribution to the City's housing trust fund would be \$13.2 million. Can we assume that this same amount will be internally funded by this proposal?
 - d. Will new units—affordable and market-rate, on-site and off-site—be affirmatively marketed?
2. **Transportation:** This proposal suggests no particular benefit to the transportation goals of the Urban Village Plan:
- a. While this is an example of transit-oriented development, the proposal will generate additional vehicular traffic in an already congested area (217 net new PM peak-hour trips). Adjustments must be made to make sure that this project is incrementally beneficial to the overall vehicular traffic patterns in the neighborhood and not incrementally burdensome.
 - b. No new non-accessory vehicle parking spaces are proposed. The 406 proposed new parking spaces can all be considered accessory to the other uses being built.
 - c. BWH maintains a massive inventory of 5,027 vehicular parking spaces; 2,598 of these are on-campus, and many of the others are in our neighborhood. Even the addition of a modest number of accessory parking spaces needs to be balanced against the burden this existing inventory places on the neighborhood's transportation infrastructure.
 - d. We appreciate that the proponent will implement a TDM program.
 - e. No improvements to the area transportation infrastructure are being proposed.
3. **Community-Building Facilities:** This proposal makes positive steps to meet the community's needs for public facilities:
- a. The 10,000-sf community space holds great potential. We look forward to seeing more detail about this aspect of the proposal. Who will manage the space? What rates will be charged for its use? Since this could be a significant piece of the public benefit from this proposal, we would like to see much more detail on the space and solicitation of community feedback on its function and architectural program. The space's inclusion in the residential building brings us back to our earlier concern that the plan offers little assurance that it will eventually be built.



The proponent gains significant value from the award of these development rights. In return for this windfall, we believe that the community should receive a guarantee that the portions of the project that most greatly benefit the neighborhood will get built and become usable in a reasonable amount of time.

2. **Transfer of development rights:** Who owns development rights granted through a process like this IMP? Can they be sold, transferred, or banked?
 - *Selling:* Should these development rights be sold by the institution that receives the zoning relief?
 - *Moving:* Are these rights, once granted, transferable from one institutionally controlled parcel to another or are they associated with the parcels for which they are granted?
 - *Banking:* Are the rights retained in the event the institution decides not to build?
3. **Energy Systems (PNF page 3-36, paragraph 3.5.4):** Can the sustainable design and carbon footprint data be combined in a new “energy” section in PNF, DPIR and FPIR submissions? BWH may be familiar with American College and University Presidents Climate Commitment. Has BWH published a report along those lines? We request that such a report be inserted as an appendix to the PNF.
4. **BWH-Owned Facilities (PNF pages 4-7 and 4-8, Table 4-1):** The list of BWH-owned properties does not include important information that should be gathered from other sources and presented as a whole. Members of the Fenway CDC’s Urban Village Committee have been asking the BRA to require institutions to provide this type of information in a unified format since 2005.

We suggest presenting a spreadsheet listing all parcels owned by the institution. The Parcel ID should be the list sort field. This fields should include; 1) Parcel ID numbers and the City of Boston assessor’s listed address and description, 2) Parcel owner, 3) Lot size, 4) Parcel real estate tax-rate category and exception status, 5) City of Boston assessed land and building values, 6) Computed annual real estate tax that assessed values imply, 7) Underlying zoning and IMP status, 8) Gross square footage of the building, number of dwellings, dwelling units, dormitory beds and number of parking spaces for each buildings on each parcel, 9) Totals and subtotals for each field.

The total of 2,110,923 square feet of facility space reported on this table compares well with the 2,004,986-square feet of exempt property space reported by the City of Boston’s Assessors office.

5. **Payment in Lieu of Taxes/PILOT (PNF page 4-24, paragraph 4.7.1.6):** PILOT payments are generally tied to particular parcels for set lengths of time through agreements with the City of Boston assessing department. Can BWH provide details of these agreements? If not, BWH should at least list the PILOT obligations that it has already agreed to throughout the lifetime of this IMP—that is, for each of the next ten years and including anticipated adjustments from this PNF.

BWH has not listed its current PILOT payment in the PNF. The City of Boston Assessing Department has, however, recently compiled a report that includes this information. For FY09, BWH owns \$815,886,700 of assessed value in its tax-exempt properties. If not exempt, BWH would owe \$22,118,688 a year in property tax. The hospital currently pays just \$1,315,822 in PILOT, or just 6% of the property tax burden of a comparable for-profit entity.



- 6. **Project Benefits, "Linkage" (PNF page 1-13, paragraph 1.3) Linkage Payments (page 4-24, paragraph 4.7.1.8):** This project should generate housing and job linkage payments. BWH has neglected to calculate these payments in the PNF. Our understanding is that housing linkage payment would be \$3,432,973. Job linkage would be \$684,850. We ask that the proponent report in the next review phase whether or not housing linkage will be internally directed to the residential building or delivered to the City's housing fund.
- 7. **Financing:** How will BWH finance this project?

Sincerely,

Lisa Soli
Interim Executive Director,
Fenway CDC

Marc Laderman
Member, Fenway CDC
Urban Village Committee
87 Gainsborough Street

Copy:

Via e-mail

David Holtzman, Fenway CDC Development and Sustainability Planner
 Manuel Delgado, Board Member, Fenway CDC, Chair of Urban Village Committee, Fenway CDC
 Romin Koebel, Urban Village Committee Member, Fenway CDC

Senator Steven Tolman, Second Suffolk and Middlesex
 Representative Byron Rushing, Ninth Suffolk
 City Councilor Michael Ross, District 8
 City Councilor Stephen Murphy, At-Large



Charles River Watershed Association

Sonal Gandhi
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

June 27, 2009

RE: Mass Mental Health Center Redevelopment

Dear Ms. Gandhi:

Charles River Watershed Association (CRWA) has reviewed the Project Notification Form/ Institutional Master Plan Notification Form (PNF/IMPNF) for the above referenced project. There are several project elements that we believe need further analysis and discussion in the Draft Project Impact Report (DPIR) and should be included in the BRA's Scoping Determination for the IMP in order to ensure that not only are all environmental impacts minimized and mitigated, but the development will in fact enhance the environment. The expanded development in the LMA is leading to numerous cumulative environmental strains that are addressed only in a limited way by site-specific planning and design review process. Assessing cumulative impacts and identifying appropriate mitigation is an important function of the Article 80 review process.

We provide comments specifically focused on hydrologic sustainability, and hope that they will assist the BRA and the project proponents as the planning and design evolves.

Stormwater Management

It is our understanding that the stormwater from this site drains, via the Boston Water and Sewer Commission's municipal storm drain system, into the Muddy River and out to the Charles River. Both of these waters are listed as Category 5 waters on the Massachusetts Integrated List of Waters, meaning they fail to meet state water quality standards. In addition, the Muddy River suffers from significant hydrologic impairments, having both major flooding problems and severe low flow problems. Construction on the Muddy River Restoration Project, which will include bank to bank dredging of the entire river as well as stream daylighting and wetlands restoration, is due to begin later this year, and reducing sediment loads is essential to protecting the value of this investment in flood protection and environmental restoration.

Most of the above problems are a direct result of stormwater discharges into the Muddy River. Any redevelopment that is proposed in areas that drain directly into the Muddy River system, therefore, needs to focus carefully on stormwater management issues, and

should maximize opportunities to reduce peak storm flows, minimize imperviousness, maximize infiltration and capture sediments. The significant expenditure that is being made by the federal and state government, as well as by the City of Boston, to dredge and restore the Muddy River must be protected to the maximum extent possible.

The PNF / IMPNF document mentions that the DPIR will evaluate the project impact on the Muddy River but does not make any reference to putting together a stormwater management program to ensure that every effort will be made to protect the River from flooding and water quality impairments. Thus, it is our hope that the DPIR will study various alternatives to enhance stormwater management on the site so as to demonstrate how improvements will be made over the existing conditions. Stormwater management should aim to maximize infiltration, slow runoff from the site, maximize the use of vegetation, capture rooftop runoff for irrigation, and minimize sediment and nutrient loading. Project planning should also identify opportunities for recharge, and design buildings, open space and infrastructure to take advantage of these areas. Also the project design should attempt to maximize the tree canopy and vegetated areas, including green roofs, to reduce the heat island effect, improve air quality and increase evapotranspiration.

While the infrastructure section of the PNF gives some details on the stormwater management controls that will be established, much more detail needs to be included in the DPIR since water related issues play a direct role in the project planning and design. Not only should the project be developed to meet the phosphorus reduction requirements of the Total Maximum Daily Load for Nutrients in the Lower Charles River Basin (TMDL) and the requirements of Boston Water and Sewer Commission, stormwater infrastructure design should focus on water quality improvements, especially reducing the sediment load to the river, and on reducing peak flows. A comprehensive approach to stormwater management should aim to restore the natural water cycle (i.e. ~10% of annual rainfall discharged from site as runoff; ~40% lost through evapotranspiration; ~50% recharged to shallow or deep storage). The project should examine opportunities to achieve specific standards such as the following:

- Infiltrate flows from impervious cover for up to a 2 year storm,
- Reduce total annual runoff volume from the site by 50% over existing conditions
- Design site to maximize evapotranspiration (minimum of 20% vegetation cover overall)

We feel that the Article 80 Project Impact Review is the appropriate process for a full analysis of the stormwater management program. The IMP and DPIR should include specific, detailed information and alternatives analyses of stormwater management on the site. We urge the BRA to include the following in the scoping for the IMP and DPIR:

1. Assess the cumulative impact assessment of the overall project, including considerations such as overall changes in impervious cover, tree canopy, groundwater recharge, stormwater runoff, open space and water use;
2. Provide soils and groundwater information, to the extent it is available, to determine opportunities for recharge;
3. Propose stormwater management goals, and designs to achieve these goals;

4. Detailed information about any surface stormwater management features such as swales, vegetative filter strips, rain gardens, permeable pavement or vegetated storage areas;
5. Expand the Urban Design and Sustainable Design sections to include goals to begin to restore the area's natural hydrology, to reduce stormwater flows into the Muddy River, and to increase the total urban tree canopy through street "greening"¹.
6. An assessment of the opportunities to reduce even further the peak flows and volume of stormwater runoff, including estimates of the impacts in a one-year storm;
7. An assessment of how the site could meet DEP's stormwater management policy in its entirety, not just "to the maximum extent practicable;"
8. A plan to minimize the primary pollutants of concern for the Muddy River, sediments and nutrients;
9. A maintenance plan for the stormwater BMPs and an operations plan to minimize stormwater pollution.

Groundwater

The location of this project in an area of historic fill, and the ongoing problems throughout many areas of the City with groundwater levels, make it important that this aspect of the project be designed with the utmost care and in anticipation of any potential impacts. Although the project is not within the Groundwater Conservation Overlay District, the project needs to be designed to minimize groundwater impacts. Investigations should also include the potential seasonal changes in groundwater levels, as well as potential effects on groundwater flow. In some areas of Boston, construction of sub-surface projects such as tunnels, underpasses and even building foundations have altered groundwater flow patterns, resulting over time in changes to ambient groundwater levels. Groundwater flows are extremely slow so alterations may occur over years.

The DPIR and the Scoping Determination for the IMP should include an assessment of groundwater flow directions, as well as a determination of whether those directional flows change seasonally. If the project shows any potential for altering flows, either slowing or reducing flows into the Muddy River, or conversely reducing flows back into the ground during periods of high groundwater, or causing any groundwater "mounding," the DPIR should document a mitigation plan for any such alterations. In addition, the DPIR should specify what source of water would be used should groundwater recharging be necessary during or after construction. Finally, a detailed plan for the treatment and disposal of water from dewatering activities should be included in the DPIR.

¹ According to the "Green Streets" manual published by Metro OR, a "green" street is designed to incorporate a system of stormwater treatment within its right of way so as to minimize the quantity of water that is piped directly to streams or rivers.

Impacts to the Emerald Necklace

The project will increase not only the vehicular traffic in the area, but also the number of pedestrians, and will likely increase the use of the Emerald Necklace Parks, including the Fenway. This park system is already heavily used, and is in need of significant capital and operations improvements. Therefore the DPIR needs to ensure that the aesthetic and environmental opportunities to improve the Fenway are maximized to the extent possible. It is advisable that the proponents coordinate their design efforts with the Department of Conservation and Recreation (DCR) especially with regard to its interface with the Fenway.

We also suggest that project proponents work with the BRA, the Boston Parks and Recreation Department, the Medical Academic and Scientific Community Organization (MASCO), the Fenway Alliance, and the Emerald Necklace Conservancy to develop a program to support the improvement of maintenance and management of the park system to mitigate this increased use and to provide support for the community-wide effort that is underway to bring this park system up to an acceptable community standard. This contribution could be made as a linkage payment (as a part of the public benefits package) or through the implementation of a specific capital improvement project for improving access to and maintenance of the park or for environmental restoration projects in the LMA as a whole. The mitigation package to be included in the DPIR should therefore provide details on both parkland improvements and well as street greening projects.

Sustainable Design

While there is significant commitment to sustainable design for the various buildings in the PNF document, there are no specifics provided on what kinds of best management practices and technologies will be incorporated at the site level. The Scoping Determination for the IMP and the DPIR need to explicitly define what the project aims to achieve in terms of standards for environmental sustainability on the overall site level as well as how the project will determine indicators for sustainability. Also, while the LEED system provides one metrics for incorporating green building standards and requirements, there are only limited credits available for stormwater management in the LEED. Given that the adjacent Muddy River is a valuable ecological and community resource for the neighborhood, CRWA encourages the proponents to consider ecological designs beyond the checklists of the LEED rating system when considering "greening" strategies for the site, landscape and the neighborhood more broadly.

We encourage the project proponents to expand the Environmental Protection and Urban Design section, and especially the Sustainable Design section, to include a broader discussion of and planning for water, especially stormwater management, and open space. The proposed landscaped pedestrian way between the Brigham and Women's building and the Residential Building, offers the opportunity to integrate open space design with a variety of stormwater landscape features. Also, in addition to planting new street trees along Fenwood Road, Binney Street (with sidewalks being widened), Vining

Street and Vining Street Extension, the proponents should explore the opportunity of transforming all the above into Green Streets. We would be happy to work with the project proponents to explore site and neighborhood scale Low Impact Development (LID) opportunities including Green Streets, Greenways, porous parking lots, as well as building-scale designs such as green roofs and walls, water reuse, and irrigation alternatives. Many of these techniques can actually reduce costs, as well as improve the local environment.

Instead of following the prevalent practice of discharging all the wastewater from the various buildings through the BWSC sewer into the MWRA system to be treated at Deer Island, a strategy needs to be developed to recycle and reuse wastewater. Specific standards should be adopted for wastewater reuse for flushing toilets etc. (through double plumbing the building) as well as capturing, filtering and storing roof run-off. CRWA would encourage the proponents to consider a green roof for the various buildings but also as a retrofit for all other buildings on its campus. Given that there is such a dearth of green / open space in the LMA as a whole, green roofs would not only provide cleaner roof runoff and reduce the urban heat island effect in the LMA but also provide an aesthetically pleasing amenity for the building occupants as well as habitat for birds and insects.

By evaluating the environmental conditions of the entire site, the proponents can find numerous opportunities for modifications and improvements, small and large, and can accomplish far more than simply developing a collection of individual green buildings. Many LID designs are simple and relatively inexpensive, while being highly visible and providing excellent educational opportunities. This project offers a huge potential to expand the purview of green practices from individual building scale to looking a "greening of infrastructure" at an overall neighborhood level. Through retrofitting the entire site area with LID best management practices, the proponent can achieve a much larger impact than the cumulative impact of a collection of individual green buildings.

We appreciate the opportunity to provide comment on this project through the Article 80 review process. Please feel free to contact me should you have any questions.

Sincerely,



Pallavi Kalia Mande
Urban Restoration Specialist

cc: The Brigham and Women's Hospital
Medical Academic and Scientific Community Organization
Boston Water and Sewer Commission
Boston Parks and Recreation Department
Boston Environment Department
Muddy River Maintenance and Management Oversight Committee



Children's Hospital Boston

A teaching affiliate of Harvard Medical School

Vice President for
Real Estate Planning and Development

Charles Weinstein

300 Longwood Avenue
Boston, Massachusetts 02115
phone 617-355-2338 | fax 617-730-0019
charles.weinstein@childrens.harvard.edu

July 1, 2009

Ms. Sonal Gandhi
Senior Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007

Re: Massachusetts Mental Health Center Redevelopment

Dear Sonal;

Children's Hospital Boston is pleased to have the opportunity to provide this letter in support of the proposed phased development of the Massachusetts Mental Health site by Brigham and Women's Hospital, Partners HealthCare System, and the Roxbury Tenants of Harvard.

This project is a model effort in collaboration by multiple partners to meet multiple, and mutually reinforcing, goals. For the Commonwealth, replacement of obsolete facilities with new residential and outpatient space to accommodate Department of Mental Health (DMH) programs. For the nearby community, working through the Roxbury Tenants of Harvard, 136 new residential units (including 66 affordable rental units and approximately 70 condominiums) and community space, and for the Brigham and Women's Hospital, the site for a new building to accommodate research, clinical and office uses for both the Brigham and DMH.

Their spirit of collaboration will apply to the construction period, when construction phasing and traffic will challenge both the nearby community and institutional neighbors. They have already begun coordination efforts with Children's, Dana Farber and other area representatives on the impacts to Binney St in particular, a vital corridor for patient and family traffic, as well as emergency vehicles and materials deliveries.

The Longwood Medical Area, with its health care and educational institutions, is a critical resource to the City and Commonwealth. It needs to constantly evolve, replacing outdated programs and facilities with new, while maintaining, respecting and enhancing the Mission Hill community, with its vibrant residential life. The proposal before the City can achieve these objectives, and Children's Hospital Boston is pleased to offer our enthusiastic support.

Sincerely,

Charles Weinstein, Esq.

CW/jp

Cc: A. Mombourquette
K. West
J. Messervey
M. Papola

The first place for children

Boston

Groundwater Trust

234 Clarendon St., Third Floor, Boston, MA 02116
617.859.8439 voice • 617.266.8750 fax
bostongroundwater.org

July 2, 2009

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Elliott Laffer

Ms. Sonal Gandhi, Senior Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007

Subject: Massachusetts Mental Health Center Redevelopment Project

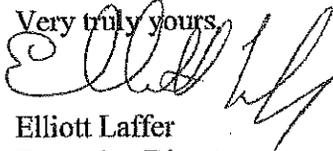
Dear Ms. Gandhi:

Thank you for the opportunity to comment on the Project Notification Form for the MMHC Redevelopment Project. The Boston Groundwater Trust was established by the Boston City Council to monitor groundwater levels in sections of the City where the integrity of building foundations is threatened by low groundwater levels and to make recommendations for solving the problem. Therefore, my comments are limited to groundwater related issues.

As noted in the PNF, the project is not located in the Groundwater Conservation Overlay District. I appreciate the commitment, as stated in the document, that the project will be designed to ensure that area groundwater levels are maintained and to work with the Trust toward the achievement of this goal. In this case, that will require particular attention to the design of the multi-level underground garage planned for the Brigham and Women's building. I appreciate, as well, the response from the proponents at the scoping session that, to their knowledge, buildings in the vicinity are not supported on wood pilings.

I look forward to working with the Authority and the proponents to assure that their commitment to maintain groundwater levels is achieved.

Very truly yours,



Elliott Laffer
Executive Director

Cc: Kathleen Pedersen, BRA
Maura Zlody, BED



TEL 617-566-6565
FAX 617-566-1440

July 24, 2009

Sonal Gandhi
Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

Re: Brigham & Women's Hospital / Massachusetts Mental Health Center
Redevelopment / Institutional Master Plan Notification / Project Notification Form

Dear Ms. Gandhi:

Mission Hill Neighborhood Housing Services through its Neighborhood Planning and Review Committee has reviewed and discussed the proposed MMHC project presented by Brigham and Women's Hospital. At its July meeting, the committee voted to make the following comments and requests the following community benefits related to the BWH MMHC project:

- MHNHS understands the need to build the facilities for the DMH as soon as possible in order for BWH to meet its obligations under the RFP. MHNHS supports the benefits the BWH MMHC project will provide to the DMH, including the construction of 70,000 sf of new space at no cost to the State, the provision of 50 free parking spaces, and the BWH-funded operating trust. MHNHS supports the return of the Massachusetts Mental Health Center to the Mission Hill neighborhood.
- MHNHS also supports the multi-million dollar benefits package the project will bring to RTH including the free land for the 136 unit RTH-developed rental housing and condominium project at the site, the free land for the 10,000 sf RTH community space at the site, parking for the residential component, operating money for the RTH community center and other RTH community recreational space off site, provision of guarantee to underwrite the RTH affordable housing, and the extension of program and service funding at RTH for an additional 8 years.

