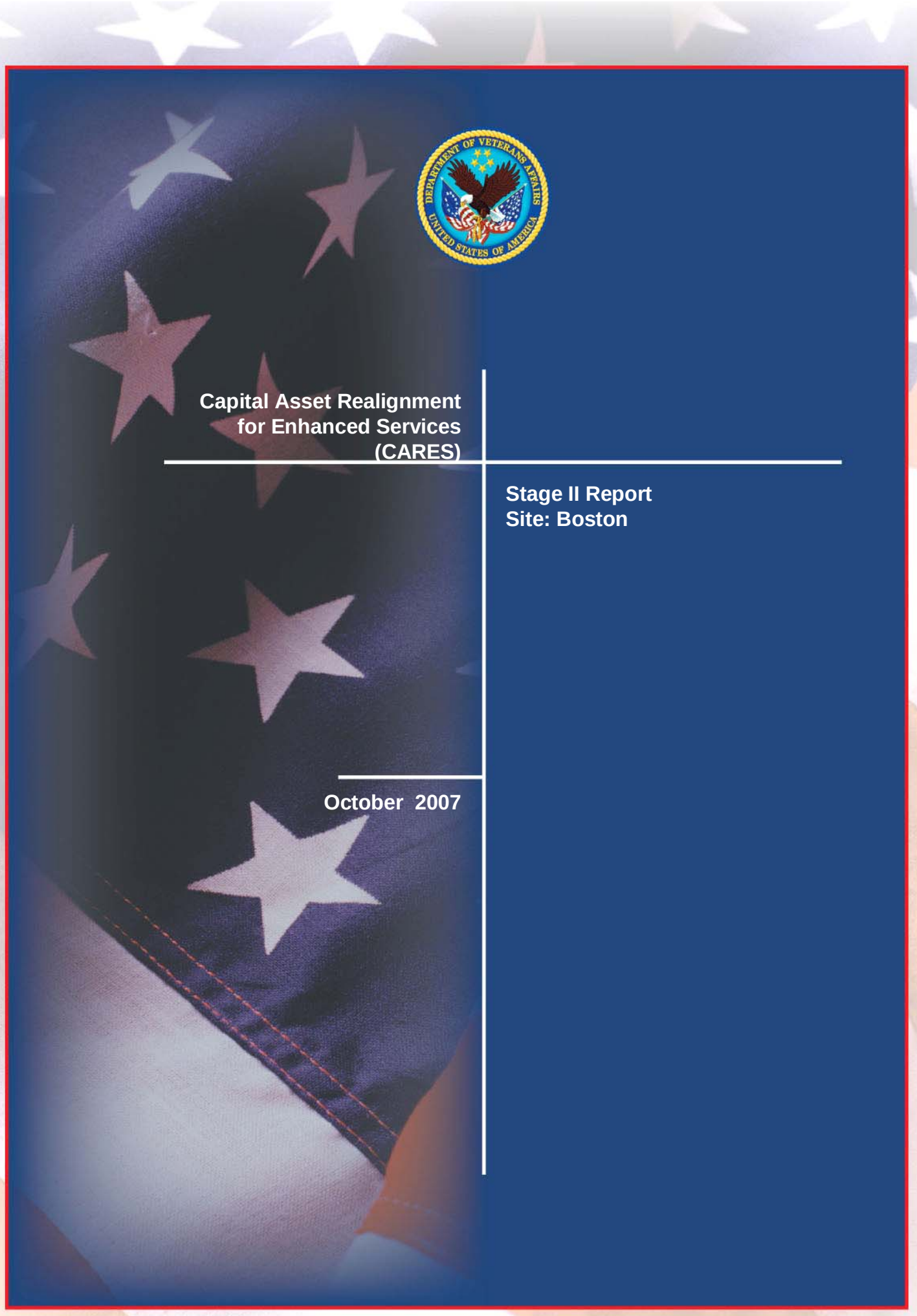

Capital Asset Realignment for Enhanced Services (CARES)

Stage II Report
Site: Boston

October 2007

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1.0 Executive Summary

Capital Asset Realignment for Enhanced Services (CARES) is VA's effort to produce a logical, national plan for modernizing healthcare facilities. The objective is to identify the optimal approach to provide current and projected veterans with healthcare equal to or better than is currently provided in terms of access, quality, and cost effectiveness, while maximizing any potential reuse of all or portions of the current real property inventory owned by VA. While most VA Medical Centers (VAMCs) have received approval to proceed with plans consistent with the CARES objectives, the Secretary of Veterans Affairs' May 2004 CARES Decision determined that additional study was necessary for the Boston Massachusetts study site.