- MHNHS supports the development of 136 units of affordable worker housing for renters and homeowners at the site.
- MHNHS would like to see the many mature trees on the site preserved. We understand that the current schematic design of the residential building accommodates this preservation by pulling that construction back from the lot line 40 feet and protecting the root balls of the existing trees. We support this design effort.
- MHNHS would like to see the many artifacts related to the historic buildings and grounds identified, preserved, and reused as part of the redevelopment of the site.
- While the use of the 306,000 sf BWH building has not been established, we understand that through this approval process the assumptions and review of traffic and parking and other impacts is based upon 50% of the space being clinical and 50% of the space being Biomedical Research Institute (BRI) lab space. Mission Hill NHS further understands that this approval process sets the parameters of the project moving forward in terms of massing, height, and use. While the use has not been fully established, and we recognize needs will change in the 7 to 10 years anticipated before this component of the project commences, Mission Hill NHS has significant concerns about certain lab space being proposed adjacent to residential space and requires further information about the biolab level being proposed, the research that would be allowed in the facility, and the specific construction containment and HVAC mitigations to be included.
- MHNHS is concerned that the necessary phasing of the project will increase the construction period and the construction period impacts on the direct abutters, Brigham Circle and the surrounding neighborhood. BWH has committed to forming a Community Construction Mitigation group to address the impacts of the construction, deliveries, trucks, and construction workers on the community and to prepare the CMP for the various phases of the redevelopment of the MMHC site. While direct abutters must be represented on this group, Mission Hill NHS would also like representation on this group to address potential impacts and mitigations for the Brigham Circle area and wider Mission Hill community.

- An important mitigation for BWH construction worker vehicles and BWH employee, visitor and patient cars is the MBTA E line. To ensure that this important automobile alternative remains available to both LMA institutions and the residential community, we ask that representatives of BWH join Mission Hill neighbors in our efforts, including but not limited to participation in community meetings with the MBTA, to ensure that the E Line continues to run evenings and weekends and continues to provide trolley transportation down Huntington and South Huntington to Heath Street.
- MHNHS shares the concern of neighbors regarding the interim use of the MMHC site. While we recognize the need to use this site for construction staging, given the potential 10 years time period before the completion of the BWH portion of the redevelopment plan, MHNHS would like to be involved in the proposed charrette and the interim planning for the site and would like to see the amount of the site dedicated to "temporary" surface parking kept to a minimum.
- BWH should continue to provide data and outreach and hiring strategies to increase the number of Mission Hill residents employed at the institution. As part of the 70 Francis/Brigham Green project we suggested opening HR office in Brigham Circle and setting hiring goals for Mission Hill residents. BWH reports in this document that of their 2007 new hires, 10% were from Mission Hill and of their 2008 new hires, 6% were Mission Hill residents. Despite these advances more work needs to be done to ensure the impacted residential neighbors benefit from the economic engine of the City of Boston. We still hear numerous personal accounts of Mission Hill neighbors not being hired for entry level positions, Mission Hill youth not being employed for jobs they are qualified for due to competition with out of neighborhood candidates, and still many others who lack skills for the positions open. The dialogue and information flow between community groups and HR needs to continue and needs to expand. BWH should identify the various skill levels of the 550 -700 permanent jobs created by this project and the number of Mission Hill residents to be hired at the various skill levels. BWH should periodically report the results of their employee training program through their Workforce Development Plan to the Mission Hill community. Additionally, BWH should expand the number of summer jobs and internships for Mission Hill youth.
- To assist with meeting the need for more affordable family housing in the Mission Hill community, 50% of the housing linkage payments for this project should be allocated to the impacted neighborhood of Mission Hill.

Housing funds should be disbursed as housing creation agreements to designated projects, both in RTH and in Mission Hill.

- Mission Hill NHS acknowledges the critical partnership with BWH in support of the Kevin W. Fitzgerald Park at One Brigham Circle.

We thank you in advance for consideration of our concerns and requests.

Sincerely,


Jim Hoffman
Executive Director


Patricia Flaherty
Senior Project Manager

Cc: State Representative Jeffrey Sanchez
Boston City Councilor Michael Ross
Nikko Mendoza, Mayor's Office of Neighborhood Services
John Palmieri, Director, Boston Redevelopment Authority

Sullivan, Katelyn

From: Gandhi, Sonal
Sent: Tuesday, July 28, 2009 10:43 AM
To: Sullivan, Katelyn
Subject: FW: Massachusetts Mental Health Center Redevelopment
Attachments: Gulliver's Travels (1).docx

From: Betty Commerford [mailto:ecommerford@joimail.com]
Sent: Monday, July 27, 2009 10:31 PM
To: Gandhi, Sonal
Cc: Ross, Michael (City Council); JeffreySanchez@hou.state.ma.us; bill.gage@state.ma.us; Lipsey, Ellen; ecommerford@joimail.com
Subject: Massachusetts Mental Health Center Redevelopment

Ms. Sonal Gandhi, Project Manager
 Boston Redevelopment Authority

Subject: BWH IMP Notification Form, PNF: Massachusetts Mental Health Center Redevelopment 6-16-09

The Mission Hill Health Movement, Inc. (MHHM) board members unanimously voted this evening to formally submit the following comments and information regarding the title subject.

MHHM, incorporated as a 501c3 in 1969, has continuously sought to improve the health status, services and quality of life available to residents of Mission Hill. In recent years we have prioritized programs addressing air quality, capacity building of community organizations, and issues of health disparities, particularly asthma and diabetes. In the nineteen sixties and seventies institutional expansion was the greatest threat to the survival of Mission Hill as a vigorous residential neighborhood. It was an era of civil rights as well as town/gown fights, ultimately it benefited us all.

In April of 1977 MHHM, Roxbury Tenants of Harvard (RTH) and the Brigham and Woman's Hospital (BWH) (then AHC), after protracted discussions initiated by the Commissioner of the MA Department of Public Health and his General Counsel, signed an Agreement (The '77 Agreement) which dealt with many concerns and practical considerations raised then as now by the hospital's building and land use plans. The provisions of Article III Section B "Land Use" in the 77 Agreement were guaranteed by the hospital through January 1, 2010. Central to the entire Agreement was the principle of clear boundaries between the 'Institutional Area' west of Francis Street and northwest of Huntington Ave., and the rest of Mission Hill - the 'Residential Area'. Two lines on page two, paragraph eight, of the hospital's three page April 27 press release: AGREEMENT REACHED BETWEEN COMMUNITY GROUPS AND AFFILIATED HOSPITALS CENTER state:

"The agreement generally confines future construction of new facilities by AHC to the institutional area and prohibits AHC from acquiring property within the residential area, either by lease or purchase." *

While "Land Use" was central to the practicalities and may prove to be so again, of equal concern to us then as now were the hospital's good faith assurances and the understanding, expressed in the last line of the Agreement, on page seventeen just above our signatures, that

"the residents and the institutions can cooperate together to build a stronger community in which each can live and work."

We all understood that situations might arise where amending or waiving certain terms or provisions of the Agreement might be mutually beneficial. Provision and procedure for doing so was made. ** We have received no notice(s) from BWH, nor has there been any agreement to amend or waive any term or provision of the

7/28/2009

Agreement.*** Rather than assume ignorance on the part of BWH we regret that we have historical precedent to assume otherwise.

Then as now, the hospital spoke of its hope and commitment to meaningful interaction with us in the future, in fact choosing to quote from the Agreement: "It is hoped that the terms of this agreement and, more importantly, the process which led to its execution, will foster a new ongoing relationship between the residents of Mission Hill and its institutions whereby the residents and the institutions can cooperate to build a stronger community in which each can live and work." (Hospital Press Release, April 1977)

That was then, this is now:

"The proponent (hospital) is committed to effective community outreach and will engage the community to ensure public input on the Project. See Section 2-1 for further discussion of community involvement with BWH and RTH projects." (5.7Community Outreach p. 5-1)

Section 2-1 referred to above is a nicely written account from the hospital viewpoint which we find factually amiss. While we greatly appreciate and value the responsiveness to Mission Hill residents and community organizations by individual staff and clinicians, the BWH planners cite only their history of interactions resulting in extending the hospital's encroachment into the residential area.

As to the submission before you:

The scheme is intriguing, some say ingenious. It presents the community and the DMH some exciting possibilities. However, only BWH presently appears to have a sure thing. The DCAM MOA might assure that Mass Mental Health Center could return, but what if BWH is not able to build on the old MMHC site in ten years ...or twenty ...or ever? Is Mass Mental assured of a home in the Binney Building beyond ten years? Is there a similar MOA to even partially protect RTH? What if RTH cannot build the residential building? Does the ninety five year Ground lease then become wholly the property of BWH?

It appears that the Department of Mental Health (DMH), RTH and the greater Mission Hill neighborhood are exposed to all the risks of environmental degradation, permitting, obtaining zoning variances, financing, and so on. Could we end up with no residential building, no return of MMHC but with BWH spreading further and higher into the community as it has with the two other RTH residential blocks lost to hospital encroachment since the 77 Agreement? There were 25 houses and 59 families lost to the Materials handling building alone, promoted at the time as 'a good architectural fit'. The leftover trailers from the Shapiro Building construction sit as empty eyesores in a sandy wasteland on Binney Street.

Where are **current** air studies for the traffic congestion (moving and idling) and exhaust from commercial vehicles, particularly diesels?

Ultimately, the traffic, the noise, the parking and air pollution impact fall on the residents of RTH and the broader community, hospital staff, patients and visitors - not planners.

Where are any demonstrations of financial feasibility? Where are reasonable development plans firmly based on need?

Is there a clear and pressing need for another, highest yet, hospital building?

Lacking so much data the submission seems based on opportunity for more land rather than need.

We dread a rush to demolition of the 1912 buildings. Careful, thoughtful study and dialogue would avoid any demolition based primarily on the understandable institutional urge to seize any opportunity to obtain a prime site. How much easier the review path if a design for a site can be presented which also speaks to neighborhood goals of affordable housing and accessible mental health services.

We fear that this submission, given the pattern of changes to the BWH IMP to date, may be mostly driven by the need and/or the opportunity to landbank the MMHC site for some future expansion that could bear little or no resemblance to the current outline.

Given the plan to "bifurcate the Ground lease from DCAM ... at the time the Residential Building is

constructed." Who will be the owner/builder of the building, RTH or BWH? Whose money will be used and where will it come from? The lease of the building at Binney Street to DMH is for ten years. If the music stops (i.e. construction is not undertaken) could not both RTH and DMH be left standing while the 95 year lease allows BWH to sit and mothball the old MMHC site with the 1912 building long gone, and simply use it for surface parking while awaiting better times? See attachment re: cucumbers

The questions and concerns above regarding what is in, and what is lacking, in the submission could conceivably become relevant in some future discussion but to us **they are now moot**. In our view nothing can go forward while BWH is in violation of the 77 Agreement. Current BRA and DCAM staff may not realize that BWH cannot execute a Ground lease with DCAM without continuing violation of the letter, spirit and intent of the 77 Agreement.

Thank you for your attention and thoroughness. We look forward to any dialogue opportunity.

Ceredo L. Dean, President
James J. Farrow, Vice President and
Elizabeth Commerford for Mission Hill Health Movement
617-694-9096

relevant passages from the 77 Agreement

* LAND USE p.3 Article B. #2 "In furtherance of the above principle of clear boundaries bordering the residential Area ... (the Hospital) will not acquire property within the Residential Area, either by purchase, lease, or otherwise, nor utilize property within the Residential Area for institutional purposes."

** AMENDMENTS p.14 Article F. #1 "Any proposed amendment or waiver of any portion of this Agreement must be executed by AHC and MHHM."

*** NOTICES p.15 Article G. #1 "For any notice to be effective hereunder it must be given in writing and mailed to the party for whom intended, postage prepaid, registered or certified mail, return receipt requested, and addressed:... if intended for MHHM, as follows: Mission Hill Health Movement, Inc., 1534 Tremont Street, Roxbury, Massachusetts 02120" (please note: address unchanged then to now)

Attachment: is from community 1973 testimony. Relevant then as now.

cc/ City Councilor Michael Ross
State Representative Jeffrey Sanchez
Bill Gage/ MEPA
Ellen Lipsey/ BLC
Simon Brona Sec. of State's Office



MEDICAL ACADEMIC AND SCIENTIFIC COMMUNITY ORGANIZATION, INC.

People / Places / Plans / Future

Member Institutions

- Beth Israel Deaconess Medical Center
- Brigham and Women's Hospital
- Children's Hospital Boston
- Dana-Farber Cancer Institute
- Emmanuel College
- Harvard Medical School
- Harvard School of Dental Medicine
- Harvard School of Public Health
- Immune Disease Institute
- Isabella Stewart Gardner Museum
- Joslin Diabetes Center
- Judge Baker Children's Center
- Massachusetts College of Art
- Massachusetts College of Pharmacy and Health Sciences
- Massachusetts Department of Mental Health
- Simmons College
- Temple Israel
- Wentworth Institute of Technology
- Wheelock College
- The Winsor School

Associate Members

- Blue Cross Blue Shield of Massachusetts
- Harvard Vanguard Medical Associates
- Merck Research Laboratories

July 27, 2009

Ms. Sonal Gandhi
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

RE: Comments on Project Notification Form (PNF)/Institutional Master Plan Notification Form (IMPNF) for Massachusetts Mental Health Center Redevelopment

Dear Ms. Gandhi,

The Massachusetts Mental Health Center (MMHC) site redevelopment has been long awaited and much anticipated, to return MMHC to its proper home in the Longwood Medical and Academic Area (LMA) of Boston, in modern facilities that will support its programs to provide the highest level of mental health research and patient care to its constituents. The proposed collaboration of Roxbury Tenants of Harvard, Brigham and Women's Hospital, and Partners HealthCare System is uniquely positioned to help MMHC realize its plans, while at the same time implementing their respective longer term visions for additional affordable housing opportunities on the one hand and additional space for medical research, medical office and support space on the other hand.

We look forward to assisting with and participating in the review process, as co-facilitators of the LMA Forum with the BRA and as a member of the BWH's Task Force.

The proposed plan contains two small early action projects (the Binney Street Building and the Partial Hospital/Fenwood Inn Building) that need to be developed in the short-term (18+ months), using the site of the closed Mass Mental Health facility as a staging area; and two large, longer term (7-10 years) buildings, the Brigham and Women's Hospital Building and the RTH Housing Building. To a large extent, the comments below relate more to the longer term components of the plan than the short-term components because the buildings are larger, more complex, and their uses and dimensions potentially have greater impacts on the public realm. As the proposed project and master plan filings proceed into the Draft Project Impact (DPIR) stage, I suggest the following areas be clarified or further detailed.



MEDICAL ACADEMIC AND SCIENTIFIC COMMUNITY ORGANIZATION, INC.

People / Places / Plans / Future

Architecture/Open Space/Site Design/Density/Shadows

This large site is prominently located at an important gateway to the City of Boston from the west of Boston, via Rt. 9 and Brookline Village, and from the southwest via Rt. 1/Jamaicaway. It also is a gateway to the heart of the Commonwealth's Life Sciences community – the LMA. For these reasons and due to its adjacency to the historic Emerald Necklace park system and parkways, as the proponents know, the plans require thoughtful and sensitive architectural and site plan development. In addition to the overall relationship to the gateway and the park, each individual building in the plan also has its own special challenges and relationships that will drive good design decisions.

We support the concepts proposed in the filings to convert an existing surface parking lot at the corner of Brookline Avenue and the Riverway into pedestrian and open space uses. As design proceeds it would be helpful to have the design further acknowledge the 'gateway' aspects of the site, and reinforce its visual and physical connections with the Emerald Necklace, while balancing "softscape" and "hardscape" particularly near the juncture of Fenwood Road/Brookline Avenue/Riverway and the site driveway with the Riverway. I recognize that site planning has to serve the needs of the contiguous buildings' occupants; because of this site's prominence, it has the opportunity to become, through design, a more beautiful and imageable gateway with a stronger relationship to the Emerald Necklace parks. Also see below, Transportation/Access.

The DPIR should also cover in greater detail how the buildings' architectural designs will relate within their specific community sub-blocks or contexts. For example, the Binney Street Building and site plan needs to both relate architecturally to the LMA community and BWH's campus including the Shapiro Center and Tower Building, while the Partial Hospital/Fenwood Inn Building and site plan needs to relate more specifically to the residential community in the Fenwood Road area.

We look forward to seeing the full shadow and wind studies (and proposed mitigation, where warranted) that the proponents plan to include in the DPIR to illustrate the extent of impacts, if any, to the parklands, the residential community, the BWH's Shapiro Center area including Binney/Francis, and pedestrians who will be patrons of these adjacent uses as well as of the new complex of buildings.

It also would be useful to know the extent to which both program and financial requirements for MMHC, BWH and RTH are driving the proposed scale, heights and densities of the complex.



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Transportation/Access

We are pleased that the draft filings have referenced adding a short right-turn lane on the Riverway for vehicles turning north onto Brookline Avenue. MASCO studied and proposed this improvement over 15 years ago to be part of a future MMHC site redevelopment as a significant measure to improve public safety (pedestrian, cyclist, ambulance, auto accidents) and reduce air pollution related to the then over half-mile delays there. The State, in its developer selection process, asked developers to consider this improvement in their proposals; the City adopted this improvement in the Interim Guidelines for access improvements, which the BRA and BTM follow in the LMA. Due to delays in site redevelopment, years later in 2009, this pernicious situation remains. We recognize the special significance of the parks and parkways and respectfully suggest that the redevelopment of the MMHC site represents a unique opportunity to create both a significant open space that both visually relates to the Emerald Necklace, creates a gateway to the city, and at the same time enhances the currently degraded environment at this location by reducing air emissions related to congestion, improving pedestrian and bicycle access, and public safety. (See above comments re: architecture, open space, etc.).

We recognize that a plan of this significance would require some of the best designers and a community participation process involving many stakeholders. Such processes take time, which is at odds with the proponents' timelines for approvals for phase I short term plans, which we have no interest in delaying. It would be useful for the DPIR to address how planning for a Gateway and access improvements at the Riverway Gateway (Riverway/Brookline/site driveway) could occur in relation to design, site and mitigation measure planning for the 7-10 year projects in a way that does not delay the Binney Street Building and Partial Hospital/Inn projects and demolition of existing structures. MASCO reserved \$133,000 in 1996 to defray capital costs of improvements at this location. We remain willing to contribute this to the implementation of a significant Gateway Open Space and Traffic Improvement at this location.

Environment/Energy/Sustainability

We congratulate the proponents on their continued leadership in proposing projects that will seek LEED certification. As a repository of area-wide data MASCO can help provide data to support your certification process particularly in the areas of Sustainable Sites: SS1 (Site Selection), SS2 (Development Density and Community Connectivity), SS4.1 (Alternative Transportation-Public Transportation Access), SS4.2 (Alternative Transportation-Bicycle Storage); and may potentially be helpful regarding an LMA database for Materials Resource:



4.1/4.1 (Recycled Content), 5.1/5.2 (Regional Materials), 6 (Rapidly Renewables), and 7 (Certified Wood).

It would also be useful for the DPIR to contain additional information on alternative energy, energy conservation and supply options that will be considered for the buildings. Finally, the documents note that the new designs will comply with the City of Boston's sustainability requirements for storm water; to the extent that these may be further modified by pending State DEP regulations these changes might also be addressed in the DPIR.

Demand Management/Alternative Transportation

We are pleased to see BWH's continued leadership and commitment to TDM measures including the full range of CommuteWorks services. For example, we note BWH's 2009 Bike to Work Week participation increased by 100%, representing the highest number of registrants at any institution; and their T-pass programs and participation in off-site parking and shuttle services to reduce overall parking demand. We are pleased that RTH will further promote TDM through their management company at the new residential building and request the MMHC pursue, at this site, similar strategies to those adopted by the proponents. MASCO will provide additional information to the proponents about Commuter Rail and shuttle options currently available to the site from JFK/UMass, Ruggles and Yawkey Stations as well as ridesharing, zip car and carpool and vanpool incentives; for inclusion in the DPIR, under separate cover. We stand ready to assist the proponents in planning for these services as well as others, such as on-site bicycle parking.

Parking/Drop-Off/Loading

It would be helpful for the DPIR to review the relationship between the Brigham Green Project parking garage and the proposed new buildings. The Brigham Green was approved in the last BWH master plan; the PNF/IMPNF states it will be implemented prior to construction of the longer term projects contained in the MMHC Development Plan. The public could better understand the Brigham Green garage's role in absorbing parking demands generated by existing hospital operations, the proposed future uses in the MMHC PNF/IMPNF--particularly in the Binney Street Building during its occupancy by MMHC and later by the hospital, and the Brigham and Women's Building; and its expected beneficial outcomes in reducing existing traffic congestion on Francis Street, related to both general traffic and valet activities that currently cross through to and from the LMA and the residential neighborhood.

A more detailed breakdown would be helpful, by use and including valet, on space demands for MMHC, in the short-term at the new Binney Street Building at ServiceCenter and in the proposed long-term BWH Building; spaces for the



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hospital's and MMHC's uses when the BWH Building is operational; and spaces for the residential uses in the proposed RTH Building, which we understand are contemplated to be accommodated by the existing Mission Park Garage. This would provide a clearer overall picture of current, phase one and full build parking demand. On the supply side, an overall picture would be helpful of how existing parking on the hospital's campus and at Mission Park are used by the hospital and by RTH, how the future supply adequately meets demand so as to not exacerbate impacts on residential parking areas or elsewhere in the LMA, and what other parking siting options were considered in the planning for the proposed future uses. The demand and supply information will provide a better understanding to the public of the plan's traffic impacts and proposed mitigation strategies.

Curb-side drop-off needs should be identified for each of the proposed buildings, particularly those where parking supply is proposed to be in a different building, such as that proposed for the RTH Building. Appropriately planned drop-off areas serve to reduce traffic congestion and ameliorate parking and traffic enforcement needs.

Loading needs are intended to be accommodated at the Residential Building, the BWH Building and the Partial Hospital/Fenwood Inn. We have found it helpful when proponents include more detail in their DPIRs on the design of loading docks; anticipated truck activities by type of truck and time of day; and turning templates that illustrate how truck movements can be accommodated off-street, either partially or fully. These help identify whether design or mitigation strategies need to be pursued so as to lessen impacts on neighboring streets. We are supportive of relocating MMHC to the LMA at the earliest possible time, through the realization of the proponents' phased plans to create new space that benefits MMHC, housing for the community, and medical and research space for the hospital. Thank you for this opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read "Sarah J. Hamilton". The signature is fluid and cursive.

Sarah J. Hamilton

Vice President, Area Planning and Development

Friends of Historic Mission Hill
81 Lawn Street, Roxbury, MA. 02120

B.R.A.

2009 JUL 30 P 2: 29

Secretary Ian A. Bowles
EOEA, Attn: MEPA Office
William Gage, EOEA No. 14440
100 Cambridge Street, Suite 900
Boston MA 02114

Director John Palmieri
Attn: Sonal Gandhi, LMA project manager
Boston Redevelopment Authority
Boston City Hall
Boston, MA 02201

→ Gandhi

Re: MMHC Redevelopment, 74 Fenwood Road, Boston
EOEA # 14440

Dear Secretary Bowles and Director Palmieri,

The Friends of Historic Mission Hill are submitting comments on the above referenced ENF and IMPPNF for the same project. We think the DEIR should address the transportation and historic impacts of the project, both interim and future uses. We note that the proposed project is significantly greater than the as-of-right development. The Friends urge MEPA and the BRA to conduct a phased review of the redevelopment. The Friends believe the immediate review should focus on transportation and the historic impacts of the currently proposed uses. The Friends are concerned about signing off on the environmental review of the final project when the construction timeline is so uncertain.

The Friends of Historic Mission Hill are a resident based group involved with issues affecting the preservation of the local community; both its historic buildings and streetscapes and the quality of life experienced in our urban neighborhood. We actively participated in the public review for the state's Request for Proposal (RFP) process. Our 2002 comments are attached.

The stakeholders in the current proposal are many and the transactions complex. Brigham and Women's Hospital (BWH) will sign (after project approvals are received) a 95 yr ground lease with the Commonwealth for the Massachusetts Mental Health Center site, essentially, a permanent disposition.

The clients of the state's Dept. of Mental Health (DMH) will return to the Longwood Medical Area (LMA) but their original home at the former Boston Psychiatric Hospital will be demolished. In exchange for BWH building a 5-6-story structure on the Binney Street block next to the Chapter 121A, 1978 era Servicenter Garage/ Material Handling facility and on Vining Street, a 21,000 SF replacement inpatient bed facility (Fenwood Inn), the state will transfer the MMHC 2.39 acres to BWH. The filings describe two proposed projects on the 74 Fenwood Rd.

site, a lab/office bldg., 222 ft high/ 358,670 SF and a residential development approx. 198, 000 SF/15-16 stories to be built by Roxbury Tenants of Harvard (RTH). The current review will essentially give approvals for these future plans through BWH's institutional master plan process.

Allowing demolition of the National Register property for new construction that by the proponents' own admission is years away is not responsible public policy and can become a negative precedent. At the July 20 2009, MEPA site meeting, John Messervey, Director of Capital and Facility Planning for Partners, stated that a ground breaking for the contemplated BWH wet lab research space is 10 years in the future. The second proposed project for the site, the residential towers, has no financing in place; the expected timeline for a construction start is optimistically 3-5 years according to RTH's development consultant, Peter Munkenbeck at the BRA sponsored public meeting in July 2009.

The interim plan, after razing of all structures, is apparently for the site to continue as a surface parking lot AND a construction lay down area while the 2 facilities being constructed for DMH are built on Binney and Vining Streets. According to BWH's 2004 filings for the 70 Francis Street facility, the surface parking lot at the 74 Fenwood Rd site holds 212 vehicles, in the current submission the lot is described as 163 spaces. The DEIR needs to clarify the amount of parking proposed as an interim use.

The Binney Street parcel, approx. 12,000 SF served as the staging area for BWH's 350,000 SF Shapiro Cardiovascular Center at 70 Francis Street. Two trailers and construction related material remain on the lot a year after the facility opened. The MMHC property is 113,769 SF. Holding more than 2 acres of land adjacent to the landmarked Olmsted Park System for construction equipment and surface parking for a period of at least 4 -10 years is not appropriate stewardship for this historic property.

The 2003 Memorandum of Agreement negotiated with the Mass. Historical Commission focused on the RFP process. However, in *Stipulation IV, Exempted Activities*, MHC apparently signed off on their mandated role to review new construction "in any environmental review process" if that construction was determined to be compatible with the character defining attributes of the existing structures. The DEIR should clarify whether or not MHC has decided that the proposed project meets these criteria.

The Friends of Historic Mission Hill's concerns include the interim uses, as well as, the future plans. MHC and the Boston Landmark Commission (BLC) function to protect historically significant property from negative impacts and encroachment. The Riverway, part of Olmsted's Park System, a Boston City Landmark immediately adjacent to the MMHC site, will be affected by the proposed tall buildings. Traffic, views, shadows, storm water runoff are factors that environmental permitting agencies should be considering. Will there be follow up on zoning requirements for screening and buffering of parking lots, runoff from impervious surfaces, care and protection for the 100 yr. oak trees that are supposed to be preserved?

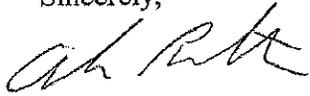
The Riverway is protected through the Greenbelt Protection Overlay District and by the city's own Municipal Code 7-4.10-12. However, interestingly enough, Neville House at 10 Vining Street, 13 stories (uses shared between BWH and RTH), stands as an obvious exception. The 1970s urban redevelopment in this area (MATEP, Servicenter etc) was not favorable for quality of life improvements for local residents. Decades later, we are struggling for improved air

quality, pedestrian friendly sidewalks & streets, and safe access to historic parks. The potential addition of an exclusive right hand turn lane to the Riverway and the state's acquiescence is alarming. Improvements to the Vining Street driveway/ private way should be a relief valve for congestion; however, improved crosswalks are also required. Trucks and buses are forbidden on the Riverway like the other parkways in the Emerald Necklace, even though enforcing this has been hit or miss in the LMA/Fenway area. The state's Department of Conservation and Recreation will need to be vigilant to protect Olmsted's visionary creation from incompatible development, as well as, wayward trucks and buses. The impacts and remedies for these concerns should be analyzed in the DEIR

The states' RFP process did not prioritize historic preservation. The Friends wonder if wholesale demolition is necessary when development is years away and the economic under pinning of the project is not in place? There are 4 structures on site, could the 1912 main building, at least, be mothballed until a later time?

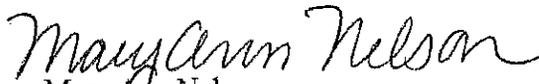
Our concern is fueled not only by the extended and vague schedule for the proposed projects, but also, the obvious slow down in the economy and the delayed starts to other previously approved BWH projects. And, of course, the residential development is dependent on public financing for which we note there is extensive competition, even within the Mission Hill community. Curiously, previous statements from BWH call in question the hospital's own intentions. Specifically, there was an assertion that BWH is not interested in this site for clinical or research space [See DMH's 2002 *Final Project Proposal to the Asset Management Board*, Arthur Mombourquette letter]. The environmental review filings for the 70 Francis Street project also stated a commitment to no new employee parking. The building described in the ENF and IMPPNF will have a new 406-car garage. Increasing the parking supply in the LMA inevitably increases the amount of traffic. In 2002 the city's own Environment Department wrote of their concern that the LMA roadways and adjacent neighborhoods cannot absorb additional congestion. Currently, there is a lease arrangement with DCAM for the surface lot at 74 Fenwood, primarily for valet parking. It would not be surprising in fact to see a notice of project change substituting a major parking garage for one or more of the future Fenwood Road projects.

Sincerely,



Alison Pultinas

For Friends of Historic Mission Hill



Mary Ann Nelson

cc: Ellen Lipsey, BLC
State Rep. Jeffrey Sanchez
State Senator Sonia Chang Diaz
CC President Michael Ross
Carol Meeker, DCAM
Brona Simon, MHC
Don Eunson, Emerald Necklace Conservancy

FRIENDS OF HISTORIC MISSION HILL

81 Lawn Street, Roxbury, Ma. 02120

November 5, 2002

H. Peter Norstrand, Deputy Commissioner for Real Estate Services
DCAM
One Ashburton Place, 15th floor
Boston, MA. 02108

Dear Commissioner Norstrand:

The following comments on the *Final Project Proposal to the Asset Management Board-Redevelopment of the Massachusetts Mental Health Center (MMHC) Site* are submitted from the Friends of Historic Mission Hill (FHMH), a resident –based group actively concerned with issues affecting the preservation of our neighborhood’s historic buildings, streetscapes, and the quality of life experienced by the residents of our urban neighborhood. Our evaluation of the Commonwealth’s plans has several strands, however the overall theme is very simple- this proposal deserves significant citizen participation. Creating a collaborative framework should be the goal of the Asset Management Board’s review. In order to build something actually needed and wanted, it would be advisable to slow the fast track process this project seems to be on. One of the speakers at the Oct. 8 public hearing strongly and eloquently requested more time for greater neighborhood input. The explosion of development in the Longwood Medical Area indicates the wisdom of some reconsideration about further new construction. In our experience, when the neighborhood (residents and institutions alike) has the opportunity to brainstorm real solutions, the final project benefits tremendously.

Our specific comments will discuss the following- the preservation of the original 1912 facility, the relationship of the site to the Riverway, one of Olmsted’s most well known 19th century parkways, and the adequacy of the proposed 70,000 Sq Ft MMHC DMH clinic to be sited within a much larger new real estate development .

The original 1912 four-story brick Gothic Revival structure should be preserved. The building presents a handsome façade towards Fenwood Road, and holds much psychiatric history. New construction doesn’t have the grandeur that can be achieved with an older rehabbed building. Historic preservation has a significant role as a civic- building influence and perhaps even more dramatically in the environment for mental health programs. The main building represents to current clients the security and familiarity needed for their well-being and medical treatment. Retaining this part of the complex would provide critical therapeutic continuity for those who so desperately need it. There is a realistic concern that DMH’s current plans will relegate MMHC clients to a “back door” metaphorically as well as physically. The historic grand central entrance and the luxurious lobby have an emotional significance; literally evoking the connection to the

building's significant history and also the open door policy and the interactive atmosphere of the MMHC environment.

Of the 1912 structure, the most prominent features consist of the central staircase and lobby on the first floor, the library on the second floor and assembly hall above it on the third. These large and well-appointed spaces appear to us as worthy of preservation. The remainder of the 1912 building, changed greatly over the decades, would lend itself to an extensive rehab and renovation. The original cast iron fence and the perimeter red oak trees along Fenwood Road are also character-defining elements that should be preserved.

The 1912 building has been enlarged over the years obscuring the original complementary relationship with the historic Riverway. Removing the additions –the blank 5th floor attic story, the 1957 Therapeutic wing near Brookline Avenue and the tacked on Vining Street appendage would actually reduce the interior space to a size comparable to DMH's required 70,000 Sq Ft. The remainder of the complex- the power plant building and the 1954 Research facility would give way for new construction.

In order to ensure continuity in the immediate area for patients and staff during construction, the Fenwood Inn/ Day Hospital and therapists' offices could perhaps be temporarily relocated to 20 Vining Street, the former Nurses' Residence. The identity of the location would thus be preserved for the MMHC clients, with an imminent return to the building they regard as home.

With therapeutic services retained in the historic MMHC, new construction on the rest of the nearly three-acre site could thus be designed to accommodate uses as determined by community input. Housing, office and/or research space may be the obvious choices, but may not be the best ones. Research space already projected by the Joslin Diabetes Center, Brigham & Women's Hospital, the Blackfan Research Center and the Beth Israel/ Deaconess in addition to the facilities under construction (Emmanuel's Endowment Campus, Harvard Medical School and Children's Hospital) will probably render further research space unnecessary. A need for housing remains constant, particularly for affordable. Unfortunately the Commonwealth's strategy is creating the financial incentive for a project that will be much denser than the neighborhood desires.

There is legitimate concern that the site's relationship to adjacent streets has been poorly defined and redevelopment represents an opportunity to improve "the edges". Historically Vining Street intersected with the Riverway. A curb cut still exists; now it appears to lead to a sprawling surface parking lot, however it also connects to the public way providing an unofficial shortcut to the LMA. (According to Boston's Public Works Dept., "Vining ends somewhere past Fenwood"). Instead of widening the Riverway, a less intrusive plan would be to officially reopen the Riverway/Vining intersection for one way northbound access. The impact of area traffic has been exacerbated over the years by the closure of local interior streets; redefining the lost intersection would improve the edges of the MMHC site immeasurably.

A major threat to the Olmsted park system has been inappropriate use of adjacent land including large surface parking lots and free standing garages. Because the park boundaries are so narrow, the visual impact of nearby buildings is correspondingly increased. The City of Boston's ordinances governing development within 100 feet of the Riverway restrict the height of potential buildings to 70 feet and also require a 20 foot setback. Can these requirements be met when the state process is effectively demanding 70,000 Sq Ft of free space from the chosen development team?

Realistically the question must also be asked as to whether the specified 70,000 is actually adequate for the desired facilities for the MMHC clients, the existing Harvard training program and the research needs. Will there be a gift shop, client cafeteria, coffee shop or a place to shoot hoops or play volleyball, activities that have all been provided to clients in the past? The courtyard gardens that provide fresh air and sunlight to all four floors also are spaces where patients and staff can mingle. It is not likely that the "living room" lobby with the wainscoting, marble floors and fireplaces will be duplicated if the old one is demolished.

To conclude, we recognize the need for updated facilities for the Mass. Mental Health Center. We are convinced however, that a first-class renovation of the original structure to include preservation of the heart of the 1912 building - its lobby and rooms directly above- would be of greatest value to the MMHC in its mission to serve the individuals who sorely need its services. A commitment to preserve/rehab the existing original building would also assure the neighborhood of the absolute likelihood that MMHC would remain in our area.

And secondly, we respectfully request an extension of the RFP process, to consider further the acceptable possibilities for the site. The prospect of a greatly improved final project justifies such a request.

Yours truly,

Alison Pultinas and Lois Regestein
Friends of Historic Mission Hill

Cc: Ann Lattinville/MHC
City Councilor Michael Ross
State Representative Kevin Fitzgerald
Owen Donnelly/BRA
Ellen Lipsey/BLC
Betsy Shure Gross/ EOE
Julia O'Brien/MDC
Margaret Dyson/ BP

Appendix B

Milestones

APPENDIX B – BRIGHAM AND WOMEN’S HOSPITAL MILESTONES

Beyond BWH’s long tradition of serving the medical needs of the community, BWH, including its predecessor hospitals, has been the home of some of the world’s most exciting medical advances including:

- ◆ In 1847, at the Boston Lying-In Hospital, anesthesia for childbirth is administered for the first time at a U.S. hospital;
- ◆ In 1883, also at the Boston Lying-In Hospital, doctors first use antiseptic techniques to ward off childbirth infection, dramatically reducing the maternal/child mortality rate;
- ◆ In 1926, Drs. William Murphy, George Whipple, and George Minot, discover liver extracts as the cure for pernicious anemia at the Peter Bent Brigham Hospital; all three physicians share in the 1934 Nobel Prize for the discovery;
- ◆ In 1929, the first polio victim is saved using the newly developed Drinker Respirator (iron lung) at the Peter Bent Brigham Hospital;
- ◆ In 1944, researchers at the Free Hospital for Women fertilize a human egg in a test tube for the first time;
- ◆ In 1949, Dr. Carl Walter, of the Peter Bent Brigham Hospital, invents and perfects the plastic bag used to collect, store, and transfuse blood;
- ◆ In 1954, the first successful human organ transplant, a kidney transplant from one identical twin to another, occurred at Peter Bent Brigham; Dr. Joseph Murray won the 1990 Nobel Prize in Medicine for this landmark achievement;
- ◆ In 1962, direct electric current is first used to restore rhythm to a heart that has stopped at the Peter Bent Brigham Hospital;
- ◆ In 1973, non-invasive fetal heart monitoring is developed at the Boston Hospital for Women, enabling physicians and nurses to better and more safely predict when the fetus is in distress during labor;
- ◆ In 1984, the first heart transplant in New England is performed at BWH;
- ◆ In 1990, the first lung transplant in Massachusetts and the first double lung transplant in New England take place at BWH;
- ◆ In 1992, the first heart-lung transplant in Massachusetts is performed at BWH;
- ◆ In 1994, BWH unveiled the world’s first Intra-Operative Magnetic Resonance Imaging (MRI) System enabling surgeons to take images of the body’s interior during surgery, and allowing the hospital to treat patients with brain tumors that were previously considered inoperable;

- ◆ In 1995, BWH surgeons perform the first triple transplant in New England – the simultaneous transplantation of two lungs and a heart from one donor;
- ◆ In 1996, BWH became one of only 10 hospitals in the nation to perform a “minimally invasive” aortic valve repair through a three-inch incision instead of through open-chest surgery;
- ◆ In 2000, BWH surgeons were among the first in the nation to perform both general and cardiac surgery using a computer-assisted robot;

Researchers at BWH reported that an inexpensive blood test could detect minute elevations in C-reactive protein, thus identifying people at risk for heart attacks, even when they lack obvious risk factors such as high cholesterol;

BWH surgeons perform the nation’s first quadruple transplant, the simultaneous transplantation of one heart, two lungs and one kidney from the same donor; and,

BWH celebrated the 25th anniversary of the BWH-based Nurses Health Study, which enrolled 122,000 women in America’s first study of women’s health. This landmark study has resulted in significant findings about links between birth control pills and cancer, and associations between lifestyle factors and disease.

- ◆ In 2005, BWH brings health care to those who need it most in Boston and throughout the world. Gary Gottlieb, MD, MBA, president, co-chaired with Mayor Thomas Menino the City's Task Force on Racial and Ethnic Disparities, which released a blueprint to reduce those very real disparities in Boston. BWH's Department of Emergency Medicine sent physicians and nurses to the Gulf of Mexico region following Hurricane Katrina.

BWH published significant findings from the renowned TIMI (Thrombolysis in Myocardial Infarction) trials. One study found that statin drugs' ability to combat levels of C-reactive protein in one's blood is just as important as the drugs' role in reducing cholesterol. Also, BWH cardiologists found that the use of a low molecular weight heparin significantly reduced the risk of repeat heart attack or death.

A prestigious grant of \$11 million was awarded to BWH and Dana Farber/Harvard Cancer Center for a broad program with the mission of lowering ovarian cancer deaths. The grant, known as SPORE (Specialized Project of Research Excellence), focused on clinical and bench research related to prevention, early detection and treatment of ovarian cancer.

BWH researchers are the first to prove that measuring C-reactive protein (CRP) levels is as important as measuring cholesterol at predicting heart attack.

BWH is the only hospital out of more than 1,200 facilities nationwide that gained perfect scores on the Leapfrog's Group's online hospital ranking system of safety and overall value for consumers. The Leapfrog Group, a consortium of more than 170 public and private

health care payers, providers, and purchasers issues rankings based on quality and safety standards.

In recognition of its landmark electronic Medication Administration Record (eMAR) and barcoding system, BWH was a recipient of the first Betsy Lehman Patient Safety Recognition Award for organizational excellence. The award honors Betsy Lehman, a Boston Globe health columnist who died in 1994 when she was accidentally given the wrong dosage of chemotherapy.

The National Institutes of Health (NIH) granted the BWH Surgical Planning Laboratory a five-year, \$19.2 million grant to lead the National Alliance for Medical Image Computing. The grant is being used for the development of software to extract valuable disease information from imaging data, allowing the power of modern imaging machines to characterize diseases and work together in examining new treatment methods.

BWH marked its 500th heart transplant, the most for any New England hospital. This historic operation adds BWH to an exclusive list of hospitals nationwide to reach this mark, according to the United Network of Organ Sharing (UNOS).

- ◆ In 2006, Custom-designed nanoparticles carrying doses of chemotherapy that can specifically target cancer cells have been created by BWH researchers. These nanoparticles are absorbed by the cancer cell, delivering a lethal dose of chemotherapy and leaving healthy cells unscathed. This therapy, which has been tested and proven successful in mice, in theory can be applied to almost any disease by re-engineering the nanoparticles' properties to carry different drugs and target different cells.

A laser eye scanner has been developed at BWH that is 100 percent accurate in detecting Alzheimer's disease in mice. The laser scans the eye for the protein beta amyloid, which forms on the edge of the eye, potentially decades before lesions form on the brain.

The Dana-Farber/Brigham and Women's Cancer Center (DF/BWCC) recently conducted its first radioembolization of the liver - a treatment that offers hope to patients with limited options. Certain tumors that have been unresponsive to chemotherapy have responded to this treatment, which delivers radiation directly to liver tumors and spares healthy tissue, improving survival and the quality of life for patients.

The National Committee for Quality Health Care (NCQHC), a non-profit organization comprised of industry leaders who share a common interest in quality as the foundation of health care delivery, awarded BWH the 2006 National Quality Health Care Award.

BWH became the first hospital in New England and the second hospital in the nation to implant in a patient the Impella Recover 2.5 - the world's smallest ventricular assist device (VAD) - during a high-risk angioplasty. This procedure benefits those angioplasty patients with the most compromised heart function.

BWH launches, in collaboration with the NIH and Amgen, the first Women's Genome Health Study to find the genetic causes for the development of heart disease, stroke, cancer, and other common health disorders.

- ◆ In 2007, BWH opens the city of Boston's first Asian Renal Clinic to better serve the approximately 200,000 Asians living in the Boston area.

Using data collected from over 24,000 initially healthy American women, researchers from BWH have devised a new Web-based formula called the Reynolds Risk Score that for the first time more accurately predicts risk of heart attack or stroke among women.

A large-scale genomic study has uncovered new genetic variations associated with multiple sclerosis (MS), findings that suggest a possible link between MS and other autoimmune diseases.

BWH receives approval to perform partial facial transplants in selected previous transplant patients, making the hospital just the second in the country able to do so.

BWH has been named a 2007 Leapfrog Top Hospital for the third year in a row for making significant strides in quality and patient safety. Only forty-one hospitals nation-wide received this distinction, which is based on a rating system that provides an assessment of quality and safety.

BWH is one of only two academic medical centers nationally to be named to the University HealthSystem Consortium (UHC) top five, three years in a row.

For the third year in a row BWH has been nationally recognized as a top-ranked leader in demonstrating excellence in delivering high quality care by the UHC.

- ◆ In 2008 BWH is the first in the nation to perform transoral obesity surgery, a weight-loss procedure without an incision, giving patients an alternative to traditional obesity surgery, one with a faster and less painful recovery time and a reduced risk for infections and other complications.

Using new DNA sequencing technology, researchers for the first time, identified the unique genetic mutations of a cancerous tumor of an individual patient. The researchers obtained the genetic sequences of all of the expressed genes in tumors from patients with mesothelioma. This approach could become a new standard for discovery of tumor mutations that underlie cancer.

In the landmark JUPITER trial, researchers found a way to cut in half the risk of heart attack, stroke and cardiovascular death in men and women who had low levels of cholesterol but were still at high risk for vascular disease due to increased levels of inflammation or high sensitivity C-reactive protein.

BWH researchers discovered a strategy that targets cancer stem cells for destruction, successfully halting one of the deadliest cancers – melanoma. The findings added credence to the hypothesis that stem cells drive cancer progression and lay the groundwork for a possible treatment, showing that targeting stem cells may be a viable strategy in cancer.

The first patients were welcomed to the Carl J. and Ruth Shapiro Cardiovascular Center, as the Watkins Cardiovascular Clinic, which now combines Cardiovascular Medicine, Cardiac Surgery and Vascular Surgery in one location, officially opened in June. The inpatient move took place in July.

The BWH Osher Clinical Center was officially dedicated, offering patients access to a full array of complementary and integrative care from a team of credentialed acupuncturists, chiropractors and massage therapists along with care providers from Medicine, Psychiatry, Nutrition, Physical Therapy and consultations from orthopedics, rheumatology and other conventional specialties.

A new kidney cancer clinic was opened by DF/BWCC to provide multidisciplinary care, including clinical trials and kidney-sparing surgeries for a difficult cancer that in many cases is not diagnosed until it has spread.

- ◆ In 2009, a 35-member surgical team at BWH performed a partial face transplant on April 9, the second such procedure to be performed in the U.S. The team included plastic and ear, nose and throat (ENT) surgeons, nurses, anesthesiologists, physician assistants, residents and technicians who worked for 17 hours to replace the mid-face area of the patient including the nose, hard palate, upper lip, facial skin, muscles of facial animation and the nerves that power them and provide sensation.

BWH became the second hospital in the country to be recognized as having a Comprehensive Academic Sleep Program of Distinction by the American Academy of Sleep Medicine (AASM), which sets standards and promotes excellence in sleep medicine health care, education and research.

BWH and Massachusetts General Hospital opened the Brigham and Women's/Mass General Health Care Center at Patriot Place. The state-of-the-art facility offers convenient primary care and other medical and surgical specialty care to BWH and MGH patients in that area of the state.

BWH performed its first case in the new Hybrid OR in the Carl J. and Ruth Shapiro Cardiovascular Center. Among the first of its kind in the country, the Hybrid OR enables staff to perform 3D angiography, CT-like imaging and intravascular ultrasound in an operating room, allowing for patients to have imaging and treatment in one setting, where multiple trips were required in the past.

Appendix C

AG Report

BRIGHAM AND WOMEN'S HOSPITAL

Introduction

Brigham and Women's Hospital (BWH) has a long-standing commitment to improving the health status of Boston residents, with a focus on Boston neighborhoods with disproportionately poor health and social indicators, and documented need for comprehensive health and social services. In addition to being the regional leader in preeminent women's health services, BWH is also one of the nation's leading transplant centers, performing heart, lung, kidney, and heart-lung transplant surgery, as well as, bone marrow transplantation. BWH is nationally recognized for clinical excellence in cardiology and cardiovascular disease, immunology, arthritis and rheumatic disorders, joint replacement, and cancer care through the Dana-Farber/Brigham and Women's Cancer Center.

Locally, BWH works in collaboration with many community organizations and government agencies to identify and address social determinants of health and to mobilize community resources to improve health status. BWH and its licensed and affiliated health centers provide primary and specialty ambulatory services to culturally diverse groups of people. Through the BWH Center for Community Health and Health Equity, BWH and its health center partners provide a broad array of community service and community health programs, which are designed to have a measurable, positive effect on the health status of underserved populations.

Mission Statement

The BWH Board of Trustees approved the following community benefit mission statement:

Brigham and Women's Hospital (BWH) is committed to serving the health care needs of persons from diverse communities. The hospital, however, makes a unique commitment to the neighboring residents of Jamaica Plain and Mission Hill, who have some of the most pressing health problems in the state. The hospital, along with its two licensed community health centers, is committed to developing integrated care networks to provide and assure appropriate access to high quality, cost-effective primary care to members of these communities regardless of their insurance status. The hospital also commits to meeting the needs of low-income pregnant women and their families from the communities of Roxbury and Dorchester.

In order to address the health needs of its target communities, the hospital must look beyond its walls and seek guidance from the community to implement programs that recognize and address the relationships between health and social problems, including economic and educational issues. The hospital is committed to collaborating with community groups and organizations to

develop comprehensive programs that respond to the needs of the communities, as identified by the communities themselves, and as suggested by public health and other data. The hospital seeks to improve the health status of residents of the communities by offering health services, continuing and expanding innovative community and school-based programs, and by serving as a resource to the community as a liaison to health careers education and as a possible employer of community residents.

Internal Structure of Community Benefit Programs

The Center for Community Health and Health Equity (CCHHE) at Brigham and Women's Hospital serves as the coordinating department for community health programs and acts as a liaison for community-based organizations and the hospital. First established in 1991, as the Center for Perinatal and Family Health, the CCHHE expanded its focus beyond the needs of pregnant women and changed its name to the Office for Women, Family and Community Programs in 1997. In 2007, the focus expanded once again to explicitly encompass programs that address health disparities, and the name was consequently changed to the Center for Community Health and Health Equity. In FY2008, Health Equity continues to be the key unifying focus of the Center's work and community partnerships.

The mission of the CCHHE is to advance systems of care and community health strategies to eliminate health disparities and elevate the health status of the communities served by BWH. The CCHHE collaborates with hospital departments, including clinical and research areas, and works in partnership with external organizations and community-based groups in addressing the social determinants of individual and community health, including efforts to increase access to equitable health care for all patients throughout the Brigham and Women's /Faulkner Hospitals (BW/F) regardless of ability to pay, and to create an institutional environment that is inclusive and reflects the racial and ethnic identities of communities served.

BWH community health programs focus on improving health equity by addressing the social factors that influence health, such as:

- Fostering social and family support systems
- Enhancing educational and career opportunities
- Improving knowledge of healthy behaviors
- Working with individuals who are victims of domestic violence
- Addressing health care disparities in infant mortality, cardiovascular disease, and cancer
- Providing comprehensive care for women
- Mitigating asthma triggers in schools and in homes
- Through the BWH Division of Social Medicine and Health Inequalities, improving outcomes for underserved individuals with HIV

The hospital, its health centers, and the CCHHE are dedicated to working with community residents and organizations to meet the needs of racially and ethnically diverse and underserved populations, through programs intended to break down barriers to accessing quality, affordable health care and social services. To ensure progress in meeting established goals, the CCHHE develops evaluation plans and regularly collects data on its community health programs. Those data are used to determine program effectiveness and to inform program planning and decision-making. They enable the CCHHE to make accurate assessments of strengths and accomplishments, and to identify opportunities to enhance existing services. Financial support for the CCHHE and its programs comes from many sources, including BWH and Partners, foundation grants, individual donors, and government agencies.

Health Equity Programs

The CCHHE Health Equity programs promote the Brigham and Women's Hospital mission to deliver high quality and equitable care while addressing the social determinants of individual and community health. These programs stem from collaboration with BWH physician, nursing, and administrative leadership to develop targeted strategies for improving care and health outcomes for diverse patient populations in primary care, subspecialties, and the BWH's five centers of excellence in cardiovascular care, cancer treatment, neurosciences, orthopedics and arthritis, and Women's Health.

In 2008, BWH formed the Health Equity Oversight Committee, which comprises BWH physician, administrative, and Board of Trustees leadership, and counsels Brigham and Women's/Faulkner Hospitals and the Center for Community Health and Health Equity toward achievement of the goal of developing multidisciplinary, collaborative approaches to promoting health equity through the elimination of racial and ethnic disparities in health outcomes. The Committee provides strategic direction and oversight of the planning and implementation of the BW/F's efforts to eliminate health disparities through the development of comprehensive interventions that combine research, education and teaching, community outreach and information dissemination.

Health Equity Oversight Committee Charge

- Evaluate the strategy of the BW/F to address the elimination of health care disparities for patients and communities in the Hospital's target service area and ensure integration with the BW/F clinical priorities
- Provide a forum for review and root cause analysis of events or actions affecting diverse patient populations and reviews the BW/F's efforts to ensure the delivery of culturally competent care to all patients
- Evaluate institutional, department and programmatic priorities focused on the provision of culturally competent care
- Review performance relative to the strategic plan and reports progress to the Boards of Trustees

The Brigham and Women's/Faulkner Hospitals use the framework of the Balanced Scorecard to measure organizational effectiveness. In January 2007, the Brigham began collecting data on the race/ethnicity and socioeconomic status of patients, expanding Balanced Scorecard data by these important elements. The CCHHE assists in monitoring Balanced Scorecard measures to develop performance improvement efforts to eliminate observed disparities. The CCHHE also works in collaboration with community-based organizations, community health centers, and government agencies to identify and address barriers to access, and to mobilize community resources to improve health status. The CCHHE is committed to advancing an evidenced-based approach to improving individual and community health status.

The goals of the Health Equity programs are:

- To provide patients, especially those at risk for disparities, access to the highest quality care regardless of ability to pay
- To provide equitable health care to all patients throughout the BW/F system regardless of ability to pay
- To create an institutional environment that is inclusive and reflects the racial and ethnic identities of the communities served
- To elevate the community health agenda as a key priority of BW/F clinical care, teaching, and research mission

City and Statewide Programs

Efforts to Improve the Health of Women

BWH is the state's largest birthing hospital, and plays a unique role in developing and implementing innovative women's health programs. Women's health is viewed as more than a service of primary, obstetric, and chronic care for women's reproductive and other problems. It is also seen as a way to ensure healthy families and thus healthy communities.

Women from low-income neighborhoods who are disadvantaged by their educational status, language, employment, economic status, immigrant status, race, or other personal characteristics face significant barriers to maintaining their health and that of their families. Promoting programs that improve the health of women across the lifespan through health, social support, educational opportunities, and employment reduces these barriers and helps women to care for themselves and their families.

The overall vision for BWH's community health initiatives is driven by a desire to equalize health status and opportunity among underserved populations including women and their families. Concerned about alarming disparities in health among Boston's core urban population, the Center for Community Health and Health Equity's community health initiatives have focused on these populations. Higher infant mortality and low birth weight rates for Black infants, lower rates of adequate prenatal care for Black and Latina women, higher rates of breast and cervical cancer among Black women, higher percentages of Black and Latina adolescents who become mothers, and the impact these

health concerns have on the health of families and children are among the health disparities driving the CCHHE's community benefit focus.

Perinatal Case Manager Program

Established in 1991 as a response to the high infant mortality and low birth weight rates in certain Boston neighborhoods, the Perinatal Case Manager Program (PCMP) seeks to prevent infant deaths and poor birth outcomes by addressing the social and medical needs of pregnant women. The CCHHE provides technical assistance and training for case managers at each of six of the hospital's licensed or affiliated health centers: Brookside Community Health Center, Martha Eliot Health Center, Mattapan Community Health Center, Southern Jamaica Plain Health Center, South End Community Health Center, and Whittier Street Health Center.

Program Components. The case managers provide a variety of services to pregnant women, including:

- Assessment of patients' needs
- Supportive referrals to appropriate social services
- Coordination of patient care with other health center and hospital providers
- Assistance in overcoming barriers to accessing health care and social services
- Education about the need for preventive care and healthy behaviors
- Financial assistance to help patients pay for essential items such as rent, utilities, groceries, layettes, and cribs

Continuing the partnership with Isis Maternity, the PCMP provided childbirth education classes at Southern Jamaica Plain Health Center and the South End Community Health Center. The classes were offered at each health center every other month in English and Spanish, based upon patient attendance. These classes were expanded from a two session class to a six week childbirth preparation series beginning in the late third trimester. The course provided information on nutrition, infant feeding, labor, delivery and postpartum care of the mother and infant. Future plans include expansion of current patient education classes to additional health centers.

To address the impact that lack of transportation can have on the ability of pregnant patients to access adequate prenatal care, CCHHE has developed the Perinatal Transportation Assistance Program (P-TAP). P-TAP provides cost-effective and reliable transportation to pregnant and postpartum women to assist them in getting to and from their perinatal appointments by providing access to MBTA Charlie Cards and/or taxi vouchers to eligible patients. In addition to the six health centers served by the PCMP, four additional health centers affiliated with Brigham and Women's Hospital have access to this resource. Codman Square Health Center, Dorchester House Multi-Service Center, Neponset Health Center, and Uphams Corner Health Centers have formed new relationships with the CCHHE which will provide additional resources to their patients.

During FY2009, the PCMP will undergo its most comprehensive evaluation in over a decade. The evaluation, taking place over several phases, will consist of staff surveys,

key informant interviews, chart review and client focus groups. The Phase I goals of the evaluation include:

- Define and clarify the scope of the Perinatal Case Management Program
- Determine the roles of the Perinatal Case Managers at each of the six health centers
- Assess the accessibility and availability of resources, both internal and external, to case managers to meet the complex needs of PCMP clients

Patient Demographics. During FY2008, the PCMP provided services to 1,172 patients at the six participating health centers. Forty-nine percent of the patients had more than one visit with the case managers. The average number of case manager visits per patient was three. Sixty-seven percent of the patients were newly referred to the PCMP. Eighty-six percent of the patients visited the case managers at the health centers, and two percent of PCMP clients received home visits from the case managers. The majority (67 percent) of patients were Latina, with 20 percent Black, four percent White, three percent Haitian, three percent other, and two percent race/ethnicity not recorded. Forty-nine percent of the patients had MassHealth as their insurance, while the remaining insurers for clients were Neighborhood Health Plan and Healthy Start.

Infant Car Seat Program. The Perinatal Case Manager Program offers an Infant Car Seat program to ensure that any woman who delivers at Brigham and Women's Hospital and who is unable to afford an infant car seat will receive one. Eligible patients must attend a one-hour group training session, which is scheduled a minimum of two times per month, prior to receiving a car seat. Each training session covers the basics of car seat safety, selection of an appropriate seat, and local resources for proper car seat installation. Patients are asked to pay a nominal fee for the seat; however, this fee is waived if patients are unable to pay. During FY2008, 48 women attended the car seat trainings, and 47 of them received an infant car seat.

To ensure the highest standard of care, the PCMP case managers attend workshops throughout the year to stay informed about issues affecting pregnant women. In FY2008, the case managers attended the Massachusetts Law Reform Institute Basic Benefits Training Series, March of Dimes Prematurity Symposium, and the Partners in Perinatal Health Annual Conference. This year, one of the case managers participated in a ten-week Maternal Mental Health Course offered through the Infant Parent Training Institute at Jewish Family and Children's Service. This course examines the influence of maternal mental health and the impact of mental health issues on the parent child relationship. Information from the training will be shared with the other case managers with particular emphasis on incorporating this topic in future staff trainings.

Connecting Hope, Assistance, and Treatment (CHAT) Program

The Connecting Hope, Assistance, and Treatment (CHAT) program helps women with breast cancer that have insufficient income or insurance coverage to pay for necessary services related to their breast cancer diagnosis. Eligible women may receive up to \$1,200 per calendar year to help defray the cost of medication, breast prostheses, bras, wigs, compression sleeves, transportation to treatment, childcare during treatment, denture replacement (if due to bone loss resulting from chemotherapy), dressing changes

in a hospice, counseling, and other breast cancer-related expenses. Women who are residents of Massachusetts and who have an individual annual income of \$25,000 or less, or a total family annual income of \$42,000 or less are eligible for assistance.

In the absence of the CHAT program, many participating women would have to choose between paying for items related to their breast cancer treatment and paying for rent, utilities, food, and other basic necessities. Additionally, many of the women in the program travel long distances to get to their treatment in the Boston area, often relying on family and friends for transportation because they are unable to drive after surgery or chemotherapy treatment. The CHAT program provides transportation assistance to patients through cab vouchers. Many women have limited private health insurance, which may not cover, or may cover only partially, the cost of counseling. CHAT resources provide additional coverage for these services. Although the CHAT program targets low-income women, many do not qualify for MassHealth. Medications such as Tamoxifen are expensive and are often not the only medication women are taking for treatment. Additionally, some insurance companies do not cover the cost of other similar medications such as Femara or Arimidex. The CHAT program works with women to identify other sources of payment.

CHAT works closely with vendors such as Lady Grace, the Dana-Farber Friends Boutique, Brooks Pharmacy, New England Medical Fitting, and Women's Health Solutions. As a result of these collaborations, the program is able to refer women to vendors for services. In return, vendors distribute information about the program through newsletters and by displaying applications and a program description at their sites. CHAT also works with providers such as social workers, cancer program patient navigators, resource specialists, and nurses.

Since its inception in FY2001, the CHAT program has provided assistance to 431 women who reside in 135 cities and towns within Massachusetts. In FY2008, the program provided assistance to 131 women, and a total of \$42,938 was disbursed. The majority of requests were for transportation (31 percent), compression sleeves (27 percent), and breast prostheses and bras (19 percent). In addition, 15 percent of CHAT clients requested assistance with the purchase of wigs, 11 percent with medication, and one percent with psychological counseling. Nine percent of CHAT participants requested assistance with other items related to their breast cancer treatment such as, bandaging, lymph drainage, and acupuncture to alleviate the side effects of chemotherapy.

Sixty-one women submitted more than one request for assistance. The average age of women who submitted a request was 56 years. The average annual individual income of applicants was \$8,318 and the average annual family income was \$16,840. Seventy percent of the women served reside in the Greater Boston area, 31 percent in Eastern Massachusetts, 17 percent on Cape Cod, and nine percent in Central and Western Massachusetts. CHAT serves a diverse group of women. Of the 431 women who have received assistance from CHAT to date, 53 are non-English speakers. These non-English speaking women speak Spanish, Haitian Creole, Chinese, Portuguese, Russian, Albanian, Arabic, and Armenian.

To raise community awareness about the CHAT program, outreach is conducted over the Internet, via hotlines, at community events, with vendors, in local and national resource guides, at support groups, and in community health centers, hospitals, and churches. Referrals come from either providers or from patients themselves.

In FY2008, referrals to the program came from 21 sites across the state including hospitals, health centers, medical practices, social service organizations, and vendors providing cancer and mastectomy related services. Relationships have been formed with several support groups serving minority low income women with breast cancer in order to provide them with breast cancer related resources. CHAT Program staff work in collaboration with the Massachusetts Affiliate of Susan G. Komen for the Cure to raise awareness about the CHAT program and participates regularly with CHAT program participants at special events such as the Susan G. Komen Race for the Cure.

Dana Farber/Brigham and Women's Cancer Center Patient Navigation Program

The Patient Navigator program is part a strategic initiative to reduce health care disparities among diverse populations. The program was established to address the needs of a target population of women, at risk for, or diagnosed with breast or cervical cancer, who may enter the care system through either the Dana Farber or Brigham and Women's Hospital.

The goal of the program is to provide access and identify resources for women from diverse backgrounds, whose socio-economic status, limited English proficiency, disability status, or insurance status may be a potential barrier to care. The program, which began in May 2005, offers two patient navigators, bilingual in Spanish, who assist this patient population by identifying and accessing resources for them, providing education about the importance of follow-up care, and offering support through a continuum of health care.

Since the program's inception, the patient navigators have worked with over 527 patients. The patients referred to the program are thought to be at high risk for not remaining within the health care system for a variety of reasons. The patient navigators provide culturally competent support to their patients, educational information, and assist with identifying resources in order to promote the patient's continued access and connection to the health care system.

Women in Action Taking Charge of Their Health (WATCH) Program

The WATCH program provides culturally and linguistically appropriate workshops on breast cancer education for immigrant women from a variety of countries. Bilingual peer health educators facilitate the one-hour workshops, which are held at churches and other community-based organizations.

To train the peer health educators, the CCHHE compiled a breast cancer peer health education manual. The manual covers the roles and skills of a peer health educator, the concept of prevention, the components of breast health, risk factors for breast cancer, basic information about breast cancer, mammography, and the importance of talking with your doctor and getting regular screenings. The manual also contains a variety of workshop exercises and handouts, which have been translated into several languages. The manual and the workshop exercises are suitable for diverse learning styles and are designed for both non-English speaking and English-speaking women with limited literacy skills.

Prevention and Access to Care and Treatment (PACT) Project

The Division of Global Health Equity (previously known as the Division of Social Medicine and Health Inequalities) at Brigham and Women's Hospital is a pioneering initiative in health care that addresses health disparities in resource-poor communities through training, education, research, and service. Founded in 2001, the Division's mission is to reduce disparities in disease burden and to improve treatment outcomes both at home and abroad. It focuses on infectious diseases (including HIV and tuberculosis) and on non-infectious diseases (including coronary artery disease, diabetes, and addiction) and other health problems of major importance to society.

The Division trains doctors and other health care professionals who work both locally and globally, combining their practical experience with research interests to develop new and replicable medical intervention models that advance medical practice and standards of care. The Division functions in close collaboration with the Department of Social Medicine at Harvard Medical School and in partnership with Partners In Health, a non-profit corporation that has developed and implemented a unique health care model which combines social justice and medicine. All three organizations work with community-based groups to foster active local involvement in the planning of efforts to maintain health, particularly in resource-poor communities.

The Prevention and Access to Care and Treatment (PACT) project, a community-based project in urban Boston, is committed to improving health outcomes for underserved individuals with HIV disease. PACT is a joint project of the Division of Global Health Equity at the Brigham and Women's Hospital and Partners In Health.

PACT was founded in response to the growing incidence of HIV among young Black women in the disadvantaged neighborhoods of Roxbury, Mattapan, Hyde Park, and Dorchester, as reported in a 1997 Boston Globe article. In addition, statistics showed that a Black woman living with HIV in Roxbury had a mortality rate 15 times higher than the average White man with HIV in Boston. Alarmed, a group of community residents in the Roxbury area approached Partners In Health (PIH) for help in creating a community-based program to prevent transmission of HIV and improve access to quality services for those already infected with the virus. With funding from the Office of Minority Health, the PACT Project was born.

PIH recruited and trained the first band of the PACT project's community health promoters (CHPs) from the corps of concerned citizens. These community residents, none of whom possessed any medical expertise, were enlisted, trained, and mobilized to become street-based advocates. Drawing on their acquired medical knowledge and their first hand experience as community members, PACT's CHPs have effectively accompanied PACT participants while navigating the complex maze of social and health resources to find solutions to both the physical and social ills of marginalized populations living with HIV/AIDS. PACT health promoters are also trained to deliver a home-based educational intervention. By being welcomed into patients' homes, the health promoters are able to better understand a patient's natural environment. The insights gained and methods of the PACT health promoters in engaging "challenging" patient populations have been extremely effective and instructive to the physicians and students of the PACT project, thereby, creating an open and mutually rewarding learning community. Over the past ten years, PACT has continued to grow and, in collaboration with other agencies and health clinics, has served over 375 HIV-positive individuals from across the city.

The PACT Health Promotion program relies on trained CHPs to improve marginalized HIV patients' access to, and utilization of health and social resources. CHPs engage patients in health promotion and harm reduction activities, including improved medication adherence, increased use of preventive medical services, reduced emergency room visits and hospitalizations, safer and reduced drug use, and increased condom use.

Participants receive services according to three tiers of varying intensity: once monthly, once weekly, or once daily health promotion services. Patients can move between tiers depending on their needs and clinical status. The directly observed therapy (DOT) initiative is the most intensive program and employs DOT specialists to visit ill and non-adherent patients on a daily basis in order to assist them – and observe them – in taking their life-saving HIV regimen. This program is unique in the country and is a central part of a community-based HIV disease management model that is growing in reputation.

Because treatment and prevention are inextricably linked, PACT also houses an HIV and substance use harm reduction program. The Fuerza Latina program, funded through the Substance Abuse and Mental Health Services Administration (SAMHSA), is a social recovery, leadership development, and community-organizing program designed to address the personal experiences and social context of impoverished Latino men with a history of alcohol and drug abuse. Through Fuerza, these men are trained as peer prevention leaders and conduct HIV and substance abuse prevention activities to reduce drug-related harm in their communities. In 2004, this model was expanded to include Latina women in early recovery from injection drug use, as well as, inner city youth. In 2007, the Fuerza Latina program was integrated into PACT's Health Promotion program to improve harm reduction and drug prevention services to the patients PACT serves.

Goals of the Program. PACT's comprehensive community-based programming aims to achieve three primary goals:

1. To provide harm reduction training and materials, prevention case management, and peer prevention services to high-risk and HIV-positive individuals, including substance abusers and young women

2. To increase access to and utilization of culturally-relevant and respectful health care and social services for those infected with HIV
3. To expand the success of its Health Promotion program by partnering with organizations serving high-risk and HIV-positive individuals that can replicate health promotion services and make the PACT model available to as many individuals as possible

Community-Based Program Components

- **Health Promotion.** HIV/AIDS patients in urban areas struggle to obtain consistent access to necessary health care and social services because of complicated institutional structures and a lack of coordinated efforts between agencies. PACT health promoters build personal relationships with HIV/AIDS patients to help them navigate this disjointed system and achieve better physical health and mental well-being. Health promoters visit patients weekly and accompany them to medical and social service appointments. They educate patients about HIV and antiretroviral therapy, provide social support, and collaborate with other agencies to connect patients to existing resources. Health promoters are a critical link between patients and the resources they need to be healthy and contributing members of society.
- **Directly Observed Therapy.** Some patients are chronically non-adherent to HIV medication due to overwhelming personal and social obstacles and extreme HIV/AIDS-related illness. PACT is the only program in the country to offer these individuals its unique brand of home-based directly observed therapy (DOT) of HIV medications. Patients who receive DOT continue working with their health promoter but are also assigned a DOT specialist who visits their home each day to observe and support them during their pill-taking routine, a complex regimen requiring timeliness and precision in the management of multiple and changing dosages. DOT specialists provide guidance and instruction to prepare patients to eventually self-administer their medicine. PACT clients may move between the health promotion and DOT programs as their adherence to medication, health status, and social and psychological circumstances change.
- **Harm Reduction.** The Fuerza Latina program continues to operate. A Harm Reduction Coordinator, two Peer Prevention Leaders, and volunteers from Harvard Medical School and College, conduct street outreach in the Boston area. This team provides one-on-one education to injection drug users and commercial sex workers, enabling them to reduce their risks of HIV infection and other drug-related harm.
- **Research and Evaluation.** The goals of PACT's programs are to improve the health and quality of life of participants while reducing high-risk behavior and medical costs associated with illness and poor health care. Quantitative data is being collected through questionnaires that assess access to care barriers, mental health, risk behaviors, self-efficacy, and overall program satisfaction. Medical chart reviews and physician reports help track outcomes such as recent opportunistic infections, CD4 and viral load counts, emergency room visits, and hospitalization rates.

Qualitative data is being collected through focus groups, interviews, and participant observation. These help instruct the design and implementation of responsive and effective interventions, as well as, shed light on the barriers that the poor and

marginalized face in achieving good outcomes. Patient parameters prior to and after entry into health promotion and DOT programs are compared in order to assess change over time.

In the prevention program, relapse rates, outreach data (e.g., number of condoms and bleach kits distributed in the community), and the impact of community mobilization efforts are being tracked. These data are compared against similar programs in the country.

PACT Outcomes

Patient Care

Over the course of the year, six Health Promoters and three and a half Directly Observed Therapy Specialists cared for an average monthly caseload of 90 patients. In 2008, PACT enrolled a total of 24 new patients into the Health Promotion program and discharged 31 from care. Currently, 89 patients are receiving standard health promotion services, and 21 are receiving directly observed therapy. PACT is in the process of increasing capacity by training and hiring new CHPs and increasing patient enrollment.

Patients continued to demonstrate significant improvements in their management of HIV, as demonstrated by decreases in viral load and increases in CD4 counts. Over the course of 12 months in the program, patients' viral load (which quantifies the amount of HIV in the bloodstream) decreased by an average of 58 percent and their CD4 count increased by 66 percent. (CD4 count is a measure of immune system strength: CD4 count <200 cells defines AIDS. Healthy CD4 counts range from 600-1,500 cells.)

In late 2005, PACT received one of the inaugural grants of the Blue Cross Blue Shield Foundation of Massachusetts's initiative, Closing the Gap on Racial and Ethnic Health Care Disparities. Through this three-year grant from BCBSMA, PACT partnered with the infectious disease (ID) clinic at Brigham and Women's Hospital to implement a program designed to reduce racial and ethnic disparities in access to and benefits from HIV/AIDS treatment. One major activity is working with the ID physicians at BWH, who care for over 500 HIV-positive patients each year, on delivering culturally competent care that meets the needs of the marginalized HIV patient population.

Dissemination and Replication of the PACT Model of Care

Over the years, a strong focus on robust data collection and constant quality improvement measures have resulted in a sophisticated intervention that PACT has been working to package as a replicable model that can be implemented in diverse sites across the country. Cities and communities are increasingly interested in the community health worker model and have asked PACT for tools and technical assistance to replicate the PACT model for HIV care among poor and underserved patients. PACT has demonstrated its commitment to disseminating the knowledge gained and materials created throughout the development of the current PACT model through the creation of the new Replication and Adaptation team. Dr. Heidi Behforouz and the Replication and

Adaptation team have been working with the New York Department of Health and Mental Hygiene to adapt the PACT model for HIV care in New York City. Since 2007, when the PACT model was piloted at Lincoln Hospital in the Bronx, two more sites in New York City, the Institute of Family Health and Roosevelt Health Center, have also been building capacity to launch a PACT-like community health worker program. PACT has also partnered with the University of Miami in launching a replication site at Jackson Memorial Hospital in Miami, Florida, in early 2008.

PACT also collaborates with local partners, such as the Boston Health Care for the Homeless Project, AIDS Action Committee of Massachusetts, and Codman Square Health Center to expand its Health Promotion model to the patients that those organizations serve. PACT has worked with its partners to tailor the intervention to the specific needs of the population it is serving.

Furthermore, PACT believes that its Health Promotion program has enormous potential to support any patient struggling to access the health care system and sustain good health. PACT is working to adapt its Health Promotion program for the care of people living with a number of chronic conditions such as diabetes, coronary artery disease, congestive heart failure, chronic obstructive pulmonary disease, asthma, and emphysema. Of these new disease initiatives, PACT's diabetes project is in the most advanced stage of development. PACT has long recognized that diabetes is yet another chronic disease disproportionately burdening poor and minority communities across the United States. In collaboration with Codman Square Health Center and DotWell, two community health organizations in Dorchester, PACT is integrating its Health Promotion program into their existing diabetes program.

PACT-DotWell Diabetes Initiative

In the city of Boston, diabetes-related deaths increased ten percent between 1999 and 2003 (Boston Public Health Commission, 2005). Within the city, Mattapan, Dorchester, and Roxbury are among the top four neighborhoods for diabetes related deaths (Massachusetts Department of Public Health, 2006). The increasing prevalence of diabetes as a major health concern has gained the attention of DotWell's care providers. The PACT-DotWell Diabetes Initiative has been implemented in response to these concerns, with the ultimate goal of adapting PACT's successful community health worker (CHW)-led HIV health promotion model to diabetes care.

This collaboration will address the needs of the highest-risk diabetic patients of Codman Square Health Center and Dorchester House Multi-Service Center. These patients constitute between 10-15 percent of DotWell's diabetic population and represent those patients who are having difficulty engaging with their health care providers, poorly adhering to their diets and medications, and suffering from macro- and micro-vascular complications associated with poorly-controlled diabetes.

PACT has concluded the planning period for the PACT-DotWell Diabetes initiative at the Codman Square Health Center. The project is currently in a pre-pilot period during

which curricular, program, and evaluation materials and instruments are being developed and tested. Through the testing of these materials the intervention will be refined. Three community health workers will be hired and trained to deliver the intervention, which is scheduled to begin in July of 2009. In the pilot 180 patients meeting high-risk criteria such as elevated blood glucose, the presence of additional cardiovascular risks, and disengagement from the existing care system, will be enrolled into the study. 90 of these patients will be randomly selected to receive the home-based, health promotion intervention with a CHW, and 90 of these patients will be randomly selected to participate in the control group. In addition to the home-based intervention, PACT is also working with the Codman Square Health Center to improve its clinical practice through the use of standardized treatment algorithms, and improved group activities and educational programming. At the end of the year-long intervention and again at the six-month follow-up, outcomes within the two groups, including blood markers, health care utilization patterns, and medication adherence rates, will be analyzed and compared. If the CHW intervention is deemed successful, it will be integrated into DotWell clinics system-wide and offered to other clinics and hospitals for replication.

The PACT-DotWell Diabetes Initiative is not only intended to positively affect health outcomes for participants receiving the intervention, but will also contribute to both DotWell's larger diabetes initiative and the existing body of literature on interventions for diabetes management in high-risk patients.

Jamaica Plain

Boston Asthma Initiative (BAI)

In 1997, the Jamaica Plain community identified asthma and related environmental issues as problems in their community. To address these problems, residents of Jamaica Plain, representatives from community-based organizations, and representatives from Brigham and Women's Hospital, Children's Hospital, and Faulkner Hospital collaborated to develop the Boston Asthma Initiative (BAI).

From the inception of the program, the BAI has sought to address asthma in the schools and in homes, while examining access to and quality of health care for children and adults living with asthma. In recent years, the program has expanded its services to other Boston communities neighboring Jamaica Plain, including Dorchester, Mattapan, and Roxbury. The BAI is a program of Ensuring Stability through Action in Our Community (ESAC), a non-profit organization that serves low- and moderate-income homeowners and promotes stable, integrated neighborhoods. Brigham and Women's Hospital's Center for Community Health and Health Equity provides financial support to the ESAC for the asthma program.

The goals of the BAI are to:

- Identify school children and other household members with asthma and increase their understanding of asthma management

- Identify and address environmental issues contributing to asthma in schools and households
- Increase access to quality health care for asthma treatment and management
- Increase awareness of asthma as a community health problem

The BAI targets:

- Boston elementary school children
- Household members of children with asthma
- Parents, teachers, and school administrators in Boston elementary schools
- Asthma care providers
- Communities impacted by asthma

The Boston Asthma Initiative provides bilingual asthma education services to children and families living with asthma. Services include: home visits, classroom education, assistance to schools in identifying and addressing environmental concerns, public health education, resource guides, and referrals to housing, environmental, and legal agencies.

All of these services are provided free of charge in a culturally competent manner to people living in Jamaica Plain and in the surrounding communities of Dorchester, Mattapan, and Roxbury. These neighborhoods have been identified as having the highest rates of asthma in Boston, disproportionately affecting minorities and children living in these urban environments. The BAI maintains strong ties with community partners (such as the Boston Public Health Commission, Massachusetts Coalition for Occupational Safety and Health (MassCOSH), and the Community Asthma Initiative), health centers, and the Boston Public Schools to sustain a comprehensive health network for children and families living with asthma.

The BAI works across all sectors of a child's life, including the school, home, health center, and community to link services to improve asthma management for all of the families it serves. With a strong emphasis on preventive care, BAI provides families with the knowledge and skills to better manage their child's asthma and to avoid unnecessary and costly trips to the emergency room. BAI does this by increasing families' knowledge of asthma and by empowering them with tools for advocacy and health care decision making.

Home Visiting

The BAI conducts home visits during which clients learn how to reduce or eliminate asthma triggers. Topics covered during home visits include asthma physiology and treatment and medication management. An environmental assessment of the home is also conducted, and information is provided on the role of dust, pets, carpeting, pests, mold and mildew, cigarette smoking, overcrowding, overheating, strong odors, and poor housing in contributing to asthma. During FY2008, the BAI received 206 referrals and conducted 158 home visits.

School Programs

Open Airways for Schools. One of BAI's school-based initiatives is the Open Airways for Schools asthma curriculum developed by the American Lung Association. The curriculum is multicultural and targeted at third through fifth graders. The components of this curriculum include a review of medications, asthma management, physical activity, and asthma trigger modification. The "Open Airways" school program was held in the spring. There were a total of 60 participants in the winter/spring sessions held at the Hennigan Elementary School. Earlier in the year the program was conducted at Trotter School serving 55 students for an annual total of 115 children served during the year.

Environmental committees serviced by BAI staff were maintained in the Hennigan, Trotter, Curley Middle, and Curley Elementary schools. These committees work to identify the environmental triggers for asthma that are present in the school and to create a plan for action and remediation of the triggers.

Boston Asthma Swim Program. In collaboration with the Boston Public Health Commission (BPHC), the BAI provides the Boston Asthma Swim program. Boston Asthma Swim is a curriculum developed by the BPHC that combines swimming with asthma education. During FY2008, two sessions of the Boston Asthma Swim program were held.

Beyond Boston

Indian Health Service

The BWH Physicians' Council, through its Brigham and Women's Outreach Programs (BWOP), is committed to supporting BWH physicians in contributing their skills and time through volunteerism. The goals of the Outreach Program include the development of a program that enables BWH physicians to directly support and enhance patient care delivered at a selected program site, while providing a sustainable, ongoing contribution to supporting an underserved community.

In April of 2008, the BWH Physicians' Council selected the Indian Health Service (IHS) as the site for its outreach program. The significant needs of the IHS underserved community, its location within the United States, and its existing strong ties with BWH all support the goals of developing a successful and sustainable program. Selection of this site followed a competitive application process that included over ten impressive organizations around the world.

The program focuses on creating volunteer opportunities for BWH physicians at the IHS hospitals in Gallup and Shiprock, New Mexico. Gallup is an urban setting and the IHS hospital there offers a wide range of specialized care. The hospital in Shiprock is in a rural setting on the Navajo reservation. Both the 55-bed facility at Shiprock and the 99-bed hospital at Gallup have adequate equipment, medication and supplies, but they are challenged by a shortage of staffing. The Indian Health Service reports a nearly 15

percent vacancy rate in essential clinical positions. The Brigham and Women's Outreach Program physician volunteers are helping alleviate this challenge. BWH physicians have the opportunity to work at these facilities for a minimum of one to two weeks. Ideally, they travel as a group from BWH, providing teaching and patient care with the aim to provide support that contributes to infrastructure and clinical expertise of the IHS. Dr. Phyllis Jen, a senior physician at BWH, leads this effort.

Mission Hill Community Activities

Mission Hill Main Streets (MHMS)

BWH serves as the "corporate buddy" for Mission Hill Main Streets (MHMS). BWH holds a seat on the board of directors of MHMS and in FY2000 made a four-year commitment to provide \$10,000 annually. That commitment was extended for two years in FY2004 and the annual contribution was increased to \$15,000. In addition to this financial support, the partnership also assists MHMS by providing technical assistance, contributions to support a range of community projects, and promotional support for the organization's activities, as well as, meeting any other responsibilities of being a "corporate buddy." In FY2007, BWH again extended its financial commitment to MHMS for another two years. This extension brings BWH's total financial contribution to \$100,000, making the BWH the largest non-profit contributor to any of the city's 16 Main Streets organizations.

Mission Hill/Fenway Food Project

As a founding member of this collaboration in 1984, BWH sponsors biannual canned food drives that benefit the emergency food pantry at the Parker Hill/Fenway ABCD office. In 2008, the 'Spring for a Can' drive netted over 1,000 pounds of canned/dry goods to benefit the neighborhood emergency food pantry.

Mission Hill Youth Collaborative

Mission Hill Youth Collaborative brings together a group of organizations and community groups located in and serving young people in Mission Hill. BWH, as an original member of this group, is committed to working with this collaborative to plan and develop job training opportunities for the youth of Mission Hill, in addition to establishing a seamless network of shared information and programs among those agencies serving youth. BWH has made monetary contributions totaling approximately \$60,000 to this organization for the past six years.

Other Mission Hill Support

BWH continues to support programs for the young and old of the Mission Hill neighborhood. The hospital provides annual contributions to support the Mission Hill Little League. It also supports City Councilor Mike Ross's annual softball league, which draws participants who range in age from 16 to 21 years old. In addition to providing

recreation and exercise, the softball games provide an opportunity to offer information on job assistance and health care services.

For the past 20 years, BWH has maintained a discount meals program for Mission Hill seniors. This program allows neighborhood seniors a full meal one Sunday a month in the hospital cafeteria. Additionally, BWH provides a free flu vaccine program for Mission Park residents. This program has been offered for the last 18 years. In May, 2008, the CCHHE coordinated four community based, cardiovascular screening clinics, in conjunction with the opening of the Shapiro Center at 70 Francis St. These screenings combined to evaluate approximately 140 Mission Hill residents for cardiovascular risk.

BWH provides contributions, both financial and in-kind, to many other Mission Hill groups, including Mission Main Tenants Task Force, Roxbury Tenants of Harvard, Mission Main Crime Committee, the Alice Taylor Tenants Task Force, and the Community Alliance of Mission Hill. BWH also pays the bus transportation costs for all of the Mission Grammar School field trips throughout the academic year. In 2008, BWH helped sponsor the fourth annual Mission Hill Road Race, which is hosted by Mission Hill Neighborhood Housing Services and for the thirteenth year in a row, BWH, working with the Mayor's Office of Neighborhood Services, supported the annual Mission Hill Christmas tree lighting ceremony.

The BW/F family provided significant support to the Parker Hill/Fenway ABCD in 2008. Our department of Neurosurgery donated \$2,500 to help Parker Hill/Fenway ABCD obtain toys and other Christmas gifts for needy families in the Mission Hill area. In addition, BWH provided full dinners for 50 Mission Hill families and our Physician's Organization donated \$5,000 to aid low-income families of the Mission Hill area.

In 2008, for the fourth year in a row, BWH contributed \$10,000 to the Parker Hill/Fenway ABCD for their annual Summer Works program. These funds allow ABCD to hire ten additional neighborhood youth for summer employment. In addition, BWH provides ten summer job positions to both Roxbury Tenants of Harvard and to Parker Hill/Fenway ABCD (five to each organization). These ten slots allow the hiring of Mission Hill youth to various jobs at BWH.

Youth Programs and School Partnerships

Citywide

Student Success Jobs Program

In response to many of the issues identified through a comprehensive needs assessment, BWH launched the Student Success Jobs Program (SSJP) in 2000. SSJP is an after-school and summer work achievement program that provides internships to underserved students from seven Boston public high schools in Mission Hill, Roxbury and other Boston neighborhoods. SSJP matches students with a mentor within the medical field, provides them with hands-on work experience in the hospital, and enhances their interest

in higher education in health fields. In the summer, the students also may participate in six-week internships in the hospital. SSJP students have a unique opportunity to take part in an innovative learning initiative that establishes tangible links between work and school.

The goals of SSJP are to enable participating students:

- To address the need for proficient and traditionally under-represented populations in health, science, and medical careers
- To enhance high school students' interest in health careers through mentorship by health care professionals
- To support academic progress and post secondary education of participating Boston public school students
- To foster networking opportunities for emerging and under-represented health care professionals with peers and the hospital community

Students are selected for participation in SSJP from the following seven public high schools: Boston Latin Academy, Community Academy of Science and Health, Health Careers Academy, Madison Park Technical and Vocational School, John D. O'Bryant School of Math and Science, New Mission High School, and Parkway Academy of Technology and Health. Each high school that participates in SSJP has an on-site career specialist from the Boston Private Industry Council (PIC) who works with students to both explore their emerging career interests and connect them with employment opportunities. In conjunction with the Center for Community Health and Health Equity's youth programs manager, the school-based PIC career specialists target a pool of interested and qualified students and refer them to SSJP.

The criteria for selection are:

- Presently enrolled in a partnering high school
- Interested in pursuing a health-related career after graduation from high school
- Capable of maintaining a grade point average of 2.5 or better
- Completion of an essay explaining their interest in working at BWH
- Submission of two letters of recommendation
- Demonstration of responsibility, maturity, and strong communication skills while in high school
- Commitment to working ten hours per week during the academic year (summer internships are an optional 25-hour per week commitment)

Student participation in SSJP increased by 92 percent between FY2005 and FY2008, from 25 students in FY2005 to 48 students in FY2008. In FY2008, twenty-eight of those 48 students were new to SSJP, and 20 were returning to the program from the previous year. Forty-four of the students successfully completed the program, each working ten hours per week at Brigham and Women's Hospital from mid-October 2007 through the end of June 2008. In FY2008, there were 18 seniors among the 44 high school students who successfully completed SSJP. All 18 of the seniors registered for the fall semester in a college or university, and all of them chose a health or science major.

In the eight years of the program, 167 students have participated in SSJP. Thirty-three percent of these students were Black, 25 percent Latino, 21 percent African/Caribbean, 15 percent Asian, four percent White, and two percent other. Eighty-five percent were female, and 15 percent male. In FY2009 efforts are underway to increase the percentage of male students in SSJP. Twenty-six percent attended Madison Park High School, 26 percent Boston Latin Academy, 16 percent Health Careers Academy, 15 percent John D. O'Bryant High School, 12 percent New Mission High School, and five percent Parkway Academy of Technology and Health.

Since the 2004-2005 academic year, 55 SSJP students have graduated from high school:

- 98 percent have enrolled in college
- 94 percent are majoring in or intend to major in a science or health field

Volunteer Participation and Mentoring

During FY2008, the SSJP students were assigned to 30 BWH departments, including: Ambulatory Radiology, Blood Control Lab, Center for Fetal Medicine, Center for Community Health and Health Equity, Center for Community Research, Central Transport, Department of Medicine, Computational Biology, Diagnostic Radiology, Division of Rheumatology, Electron Microscopy Lab, Intervention Radiology, Immunology and Allergy, Inpatient Floors, Kessler Health Library, Microbiology Lab, Molecular Diagnostic, Neurology Lab, operating room, Orthopedics, Pathology Lab, Pediatric Oncology, Podiatry Clinic, Post Partum floor, Pulmonary Lab, Radiology Film Library, Renal Division, Renal Pathology, Southern Jamaica Plain Health Center, and Thoracic Surgery.

The SSJP students were each matched with a mentor in the BWH department to which they had been assigned. Mentors met regularly with the students, assigned tasks, answered questions, offered support, and provided guidance on school and career goals. At the end of the year, of the students that responded to this question, 93 percent of the students reported that they met with their mentors at least twice per week, with 37 percent of these students reporting they met with their mentor at least four times per week.

Eighty-six percent of the students rated their relationship with their mentor as excellent or very good. The students also wrote about what they had learned while working with them. Excerpts from two students' letters follow:

"In addition to all the great opportunities from being in a lab cutting mice, monkey, and human brains to fully independent research on treatment and prevention for Alzheimer's Disease, SSJP has provided me an everlasting mentor, Dr. Cindy Lemere. I could come to her for anything. My mentor has not only given me great advice in academics, but beyond. I cannot thank her enough."
Kevin Le, 12th grader

“During the two years, I had worked in the same department. I can still remember the first day when I found out that I was assigned to the Electron Microscopy Lab. I was confused by the name and thought that lab work was routine. However, as time passed, I became more attached to the lab work as I got more involved.. Under the guidance of Dr. Joel Henderson, I gained knowledge and picked up many tips. I became rich with knowledge because he is such a generous giver and I couldn’t possibly ask for more.” Mei Cao, 12th grader

The mentors were also asked to provide feedback on their experiences with the SSJP students. Ninety-three percent of mentors who returned their surveys responded that they wanted to work with a student again next year. They were also asked what they found most positive about their SSJP experiences. Some of the mentors’ responses included:

“He gave me the chance to use my skills as a teacher to another. I enjoyed teaching my student different aspects of the job and about surgery/science/medicine.”

“I have a chance to take part in motivating them both educationally and personally. Watching a young person gain personal confidence a sense of self and an understanding that we are contributing to the education of young people.”

“To provide the opportunity to a student to learn about the many different aspects working in a health care setting.”

SSJP 2007-2008 Academic Year Program Components

Monthly Seminars

The seminars provided additional opportunities for the students to come together for presentations, discussions, and group activities. Seminar topics included: Banking Basics and Personal Finances, Vehicle Safety, Mental Illness, Nutrition, Reproductive Health, and The Path to Medical School.

Tutoring

Math and science tutoring sessions were offered twice a week for those students who were experiencing academic difficulties. Seven SSJP students received instruction from the SSJP Academic Tutor in pre-calculus, calculus, chemistry, and biology. The students were required to remain in tutoring until they were able to raise their grades to the SSJP required minimum of B minus.

Newsletter

The SSJP students helped to produce a bi-annual newsletter called the *SSJP Visionary*. The newsletter featured articles written by the students and was distributed to over 300 individuals, including BWH staff, SSJP families, and organizations that have partnered

with SSJP. The newsletter has proven to be an effective way of sharing program updates and activities.

SSJP 2007-2008 Evaluation Results

SSJP evaluation results for FY2008 show that students reported that they had learned the following:

- Hospital Procedures:
 - Sterilization of medical and surgical supplies
 - Learned how to hook an oxygen wire to the unit
 - Where blood or urine goes after it's sent to be tested
 - Prepare patient packets
 - Learned how to stock anesthesia and cardiac surgical carts
 - Learned how to deliver supplies to operating rooms
- Lab Skills:
 - Cell traction
 - Setting up and performing specific numerous experiments for the zebrafish
 - More knowledge about the SCL gene, Myc gene, T-Cell Leukemia, and cells
 - Workers in the lab have to follow specific drills when handling equipment and especially the experimental fish.
 - Proper lab procedures and safety guidelines
 - Handling lab animals
 - Tissue sectioning
 - How to dissect a mouse
 - How to locate the nucleus of a cell that has been stained
 - How to run a PCR (Polymerase Chain Reaction)
 - How to use various chemicals to stain a cell in order to locate
 - How to properly use a microscope
 - How to create your own slides by slicing the tissue yourself
 - Learned how to use pipettes to separate the DNA
 - Find information about patients using LMR / BICS
 - Learned to make food for cells
 - How to put blood into machines that separate cells
 - How to separate lactic acid specimen
 - How to distribute specimen equally
- Patient Interactions:
 - Discharge patients
 - Distribute refreshments to patients and ensure comfort
 - Answered phone system and learned how to schedule appointments

Students were asked if being in SSJP helped them balance various aspects of their life. Eighty-nine percent of students responded that the program has helped them learn how to be more organized. Several students provided more information on their ability to multitask because of being in the program:

“I became more engaged with my own schedule used my agenda everything single moment of my life. I also learned to make sacrifices both in my personal area and academically. SSJP taught me to make realistic decisions and be always on time for an appointment or SSJP meeting.”

“I have always been an organized person, but being in SSJP I had a lot more on my plate. Because of this, I was able to manage my time better.”

“Prioritizing things was key in staying focused on my internship as well as my personal obligation. I had to decide what things could be rescheduled or missed so that my work would not be interrupted. I also had to not work on days in which I had tests of needed study time on so that my grades were not affected.”

College Scholarships

Sixteen of the 18 high school seniors in SSJP applied for and received one-year college scholarships that were offered by the Center for Community Health and Health Equity in FY2008. In March 2008, each student submitted an application form, a transcript of their grades, two letters of support, copies of the college acceptance letters that they had received, and an original essay on what they had learned in SSJP and why they wanted to pursue a health career.

The SSJP Scholarship Selection Committee met in March 2008 to review the application packets. Six students received \$4,000 scholarships, four students received \$2,000 scholarships, four students received \$1,000 scholarships, and two students received \$500 scholarships.

Summer Internships for College Students

In FY2008, the CCHHE provided full-time summer internships for 12 college students. Eight of the students were graduates of SSJP and four were enrolled in the PS Health Care Program through the Boston Private Industry Council. All SSJP College Interns are majoring in science and health fields. They began their ten-week internships at Brigham and Women’s Hospital in June 2008. The students worked in the following hospital departments: Department of Pharmacy, Center for Surgery and Public Health, Blood Control Lab, Intervention Radiology, OB/GYN Clinic, Center for Women and Newborn, Thoracic Surgery, Division of Immunology and Allergy, Neo-Natal Intensive Care Unit, and a Harvard School of Public Health Pathology Lab.

New Components for 2008-2009

College Preparation

As the goals and expectations of SSJP students have consistently risen since the program’s inception, we identified the need for specialized support for seniors to be better prepared for college, and have contracted with an expert in the field to design a

program to strengthen their competitiveness and college applications. This effort in collaboration with MGH's Pro-Tech Program is designed to help students: 1) gain admission to the college that is right for them while learning valuable problem-solving and decision-making skills; and 2) learn how to manage a complex application process that typically involves a range of challenging tasks and varying emotions while achieving their goals. The program began in October 2008, with seniors attending monthly workshops to help them identify potential colleges, prepare college applications, and navigate the financial aid process.

Students also receive individual coaching to research and finalize their college lists, help them strengthen their college essays, complete financial aid applications, and interpret the information received from colleges. The college coach works with students to review their academic and activities records, prepare for college visits, create a timetable of tasks in the application process, and practice for interviews.

Additional Partnering School

During the spring of 2008, administrators from the Community Academy of Science and Health (CASH), a Boston public school located in Hyde Park, contacted SSJP staff to inquire regarding participation in SSJP. After several discussions and a meeting with relevant school staff including the headmaster, CCHHE staff agreed to create a formal partnership with CASH and began accepting CASH students to SSJP as of October 2008.

Alumni Component/Outcome Evaluation

SSJP staff is working with the CCHHE evaluation team in generating a document to track the education and career activities of SSJP graduates. The goal is to annually collect information to better understand the long term impact of SSJP, and to inquire if the program can provide support and networking opportunities to past participants.

Simmons College Intern

During the 2008-2009 academic year, an undergraduate student from Simmons College majoring in public health, completed her practicum requirements in the CCHHE, and worked specifically with SSJP. She oversees the tutoring component, college prep workshop series and work on an alumni component to assist us in tracking SSJP graduates in their educational and career endeavors.

Jamaica Plain

Team Mita: Working for the Health of the Community

Team Mita develops youth leadership skills through peer-led community health improvement initiatives providing interactive, youth-led health education workshops, while also engaging in youth-led anti-violence organizing. The Team Mita peer leaders, who are between the ages of 14 and 18, and reside in the South Street Housing development, receive extensive training on a number of topics such as sexual health,

emotional wellness, nutrition, asthma, job readiness, resume writing, communication, mediation and other violence prevention techniques, environmental justice, and community organizing.

The peer leaders are expected to do outreach to a minimum of 12 youth groups annually. The peer leaders have developed workshops on gender roles, STD prevention, teen pregnancy and contraceptive methods, and healthy and unhealthy relationships. Each workshop, which is intended to encourage provocative discussions and insights, is accompanied by a short video clip, developed and edited by the peer leaders. Additional workshops on domestic violence prevention, sexual harassment, and, most recently, on media literacy, communication, and conflict resolution have been created by the program participants.

Team Mita empowers the peer leaders to make healthy choices for themselves, while they educate others their age on how to make healthy choices. By the end of FY2008, the peer leaders reported that they:

- Engaged in healthy behaviors because of their increased understanding of health topics
- Promoted and supported the healthy choices of others as measured by their ability to lead health education workshops for their peers
- Were able to resolve conflicts as measured by their participation in Youth Unscripted training
- Used community organizing skills as measured by their participation in community-wide initiatives
- Learned about cultural competency as measured by their participation in ongoing diversity trainings

The peer leaders' skills are evaluated using the Massachusetts Work-Based Learning Plan (MWBLP), and the teens must progress from a rating of "needs improvement" to a rating of "competent" or "proficient" in at least five skill areas. Along with the program coordinator, the peer leaders evaluate themselves twice a year and have developed a number of their own evaluation criteria specific to the health education goals of the program. All of the FY2008 peer leaders made progress on the MWBLP evaluations.

The peer leaders offer workshops to at-risk youth in Boston, including other peer leadership programs and community centers. Since December 2003, a total of 25 young people have been Team Mita peer leaders. In FY2008, 70 young people attended 21 trainings conducted by the peer leaders. Since it began, Team Mita has reached over 324 young people and conducted 60 trainings.

Artist in Residence

Beginning in FY2005, Team Mita sponsored an "Artist In Residence" who works with the teens to develop a media project. In FY2008, the teens worked with Lisa Dush, PhD, from Storybuilders, a digital storytelling group. The peers did intensive digital

storytelling training and completed six stories focused on violence in the home and community. Team Mita is now working with Michael Cermak, a Boston College PhD candidate, to develop an interactive website that will show the youth investigating and explaining the local food system. This website can be used to educate the community and for future classroom use.

Health Careers Ambassadors Program (H-CAP)

Team Mita continues to collaborate with the Hyde Square Task Force (HSTF) and their Health Careers Ambassadors Program (H-CAP) that was piloted at the Southern Jamaica Plain Health Center (SJPHC) in FY2004 to provide job shadowing and health careers education. All six of the peers are introduced to the different departments at SJPHC and learned about a variety of health careers. As participants in H-CAP, they receive college preparatory and evening tutoring support through the HSTF and meet one day a week with other H-CAP interns to learn about health topics and to work on a service project. In FY2008, the peer leaders created a documentary on community violence called “Looking for Peace One Block at a Time”. The peers show the documentaries to various groups and facilitate discussion that promotes peace in Boston.

Youth Unscripted

The peer leaders continue to work with Urban Improv in the Youth Unscripted Program. In FY2008, Youth Unscripted continued to meet at English High School with over 45 participants. Ten youth were hired by Urban Improv over the summer as a youth theater troupe and performed for summer camps and other youth groups.

The South Street Youth Center

The mission of the South Street Youth Center (SSYC) is to provide a safe, educational and engaging space during out of school time for young residents of South Street development. Through its broad-based programs, participants learn a happy, healthy, resilient attitude toward life that will help sustain them through adulthood.

Staffing

The SSYC is staffed by a full-time Director, a part-time Program Coordinator, an average of three to four volunteers a week and six middle school peer leaders who call themselves the Colossal Peace Crew (CPCs).

Programming and Collaborations

SSYC offers after-school programming Monday through Thursday for first through eighth grades and every other Friday for middle school youth. The Youth Center’s programming focuses on providing choices for its young participants. There is a wide range of enrichment activities available, as well as, educational opportunities. Normal rotation of planned activities includes art, cooking, experiments, and outdoor games.

Daily, the youth have choice time when they can explore the resources at the SSYC— books, games, computer time, foosball, individual art projects, and interacting with the adults present.

Due to new collaborations the programming has increased for both the after school and middle school programs. The SSYC collaborated with several organizations this fiscal year including: Boston Police’s E-13 office, Representative Liz Malia’s office, Team Mita, The Medical Foundation’s Healthy Girls Healthy Women Program, Northeastern University, Originations, Slightly Askew, The Food Project, Patty the Garden Girl, Curtis Hall, and Hyde Square Task Force. These collaborations have provided workshops, as well as, greater access to resources for SSYC. The FY2008 workshops include sexual health, nutrition, African and Latin dance and hip-hop classes, farming tutorials and gardening demonstrations. SSYC has benefited from other collaborations that have provided resources and on-going activities for after-school programming such as weekly dance classes, weekly gym time at Curtis Hall and a plethora of craft supplies. The remaining collaborations have provided volunteers to help continue our programming and train our staff.

Attendance

Another area of success for FY2008 is the overall increase in youth participation at the center. This was due to an increase in staffing (a part-time Program Coordinator was hired to staff the center when it is open) and more targeted outreach to new families in the South Street community. Participation has increased from an average of 19 youth per day to 24 per day, an increase of nearly 32 percent.

Academics

The youth center specifically targets younger youth in first through fourth grades for homework assistance and strongly encourages reading with the youth who speak a language other than English at home. As outlined below, only 15% of our youth report attending other after-school programs, most of whom report attending an athletic activity. As a result, the SSYC becomes one of the primary supports for youth to complete homework and work towards greater success in school.

	Report regularly completing homework at SSYC	Report receiving help from SSYC Staff or Volunteers	Report grade improvement when homework completed at SSYC	Report participation in other out-of-school time programs
FY2007	61%	61%	n/a	4%
FY2008	76%	91%	92%	15%

Mission Hill

ScienceWorks

For 12 years, the Center for Community Health and Health Equity has offered volunteer and summer job opportunities to eighth grade students. Participation in the summer

program ScienceWorks begins in the spring term of the school year when students receive their volunteer assignments in hospital departments. The volunteer assignments allow students to explore potential summer work sites and begin to learn job skills and prepare for their summer work experiences. Students who successfully complete their volunteer assignments are placed in paid summer jobs in departments throughout the hospital. Skills gained by the students through their paid and volunteer work include punctuality, professional dress and behavior, ability to complete tasks, verbal and written communication skills, problem solving, and use of technology.

During FY2008, 20 eighth grade students from the Tobin School, Roxbury Preparatory Charter School, and Mission Grammar School participated in ScienceWorks. In addition to volunteer opportunities and summer jobs, ScienceWorks also has an academic component, which features a series of afternoon seminars designed to educate the students about the human brain.

Volunteering

ScienceWorks started in June 2008 with a two-week volunteer opportunity. Students were placed in hospital departments and were expected to volunteer in those departments for ten hours per week. Participating departments included: Center for Community Health and Health Equity, Center for Women and Newborns, Central Transport, Materials Management, Operating Room, Kessler Health Library, Radiology, and Receiving and Distribution.

Summer Jobs

Seventeen of the 20 of the students successfully completed their 20-hour volunteer commitment and became eligible for the summer jobs portion of the program. These students worked at their summer jobs for approximately 20 hours per week during July and August.

The ScienceWorks students were asked to complete a pre-questionnaire upon entering the program and a post-questionnaire upon completion. Eighty-six percent of the students reported that their relationship with their supervisor was excellent or very good.

The students also listed skills that they had acquired through participation in their ScienceWorks summer jobs. Those skills included learning how to use a scanner for documents, filing, operate a busy answering telephone system, prepare exam rooms and to stock supply rooms. Students also provided feedback on life skills that they acquired through ScienceWorks: becoming organized, being focused, becoming more mature, improving communication, arriving prepared to work, taking initiative, learning to interactive with adults in a professional environment, and being responsible and trustworthy.

Studying the Human Brain

In FY2008, ScienceWorks offered a series of five three-hour science lessons on the

human brain that were held at Brigham and Women’s Hospital. The lessons were developed and taught by Dr. L. Todd Rose, Ph.D., of the Mind, Brain, and Education program at Harvard University:

- Lesson 1: Human Brain Overview
- Lesson 2: Limbic System: Primary and Secondary Emotions
- Lesson 3: Learning and Memory
- Lesson 4: Personality
- Lesson 5: Senses and Perception

During these lessons, the students learned about neurons, the brain stem, and the hypothalamus. They discussed the physiology of moods and emotions and how the mind acquires, stores, and retrieves information. One week after each lesson, a test was administered to the students to determine how much information they had learned and retained. The students were also required to write and submit research papers on neurology. Their paper topics included the following: memory, laughter, physical and emotional controls in the brain, fear, medulla oblongata, the hemispheres of the brain, the five senses, how art affects the brain, inhibitory control, sleep and dreams, and multiple intelligences.

Health and Science Clubs

Since they were first offered in FY2006, the Health and Science Clubs have provided science learning opportunities to over 200 students in the fourth, fifth, sixth, and seventh grades at three schools and one community center in Mission Hill. In FY2008, the CCHHE coordinated Health and Science Clubs at Maurice J. Tobin School and Mission Grammar School. A total of 67 students participated.

The Clubs provided an informal learning environment in which students worked with one another in small groups led by hospital employees on science experiments and listened to presentations by guest speakers. The relaxed yet structured atmosphere of the Clubs

Test Topic	Number of Questions	Mean Score
Test 1: Human Brain Overview	5	4.5
Test 2: Limbic System: Emotions (primary and secondary)	5	4
Test 3: Learning and Memory	6	5
Test 4: Personality	6	4
Test 5: Senses and Perception	5	4.5

promoted teamwork and produced cooperative learning experiences that increased science knowledge. The Clubs also familiarized students with new health careers and showed them what types of education and training are necessary to pursue specific health career paths. A total of 30 Brigham and Women’s Hospital employees were recruited to serve as classroom volunteers and as guest speakers for the Health and Science Clubs.

The volunteers were recruited from 17 BWH departments and were trained to use the Boston Public Schools’ Youth Explorations in Science (Y.E.S.) curriculum, which aligns to the national science frameworks, enhances and reinforces the Science and Technology for Children and the Full Option Science System curricula (other BPS curricula), and

addresses educational standards for engineering and technology. The Y.E.S. curriculum is also aligned to the science Massachusetts Comprehensive Assessment System (MCAS).

The 29 participating fourth grade students from the Tobin School worked on eight Health and Science Club projects: sound waves, the food chain, periscopes, electronic circuits, properties of matter, flotation and density, paper chromatography, and laws of motion. Six guest speakers presented to the students on nutrition, radiology, exercise, what it is like to be a nurse, and respiration. The CCHHE helped to organize a field trip to the Museum of Science for the students and their parents.

The 38 participating fourth and fifth grade students at the Mission Grammar School also worked on eight Health and Science Club projects but covered oil spills rather than the food chain. Eight guest speakers visited the school to talk to the students about nutrition, neurology, radiology, respiration, and nursing. CCHHE also arranged for the students to go to the Museum of Science for an all-day field trip.

Before and after the first four projects, students take a pre and post test to evaluate how much they already knew about the subject and how much they learned from the projects. Students then take a pre and post test before and after the next set of four projects. Each pre- and post-test consisted of an average of 12 questions about four science projects. The test questions were formulated in collaboration with the participating science teachers. The following table shows the impressive increase in pre- and post-test scores.

**Health and Science Clubs
FY2008 Average Percentage Increase in Pre- and Post-Test Scores**

School and Grade	Fall	Spring
Tobin Grade 4	20% increase	28% increase
Mission Grammar Grade 4	24% increase	34% increase
Mission Grammar Grade 5	11% increase	32% increase

When the participating science teachers were asked to rate the benefits of the Health and Science Club, teachers rated it as “Excellent”, while 95 percent of the participating students wanted to do more science projects.

When asked what they learned from the Health and Science Club, students responded:

“I learned to eat healthy, exercise and watch what I eat. That health is very important”

“I learned about electricity. It was fun!”

“I learned that I can figure out anything.”

Pen Pal Program

In FY2007, the CCHHE started a Pen Pal Program linking 46 elementary school students in Mission Hill with BWH employees. In FY2008 the program more than doubled to 108

second and third grade students at Mission Grammar School and the Tobin School. Students were matched with 109 hospital employees. The pen pals wrote and exchanged eight letters, as well as, an introductory “Meet Me” form.

Each participating BWH employee was given a manual outlining the guidelines of the program, providing information on second and third grade reading levels, explaining the letter sending schedule and protocols, and describing the selected subjects to write about. The BWH Pen Pal Program was incorporated into the grade two and three literacy curriculum with much enthusiasm and success. Teachers noted that the BWH Pen Pal Program facilitated teaching reading and writing and noted the students’ excitement and enthusiasm when reading and writing letters.

In January 2008, the pen pals met for the first time in the students’ classrooms. Adult pen pals got tours of the classroom, read books, worked on a project and got their picture taken with their student pen pal in a photo booth. All pen pals received copies of the photos, and the students were given grab bags filled with stationery kits and pencils to encourage their continued interest in writing. In June 2008, the pen pals were able to meet again in person at Brigham and Women’s Hospital. During breakfast, the pen pals enjoyed a science demonstration by Mad Science, and had their photos taken together in a pen pal photo booth. All pen pals were given copies of the photos and students received “Healthy Summer” grab bags filled with safe and active summer activities and nutritional information for them and their families. The events were a great success with lots of hugs and smiles from adults and children alike, which clearly demonstrated that the pen pals were very excited to meet face to face.

The program was successful in facilitating reading and writing skills among students. Participants (students and teachers) at schools reflected positively on their experience in the program. Ninety-three second and third grade students responded to an end of the year program evaluation survey. When asked how much fun was it to get a letter from a BWH pen pal, 93 percent of students said it was “very fun.” Further, when asked how much fun was it to write to a BWH pen pal 87 percent of students said it was “very fun.” Also among student respondents 97 percent said they wanted to receive/read more letters and 91 percent said they wanted to write more letters. To further infer students’ excitement in the program, all teachers at the participating schools who also completed an end of the year program evaluation survey said that they have seen an improvement in their students’ enthusiasm in reading and writing due to the program. Among teacher respondents, all gave an “excellent” rating to the benefits of the pen pal program to their students and school.

Brigham and Women’s Hospital - Maurice J. Tobin School Partnership

For 18 years, Brigham and Women’s Hospital and the Maurice J. Tobin School in Mission Hill have been working in a unique relationship between an academic medical center and an urban public elementary and middle school which began with a former principal’s request for assistance from the hospital to make improvements to the physical plant of the school and provide nutrition education for students. Today, the connections

between the two organizations have influenced the environments of both, and the partnership has made an impact on the Tobin students.

The overall goal of the partnership is to support the academic mission of the school by increasing parent, family, community, and hospital involvement in students' learning. With the established link between educational attainment and health status, this partnership was created to support the hospital's mission of improving the health status of the Mission Hill community. Family involvement has been shown to be a critical element in student achievement, therefore, the joint programming aims to reach out to families and assist them in becoming active participants in their children's education. Other elements of the program are designed to engage hospital employees in students' education.

The Tobin-Brigham Family Support Program

Three parenting partners and the Tobin Family Support Center coordinator staff the Tobin-Brigham Family Support program. The parenting partners are employed by BWH and work at the school under the supervision of the Tobin Family Support Center coordinator. With guidance from the coordinator, the parenting partners implement literacy initiatives to involve families in their children's education and build relationships between students and adults. The components of the Family Support program include the Family Support Center, Full-Service School Model, Parent Council, Brigham Book Buddy Program, and Brown Bag Food Distribution/Adopt-a-Family Program.

The Family Support Center

The Family Support Center provides a central and visible place in the school where parents know they are welcome, where they can receive information about the school and about community resources, and where they can make connections with other parents. Two of the parenting partners, one of whom is bilingual, have office space in the Family Support Center. A second bilingual parenting partner is based in the school's main office, where she is available to families entering or calling the school. Spanish language capacity is very important, since a majority of Tobin students are Latino, and Spanish is the primary language spoken in their homes. In November 2008, a Grandparents' Support Group was created to assist families where grandparents are the guardian or primary caregiver of a student at the Tobin School. A group of 11 grandparents attended the first meeting and are the leaders of the group. Subsequent meetings and activities are being planned for the rest of the school year.

Full-Service School Model

In January 2005, the Tobin School and Brigham and Women's Hospital began to explore the feasibility of developing a full-service school model, which would enable the Tobin School to offer a broader, more coordinated network of before-school and after-school programs for children and parents. As a result of these initial discussions, a task force was convened in FY2006 to undertake a more thorough planning process.

The task force was comprised of the Principal, three teachers, the Student Support Services coordinator, the school psychologist, the Tobin Family Support Center coordinator, a parenting partner, two representatives from the CCHHE, and two representatives from after-school programs. After a series of meetings, the task force assembled a comprehensive proposal for the implementation of an extended school model, which focused on the following major areas:

- Community Resource Assessment
- Health Services
- Learning Assessment and Evaluation
- Mental Health Services
- Out-of-School Time
- Family and Community Engagement

The Tobin Family Support Center staff is responsible for carrying out the family and community engagement segment of this proposal. In FY2007, they selected a curriculum, ordered materials, and conducted outreach in preparation for English as a Second Language (ESL) classes to be offered at the Tobin School. The classes continued in FY2008 with six parents attending classes. They held fall and spring Open Houses to introduce new parents to the school. Eighty-five parents attended the fall Open House in September 2007, and 55 parents attended the spring Open House in March 2008. The parenting partners also organized two bake sales by parents, an apple picking field trip for families, and movie nights for children and parents. Also, in the fall of 2008 the first Grandparents group was established to support the growing numbers of grandparents that act as the primary caretaker of Tobin School students.

Parent Council

In the fall of 2007, the Tobin School Parent Council was organized, and elections were held for Parent Council officers. A total of eight Parent Council meetings were held over the course of the year, and an average of six parents attended the meetings, which were coordinated by the Tobin Family Support Center staff who created the agendas, outreached to parents, secured childcare during meetings, and facilitated the meetings. The Parent Council is an important way that parents can be consistently involved in the school, make their voices heard, and influence school policy.

Brigham Book Buddy Program

The Brigham Book Buddy Program, since its inception in 1994, has been implemented in partnership with the Maurice J. Tobin School in Mission Hill. The Tobin is a Kindergarten to eighth grade school, with 83 percent of the students coming from families qualified for free or reduced lunch. The Massachusetts Department of Education places the Tobin School in the “Needs Improvement” category in English Language Arts (ELA). In addition, a high percentage of students in the lower grades received a warning or a failing grade on the ELA portion on the state MCAS test.

Each month, hospital employees volunteer their time to the Brigham Book Buddy program by visiting Tobin School kindergarten through fifth grade classrooms and reading aloud to students. The Brigham Book Buddies read books selected by the classroom teachers and, at the conclusion of each reading session, they present the books to the students for their classroom libraries. The goals of the program are to improve students' reading and listening skills, connect the students with health care professionals who serve as role models, and promote the literacy objectives of the school. During the 2007-2008 school year, the Book Buddies read to 188 students in 11 classrooms and donated 77 books to the school.

The program was successful in facilitating reading and listening skills among students in K to five grades at the Tobin. Participants (students and teachers) at schools reflected positively on their experience in the program. Of 109 children who either completed a survey or were questioned by their class teacher, almost all, 99 percent said they wanted to read more books, hear more books read out to them, and wanted a Brigham Book Buddy in their classroom again. Also among student respondents, 92 percent said that it was "very fun" to have a Brigham Book Buddy in their classroom and 89 percent said it was "very fun" to have books read out to them. To further infer students' interest in the program, all teachers who completed an end of the year program evaluation survey said they have seen an improvement in their students' enthusiasm in reading and listening as a result of the program. Further, all teachers gave an "excellent" rating to the benefits of the Brigham Book Buddy program to their students and school.

Brown Bag Food Distribution/Adopt-a-Family Program

The Greater Boston Food Bank provides food through the Massachusetts Emergency Food Assistance Program (MEFAP), which supplies nutritionally adequate meals to low-income families. The parenting partners distribute these meals twice a month to families at the Tobin School. In FY2008, there were 19 days during which food was distributed to needy families, and an average of 25 families participated each time. Additionally, through the Adopt-a-Family program, Brigham and Women's Hospital employees donate gifts during the holiday season to some of the school's most needy families.

Longwood Medical Area (LMA)

Partnership with Health Careers Academy

In FY2008, the CCHHE provided grant support to the Health Careers Engagement project at Health Careers Academy (HCA), a Horace Mann Charter School that prepares students in the ninth through twelfth grades for careers in the health sciences. The goals of the Health Careers Engagement project are to promote student knowledge of health care professions and work sites, increase the number of HCA students who enter college programs designed to prepare them for health careers, and expand the number and variety of internships and other workplace learning experiences that are available to HCA students.

During the 2007-2008 school year, the Health Careers Engagement Project organized a guest speaker series for ninth and tenth grade students at Health Careers Academy. Twenty health care professionals presented to the students about the following fields: dentistry, emergency medicine, health care administration, health law, internal medicine, molecular research, nursing, obstetrics/gynecology, pharmacy, physical therapy, psychology, public health, radiology technology, social work, and surgical technology. Additionally, the ninth and tenth grade students made ten site visits to health work sites across Boston and 84 eleventh and twelfth grade students received internship placements with 68 percent internships in the health care field. Eighty-five ninth, tenth and eleventh grade students were given job shadowing opportunities at health care organizations and 65 students in the tenth and eleventh grades received summer placements in health-related academic enrichment and work experience programs.

Of the HCa students who graduated in 2008, 30 (46 percent) intend to pursue careers in health care and to major in health or science fields. In addition to the 20 students who intend to pursue nursing, the fields in which these students have expressed interest include: pre-medicine, biology, biochemistry, psychology, pharmacy, and speech pathology.

The Gateway Program: A Partnership with the John D. O'Bryant School of Mathematics and Science

The O'Bryant Gateway to the LMA is an educational partnership between the John D. O'Bryant School of Mathematics and Science in Roxbury and multiple institutions in the Longwood Medical and Academic Area (LMA), including BWH. The O'Bryant School is one of Boston's three examination-based public high schools, and it is unique among the exam schools in its mission to prepare Boston students to succeed in careers in science and technology.

At the O'Bryant School, the O'Bryant Gateway program provides a four-year high school pathway that focuses on career opportunities in medicine, biomedical science and the health professions. To prepare students to enter these highly competitive fields, the program fosters high academic achievement by providing the students with a supportive learning community, out-of-school time academic supports, and year-round enrichment opportunities.

In June 2008, the O'Bryant Gateway to the LMA completed its first year of classes, and 48 of the students in the program advanced to the tenth grade. In addition, 50 new ninth grade students joined the program, bringing the cohort of students enrolled in the program to 98 in September 2008. The sophomore students look forward to a rigorous science-based academic school year that will include an action research project, hospital rounds, a speaker series, a career networking event, and a college access event. The program continues to maintain strong support and commitment from the LMA institutions that include Brigham and Women's Hospital, Beth Israel Deaconess Medical Center, Children's Hospital, Dana Farber Cancer Center, Emmanuel College, Harvard Medical School, MASCO, Simmons College, and Wentworth College.

Violence Screening, Treatment and Prevention Programs

Passageway at Brigham and Women's/Faulkner Hospitals and the Health Center Domestic Violence Initiative

In May 1997, Brigham and Women's Hospital (BWH) launched Passageway, a domestic violence intervention program developed by the Center for Community Health and Health Equity (CCHHE). A hospital-wide domestic violence advisory committee identified the need for a program to develop and support coordinated, safe domestic violence interventions within BWH and in the community. The program model is based on an empowerment philosophy and is rooted in the grassroots history of the battered women's movement.

In developing Passageway, the CCHHE created a program that would both incorporate the perspectives and experiences of women and assist the hospital in integrating screening for abuse and domestic violence interventions into routine health care. In the fall of 2004, the hospital expanded Passageway to its community sites at Faulkner Hospital and Southern Jamaica Plain Health Center.

Passageway has become a leader in integrating domestic violence advocacy services and training for health professionals into the health care system. While women's shelters and domestic violence hotlines continue to provide critical emergency services for victims, placing domestic violence advocacy services within the health care setting offers additional avenues for help and for earlier intervention and prevention. Victims who may not be ready to access shelters or hotlines may still seek health care. As health care professionals become skilled in routinely screening for and identifying domestic violence, victims may benefit in numerous ways. First, the act of domestic violence screening is itself an intervention and informs patients that health care providers care about their safety and well-being. Second, the screening process and availability of an on-site domestic violence program offer victims access to services in a private setting. If a patient discloses abuse, their health care provider can refer them immediately to Passageway for safety planning and ongoing support. Third, employees can find easy access to assistance within their workplace.

Passageway strengthens the health care system's response to domestic violence and improves the safety, health, and well-being of individuals and families experiencing domestic violence through its four program components:

- **Comprehensive Advocacy Services** for patients and employees who are abused
- **Training/Education** for multidisciplinary health care providers and hospital employees
- **Community Collaboration** to ensure a strong network of services to address domestic violence within and beyond the health care setting

- **Evaluation** to support the continuous improvement of care for domestic violence victims and effective training and education programs for health care professionals

Since its inception, Passageway has responded to over 7,000 requests for advocacy services and trained nearly 10,000 health care providers and staff. In addition to working with individual clients, Passageway provides survivor support groups in both English and Spanish.

Comprehensive Advocacy Services and Consultation

Passageway provides free, voluntary, and confidential services to patients and employees who are experiencing domestic violence. Services include risk assessment and safety planning, crisis intervention, individual counseling, support groups, referrals, intervention with complex systems (e.g., health care, courts, employers), assistance in accessing resources, and education to victims/survivors in understanding their rights and options. Passageway advocates offer consultation to health care providers and hospital staff regarding screening practices, safety planning, and other issues impacting patient and employee safety. During FY2008, Passageway responded to a total of 967 Brigham and Women’s and Faulkner Hospital patients and employees experiencing domestic violence.

Demographic information on individuals served follows:

Gender of Passageway Clients

Gender	Number	Percent
Female	943	97%
Male	24	3%
Total	967	100%

Race of Passageway Clients

Race	Number	Percent
Asian	15	1.6%
African American/Black	262	27.0%
White	238	24.6%
Latino	374	38.7%
Native American	4	0.4%
Other	16	1.7%
Unknown/Unrecorded	58	6.0%
Total	967	100%

Age of Passageway Clients

Age Range	Number	Percent
17 or Under	12	1.2%
18 to 19	41	4.2%
20s	267	27.2%
30s	228	23.6%
40s	201	20.8%
50s	109	11.3%
60s	36	3.7%
70s	13	1.0%
80+	5	1.0%
Unknown/Unrecorded	55	6.0%
Total	967	100%

Primary Language of Passageway Clients

Language	Number	Percent
English	736	76.1%
Spanish	197	20.4%
Other	16	1.7%
Unknown/Unrecorded	18	1.8%
Total	967	100%

Passageway has a collaborative intervention model that includes domestic violence advocates, nurses, physicians, social workers, mental health providers, and other health care providers. Domestic violence intervention is provided at the academic medical center campus, community hospital, and health centers. The intervention model is flexible and tailored to individual needs. Services include safety planning, crisis response, counseling, education, outreach, support groups, medical advocacy, legal assistance, and referrals.

Passageway's advocates come from diverse backgrounds reflecting the populations served. The advocates offer services in English and Spanish and use hospital interpreters for all other languages. In FY2008, the Passageway advocates recorded 16,163 service contacts on behalf of all individuals assisted. The details of the service contacts are listed below:

Passageway Service Contacts

Type of Service	Number	Percent
Direct Contact with Individuals:	4,197	26%
Advocacy/Counseling	1,530	9.5%
Phone Contact	2,638	16.3%
Support Groups	29	.2%
Indirect Advocacy:	3,726	23%
Outreach and Client Follow-Up	3559	22%
Administrative	167	1%
Consultation and Collateral Contact:	8,240	51%
With a BWH Provider	6,448	39.9%
With a Community Provider	1,792	11.1%
Total	16,163	100%

This year's data represents an 11 percent increase in individuals served as compared to FY2007.

The Passageway Health-Law Collaborative

The Passageway Health-Law Collaborative is a unique legal services program within a health care domestic violence program. By conducting a full legal assessment for victims, Passageway helps victims to move beyond legal crises and identifies ways that lawyers can be proactive in their assistance with issues such as health care proxies, disabilities, insurance, access to systems and rights, housing and tenant problems, financial issues, guardianship and permanency planning for children, and others. In FY2008, the project assisted 151 victims of domestic violence through full legal representation, brief legal assistance, and consultation services. In addition, legal services partners offered monthly law clinics at Passageway to provide direct consultation and assistance to clients.

Health Center Domestic Violence Initiative

Established in 1999, the Health Center Domestic Violence Initiative is a collaborative among Passageway and Brookside, Whittier Street, and Martha Eliot Health Centers. Each health center has a domestic violence advocate supported by community benefit funding and administered through Passageway. Currently, advocates from the health centers and Passageway meet quarterly to improve communication and continuity of care for patients and to participate in resource sharing and trainings.

The Initiative's aim is to ensure consistent and safe domestic violence interventions across the health care system and increase access to support for women experiencing domestic violence. This year, there was an emphasis on advocacy practice standards and

resource sharing among the advocates. Advocates met bi-monthly to review practice issues and debrief about high-risk cases.

In FY2008, advocates at Brookside, Whittier Street, and Martha Eliot Health Centers assisted 215 women who were coping with domestic violence, and they reported 1,137 service contacts. The demographics of race/ethnicity and age are listed below:

Race/Ethnicity of Health Center Domestic Violence Initiative Clients

Race/Ethnicity	Number	Percent
African American/Black	29	13.49%
White	4	1.86%
Haitian	2	.93%
Hispanic/Latina	180	83.72%
Asian	0	0%
Unrecorded	0	0%
Total	215	100%

Age of Health Center Domestic Violence Initiative Clients

Age	Number	Percent
Under 18	4	1.86%
18 to 19	4	1.86%
20s	38	17.67%
30s	69	32.09%
40s	44	20.47%
50s	23	10.70%
60s	16	7.44%
70 and Above	0	0%
Unrecorded	17	7.9%
Total	215	100%

Training/Education for Health Professionals

This year, Passageway trainings focused on providing opportunities for in-depth training with social workers across the system. Passageway provided individual orientation sessions for social workers, training for on-call Emergency Department social workers, and training for social workers at Dana Farber Cancer Institute in addition to an annual training session for BWH MSW interns. In total, 45 social workers (including nine MSW interns) were trained. Faulkner Hospital training efforts focused on the Nursing Department and provided training on Passageway services and domestic violence intervention for 110 members of the Nursing Department, including RNs, PCAs, and Unit Coordinators.

In June 2008, Passageway participated for the first time in the BWH Housestaff Orientation, providing information and education about Passageway services to 250 incoming residents.

In addition to providing formal training, the program reached about 450 additional health care professionals through outreach and domestic violence awareness efforts. Over 200 staff participated in a hospital event with special guest speaker Diane Patrick in October called “Honoring Survivors: A Service to Reflect on the Impact of Domestic Violence.” Additionally, informational tables at BWH, Faulkner Hospital, and Southern Jamaica Plain Health Center offered opportunities for staff to get information and materials on Passageway services.

Community Collaboration

Passageway has continued to provide leadership in a number of community collaborations, including the Domestic Violence Council of the Conference of Boston Teaching Hospitals and SAGE – Boston, working to end abuse among older women and elders, and the NASW Committee on Domestic Violence and Sexual Assault. Each of these groups meet monthly with active participation with other area hospitals and over 30 community agencies represented. This year, Passageway participated and provided educational materials in the Massachusetts State House’s Health Fair with the Domestic Violence Council.

Passageway collaborates with a Boston-based, citywide health program that provides home care to people living with HIV and AIDS to reach those who are most vulnerable and in need. The program offers case consultation at a community program to provide staff with a place to discuss complex domestic violence situations that raise concerns about immediate safety for victims and for outreach workers. Passageway staff conducted two hours of intensive staff training in FY2008, and offered ongoing opportunities for domestic violence case consultation.

Passageway staff participated in other events, community projects, and conferences to strengthen collaboration, including:

- Healthy Roslindale Coalition
- Southern Jamaica Plain Health Center – Community Health Fair
- Jewish Domestic Violence Coalition
- Boston Regional Domestic Violence and Sexual Assault Providers Group
- Relationship Violence Action Council
- Jane Doe, Inc. Executive Directors Retreat
- Jane Doe, Inc., White Ribbon Day
- MA Public Health Advisory Working Group
- Department of Social Services – Hospital Working Group
- Boston Public Health Commission – Advocates Networking Group

Evaluation

Passageway developed and maintains a comprehensive database for tracking and analyzing services and for continuous quality improvement. The database enables Passageway to document the growth of the program and to identify clinical areas and departments that make referrals to the program. This information guides program development and training priorities.

Passageway administers a yearly survey to hospital staff with the goal of identifying areas for program improvement. Last year's survey was targeted towards BWH social workers, in an effort to gather their perspectives to inform future educational forums and programming and to enhance collaborative interventions. This survey generated 31 responses, which represents a 69 percent response rate. Passageway learned about key clinical practice questions and about how to focus training efforts (e.g., more content on mandatory reporting and how to intervene with abusers who may accompany victims in the health care setting). The survey findings continue to inform the hospital-wide domestic violence steering committee's activities for the year.

In an effort to assess how to better serve survivors of intimate partner abuse over age 50, Passageway facilitated a focus group in 2008 with volunteers who identified as survivors in this age group.

Passageway developed a survey tool in English and Spanish to use with women who received assistance from the Passageway Health Law Collaborative. Distribution began in the summer of 2007 and is ongoing. Feedback from women will be used to enhance the program's services. Additionally, in FY2008, an exit interview tool for collecting more in-depth information about client satisfaction was created and piloted.

Health Centers

Brookside Community Health Center

Background

Brookside Community Health Center was originally established as the Brookside Park Family Life Center in 1970, a "grass roots" program with a five year funding grant through the Model Cities Program. This grant was made in response to a proposal drafted and developed by a group of community residents, organized to address the health care needs of Jamaica Plain. The proposal clearly expressed a defined set of needs, identified in a community needs assessment, for accessible affordable health care that addressed the social and medical needs of families.

The group of local residents established itself as the center's Consumer Policy Board functioning under a set of by-laws drafted to govern the Board and its actions. The Board outlined the health center plan and hired the first staff members. The Board continues to

function as an engaged set of consumers and advisors who work directly with the health center's Executive Director and staff. The 16-seat board requires that 12 of the seats be filled by consumers who are elected annually by health center clients.

In 1974, the Brookside Community Policy Board signed an affiliation agreement with the Peter Bent Brigham Hospital and became part of the Ambulatory and Community Services Department, operating under the Hospital's License. The hospital, now the Brigham and Women's Hospital (BWH), and a founding member of Partners HealthCare System, Inc., has continued to work closely with the health center staff and Board to provide high quality services that meet the needs of the community.

Throughout its 38-year history, the health center has evolved and grown in order to meet the needs of its patients and improve the health status of the community. In 1970, after initially opening for business in a school classroom, the health center moved to four house trailers and then into a renovated parish hall basement. By 1975 the health center had settled into its current location, originally a manufacturing building leased by BWH in 1974 for 20 years from the City of Boston. The building, a one story, 27,700 sq. ft. space, was renovated in 1975 with funding from a federal government program to meet the health center needs. The building is fully handicapped accessible and on public transportation routes. The health center shared space in the building with N.I.C.E, a community-run day care program, until the summer of 1999. At that time, the Day Care relocated to a new building of its own, allowing the health center to increase its capacity and offer services in an updated and fully refurbished space.

In December of 2000, BWH purchased the property from the City of Boston. Long-planned, and much needed, renovations, including a complete overhaul of the building's infrastructure systems, were completed in May of 2003. The increase in space supported improved working conditions for staff and the delivery of high-quality care to clients. In 2006, BWH purchased two adjacent vacant lots that are to be incorporated into the health center's driveway to address the problem of substantially limited parking. As the demand for services continues to grow, a review of the clinical areas is needed in order to prepare the growing service demand and continue to ensure access. This challenge is one that continues into the coming year.

Despite the changing needs and demands, Brookside's board and staff remain committed to its mission, *"to provide high quality, family-oriented, comprehensive health care, with a focus on serving the low income population of our community, regardless of ability to pay."*

In order to meet this mission, services are provided through four direct care departments, Medical, Dental, Family Services, and WIC/Nutrition. Each of these departments is made up of a multidisciplinary team of staff. The Medical Department provides primary care in pediatrics and adult medicine, OB/GYN care, family planning, and Pulmonary services for both adults and pediatric patients. The Dental Department provides comprehensive preventive and restorative services, as well as, endodontic, periodontic, and orthodontic services to adult and pediatric patients. The Family Services Department provides

behavioral health, social services, Substance Abuse Counseling, Domestic Violence Advocacy Support, HIV health education/ prevention, and Parenting Education and support. The WIC/Nutrition Department provides nutritional assessment and counseling to adults and pediatric patients, lactation support, as well as, a supplemental food support program. An on-site laboratory, managed by Brigham and Women's Hospital's Laboratory Administration, provides services to all departments. All services provided have been developed and expanded in direct response to the presenting needs of the health center's populations. Across all departments, there are a total of 114 staff, making up 94.68 full time equivalent (FTEs) positions, including physician staff.

Each clinical department conducts an active teaching program, approved annually by the Community Policy Board. The intent of these programs is to provide an opportunity for future clinicians to experience a learning environment that is culturally appropriate and responsive to the needs of the community it serves. Each department organizes its program in a manner meant to support the primary focus of its practice while protecting against any interference with patients' access to their primary care providers.

Given the health center's focus on family, the staff of the health center has organized various cross-departmental teams for case reviews and family support planning. The goal of these teams is to ensure a holistic approach to family centered care.

The health center is open Monday, Tuesday and Thursday 8:00 am - 7:00 pm, Wednesday 9:30 am - 7:00 pm, Friday 8:00 am - 5:00 pm, and Saturday 8:30 am - 12:00 pm. To ensure access for patients, each clinical department offers same day appointments for all services. Each department in the health center is open on several statewide holidays, offering routine appointments and urgent care access in all clinical areas. As an extension of this commitment to access, a physician backed on-call system for pediatric and adult medicine is in place 24 hours a day, 365 days a year. Dentists, midwives and mental health staff are also available for phone consultation whenever the health center is closed.

Brookside services are available to all residents and workers of Jamaica Plain, as well as, residents of surrounding Boston neighborhoods. Over the past several years, due to the increasing housing costs facing many patients, a growing number of patients now reside in the greater Boston metro areas, but continue to receive their care at Brookside. The center is easily accessible by public transportation and the building is fully accessible to the handicapped.

All services are offered bilingually in English and Spanish. In addition, staff members are available as translators in Haitian, Creole, German, Russian, and Polish.

FY2008 Accomplishments

FY2008 was Brookside's 38th year of service to the community, a remarkable achievement and a testament of the high regard in which the health center is held by patients and funders. It is also a reflection of the changing health care environment within

the state that is now committed to expanding access to high quality, affordable health care for all, something Brookside has been dedicated to since it opened its doors. In that environment, throughout the year, the health center responded to the needs of those who sought assistance and adapted services and programs to ensure that needs were met and successful outcomes were achieved. This dedication is a reflection of Brookside's outstanding staff, a rare group of highly skilled and deeply committed people. There were a great number of achievements, all of which are long-lasting and important. These achievements are the direct result of staff efforts and the equally dedicated supporters. These include the health center's Community Policy Board, the Leadership and Friends of Brigham and Women's Hospital, Partners HealthCare, and our community partners.

Highlights of accomplishments include:

- Due to the outstanding commitment and hard work of every member of the health center staff, completed a record setting year of service, providing 70,422 patient visits, registered 1,218 new clients and reached a total of 10,908 unduplicated users, ensuring high quality patient care with a continued focus on coordination and collaboration to achieve successful patient outcomes.
- Generated \$8.8M in patient revenues, despite significant clinical provider vacancies over the course of the year and managed operating expenses to end the year at just 0.6 percent over budget despite skyrocketing costs of energy and other major supply lines.
- Successfully recruited and filled two new budgeted Primary Care Physician vacancies, expanding capacity and opening this service to new patients after a two year close.
- Despite staff vacancies and absences, Family Services Department, offering mental health, social services, Substance Abuse Counseling, and Domestic Violence Support, maintained their open access policy and no wait list, ensuring patients timely access to essential care.
- Brookside's Jamaica Plain WIC Program continued to be recognized as the highest ranked WIC Program in the state for its outstandingly high quality of care, including highest rates of breastfeeding and immunizations of its recipients.
- Financial Counselors met with 6,929 individuals to provide information on health care access and entitlement programs. They successfully completed close to 700 application submissions to the state for enrollment of families in Mass Health, Commonwealth Care and other state supported programs.
- Implemented Comprehensive Behavioral Health Screenings for all children up to the age of 21 and for all women of reproductive age.
- Dental Department successfully recruited a General Dentist and Periodontist (joining staff at the beginning of FY2009) to replace vacancies from this fiscal year.
- In collaboration with Dana-Farber and the American Cancer Society, conducted three on-site Mammography Screening days at Brookside, becoming the health center with the highest rate of screenings offered
- Successfully completed the rigorous application process to seek Certification by the American Diabetes Association (ADA), which will allow the development of expanded services for the growing Diabetic population served at the health center.
- WIC Program Assistants issued over \$1.7M in WIC Checks to participants, ensuring

their access to healthy and nutritious foods.

- Significantly reduced Claims Denials and Free Care claims due to efforts of Financial Counselors and Practice Secretaries to ensure accuracy of health care coverage information.
- With support from the MA Department of Public Health, initiated new efforts to reduce tobacco use in primary care patients.
- Successfully recruited a Program Manager/ Nurse Practitioner for the Teen Health Center at English High School
- Urban Youth Sports Coordinator worked in a variety of areas to increase on-site support to children.
- Expanded existing staff resources by converting Medical Record Clerk positions to Practice Secretary and Financial Counselor to increase support to clinical departments and patients.
- Maintained highly successful teaching programs in a broad array of clinical disciplines in Medicine, Nursing, Dental and Behavioral Health departments. Also participated in several administrative internship programs including the Americorps-sponsored Health Corps Internship and the Health Career Connection Programs.
- Maintained working groups with staff from Partners Finance to address claims processing issues, increase revenues, reduce errors and patient complaints.
- Continued a partnership with Children's Hospital's Neighborhood Partnership Program as we continued to focus on the mental health needs of children in our community.
- Increased external grant funding to \$ 1,111,566, an increase of \$182,851 or 19.7 percent over FY2007.
- Despite major changes to health care regulations and entitlement programs, continued to provide outstanding support to patients, increasing the number receiving financial and administrative assistance with applications for Medicaid and Free Care while increasing on-site cash collections and reducing rejections and denials of processed claims.
- In collaboration with two other Jamaica Plain Health Center and community residents, initiated a Rapid Response team to support the community in the face of violent incidents.
- Continued participation in BWH/Faulkner and Partners Psychiatry Department's Substance Abuse Team to identify initiatives to enhance patient outcomes and develop programs to meet their needs.
- Maintained extended service hours in all clinical departments, increasing utilization and diversifying patient base by offering increased access to the working families of the community.
- Took active role in the CHEERS program, as a member of the Board, as well as, participation in several task forces and exploring initiatives and community-based research projects.
- Completed restructuring of external handicap ramp to ensure access to all patients, staff, and visitors.
- Continued important projects to support the work and mission of the health center. These include: Urban Youth Connection Project, offering the increased resource of a

on-site coordinator working with providers to increase information on physical fitness programs and develop programs to address issues of obesity in youth; the Partners In Asthma Care Program, which offers the services of an on-site RN Case Manager to support the needs of asthmatic patients; and Reach Out and Read Program, providing free, age-appropriate books for all children seen for well-child visits.

Southern Jamaica Plain Health Center

Background

One of the health centers operating through the license of BWH, Southern Jamaica Plain Health Center (SJPHC), has been serving the community for 35 years. Starting as a well-child clinic in Jamaica Plain's Curtis Hall area and then moving to a Centre Street storefront, SJPHC moved to a beautiful modern facility at its current Centre Street location in 1998. The health center now serves over 10,000 patients with its comprehensive services of adult medicine, pediatrics, women's health, mental health/substance abuse services, cardiology, dermatology, nutrition, and podiatry. SJPHC's mission is to provide personal, high quality health care with compassion and respect to a diverse community. Health center providers include nine internists, five pediatricians, an obstetrician/gynecologist, midwives and nurse practitioners in women's health, a podiatrist and cardiologist, dermatologists who are part of the BWH Dermatology staff, and social workers, psychologists and psychiatrists in the mental health/substance abuse department. A bi-lingual staff of five nurses provide and coordinate services to patients. Patients made more than 45,000 sick and health maintenance visits last year, taking advantage of the health center's accessible schedule and 24-hour on-call service.

The health center augments its medical and mental health services with health education, case management, screening programs (blood pressure, diabetes, mammography, cholesterol), a Mind/Body Center that includes T'ai Chi and yoga, and a child literacy program. In addition, the health center has a long history of providing substance abuse treatment services to patients, families, and the community. Health center staff also work collaboratively with residents of the local South Street public housing development to promote the health of public housing residents.

The patient population of the health center is quite diverse, both ethnically and economically, reflecting the community in which it is situated. Approximately 52 percent of the patient population is Latino, 15 percent Black, and 33 percent White. The health center attracts many patients who have recently emigrated from the African continent, Asia, and the Caribbean Islands. Seventy-five percent of the health center staff is bilingual in Spanish to serve the patient population.

All of SJPHC's physicians are on staff at Brigham and Women's Hospital and are faculty of Harvard Medical School. All SJPHC providers are credentialed with the major managed care companies; financial assistance is available in the form of MassHealth, Children's Medical Security, and Free Care/Sliding Fee.

FY2008 Accomplishments

- SJPHC remains a major resource for access to care for the populations most at need in Jamaica Plain and surrounding communities: immigrant, Spanish-speaking, and low-income residents. The patient population has grown from 4,600 patients to over 10,000 patients since the move to the new facility in December 1998.
- Collaborating with JP Tree of Life and residents of the South Street public housing development, the tenth year of a community-building project was successfully completed, and funding was obtained for the next year of the project, with BWH/Partners HealthCare community benefit support as the lead funder. SJPHC is providing supervision to the Teen Peer Leadership Program. During the past year, the teen program continued to develop. The teens worked collaboratively to address violence within the community and to promote sexuality education. An afterschool program for younger children provides homework help and educational activities. A middle school component was added to the afterschool program to address the needs of sixth to eighth graders for positive activities after school.
- The Pediatric Department continued its participation in the Reach Out and Read program and was very successful in securing over 1,000 books for SJPHC's pediatric patients. Young patients receive a book each time they come for their well-child visits.
- SJPHC participated in major community activities such as the Jamaica Plain World's Fair and the Wake Up the Earth Festival.
- SJPHC received staff grants for health education from the Massachusetts Department of Public Health and for case management from the Boston Public Health Commission.
- The health center provided prenatal care to 160 women, and continues to be a major source of care in the community, particularly for Latinas.
- The SJPHC Community Advisory Board, made up of ten members, continued to provide input from patients and community members about SJPHC's services and programs.
- The health center participated in citywide Emergency Preparedness activities through the Boston Public Health Commission, establishing and clarifying roles of health center and staff in the event of an area-wide emergency.
- SJPHC was one of the core members of a community-wide effort to address youth violence. A Jamaica Plain Trauma Response Team was organized in 2008 and provided community responses to seven episodes of violence, primarily homicides.
- SJPHC provides families whose children are cared for at the center with assistance in enrolling their children in summer camp and enrichment programs. This is particularly geared toward families who would not otherwise have the resources or knowledge to enroll their children in these programs. The SJPHC Community Advisory Board and the Friends of Brigham and Women's Hospital provided funds to assist families with application fees and partial tuition where needed. Over 150 families took advantage of the program.

Access to Care

BWH is one of the largest providers of Health Safety Net care to people without means to pay for health care in the Commonwealth. In FY2008, nearly \$40 million worth of care was provided to more than 3,000 patients. More than one-third of these patients came from the communities of Dorchester, Mattapan, Jamaica Plain, and Roxbury. At the same time, the hospital treated nearly 5,000 patients insured under Commonwealth Care.

BWH is also a major provider of health care for patients on Medicaid, providing more than \$161 million worth of care to approximately 25,000 patients in FY2008. Nearly half of those patients were from Jamaica Plain, Dorchester, and Roxbury.

Measuring the Commitment

One way to measure BWH's commitment to the community is by the amount spent on health care services and programs. The following table calculates this in two different ways: first, according to the guidelines promulgated by the Attorney General's office and second, according to a broader definition, which considers additional components of spending or revenue loss.

Components of FY2008 Community Commitment
(in \$ Millions)
Compiled According to the Attorney General Guidelines

Community Benefit Programs		
Direct Expenses		
	Program Expenses	4.0
	Health Center Subsidies (Net of HSN Care)	10.4
	Grants for Community Health Centers	2.7
Associated Expenses		N/A
DoN Expenses		0.6
Employee Volunteerism		N/A
Other Leveraged Resources		
	Grants Obtained	1.9
	Doctors Free Care	4.8
Hospital Health Safety Net (HSN) Care		15.2
Corporate Sponsorships		0.5
Total per AG Guidelines		40.1

Components of FY2008 Community Commitment
(in \$ Millions)

Compiled According to a Broader Definition

Community Benefit Programs		
Direct Expenses		
	Program Expenses	4.0
	Health Center Subsidies (net of HSN and Payer Losses)	4.8
	Grants for Community Health Centers	2.7
	Associated Expenses	N/A
	DoN Expenses	0.6
	Employee Volunteerism	N/A
	Other Leveraged Resources	
	Grants Obtained	1.9
	Doctors Free Care	4.8
Hospital Health Safety Net (HSN) Care		20.9
Bad Debt (at Cost)		
	Hospitals	4.7
	Doctors	7.3
Medicaid Loss (at Cost)		
	Hospitals	26.2
	Doctors	14.3
Medicare Loss (at Cost)		
	Hospitals	74.2
	Doctors	43.5
Unreimbursed Expenses for Graduate Medical Education		2.3
Corporate Sponsorships		0.5
Linkage/In Lieu/Tax Payments		2.2
Total Broader Definition		214.9

Note: Where N/A is reported, it should be noted that although amounts are not available for reporting, Partners hospitals, health centers, and physicians provide substantial contributions.

Depending upon the definition used, BWH contributed between three and more than 12 percent of patient care-related expenses to the community in FY2008.

Contact Information

For questions about this report, or for more information about BWH's community benefit activities, please contact:

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Appendix D

Leasehold Division Plan