The purpose of this report is to present the results of Stage II of the CARES study process for Boston. In Stage II, Team PwC conducted a detailed assessment of a reduced list of Business Plan Options (BPOs) selected by the Secretary in order to provide VA decision makers with an evaluation of each BPO and its relative strengths and weaknesses. A separate implementation plan featuring risk mitigation strategies will be developed for each BPO.

A number of key drivers were considered in the development and evaluation of BPOs:

- The potential to improve quality of care through the collocation of services that would result from a consolidation of campuses
- Recruitment and retention efforts may be more difficult if relocation of facilities significantly alters commute times and if facilities are not accessible via public transportation
- The Boston study site is affiliated with over 100 area institutions of higher education and research and annually provides graduate medical education programs to over 2,000 medical residents, medical students, and other allied health professionals. These education programs could be affected if length and ease of commutes between affiliates and VAMCs is compromised
- The operation of multiple VAMCs is not cost effective and thus results in a less efficient use of VA resources
- The four Boston area campuses total approximately 375 acres in urban and suburban settings which could result in significant reuse proceeds if some of this land is made available for reuse
- Significant implementation risk exists due to the complexity associated with consolidation of campuses and the level of stakeholder interest

The Secretary of VA approved the following reduced list of BPOs for detailed study in Stage II:

- BPO 1 - Baseline Option; Renovate Existing Buildings to Accommodate Demand and to Meet Modern, Safe and Secure Standards
- BPO 8 - Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain
- BPO 10 - Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury
- BPO 11 - Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area and in Downtown Boston; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain

The BPOs were compared against the Baseline option using five categories of evaluation criteria: Capital Planning, Use of VA Resources, Reuse, Ease of Implementation, and Support for Other VA Programs. Parallel to the evaluation, Team PwC solicited input from a Local Advisory Panel and other interested stakeholders regarding their comments and concerns for each BPO.

Each of these options has relative merits and varying levels of stakeholder support. The Baseline option (BPO 1) accommodates the projected healthcare demand by renovating existing buildings to meet modern, safe and secure standards, where conditions allow. Stakeholders are adamant that BPO 1 is the preferred option as it keeps services and programs at all facilities, maintains access to healthcare services for Boston area veterans, and maintains the GRECC program at the Bedford VAMC. However, the LAP was not in support of BPO 1 as it does not provide new, state of the art facilities. The Baseline has the shortest duration for the Bedford and Brockton VAMCs (6 months shorter than the other BPOs) and the shortest duration along with BPO 8 for Jamaica Plain. Because all facilities are maintained in the Baseline, it has the least impact on research programs and clinical services due to changes in location, as measured by number of research programs, annual research budget, number of resident slots and number of faculty with dual appointments. Similarly, the Baseline does not require any staff to change job sites or patients to move to other campuses. Of all the BPOs, the Baseline has the lowest likelihood for negative impact related to the size and complexity of its capital plan.

Although the Baseline renovates existing buildings to meet modern, safe and secure standards it also has the highest operating, capital investment and net present costs, and provides very limited new facilities. Additionally, the Baseline requires the most extensive renovations to historic or historically eligible buildings, and due to in-place campus renovations, will require the most complicated, and potentially disruptive, on-campus patient moves.

BPOs 8, 10 and 11 all consolidate Bedford at Brockton resulting in a new combination of the campuses. Consequently, the effect of the consolidation on the Bedford and Brockton campuses is the same in all three of these options. The duration for Bedford and Brockton in BPOs 8, 10 and 11 is slightly longer than the Baseline (by 6 months). However, since these three BPOs involve less renovation and more new construction at Brockton, they will require less time for urgent seismic corrections and provide a significant reduction in underutilized and vacant space at Brockton. In BPOs 8, 10 and 11 the consolidation of Bedford and Brockton causes the GRECC, MIRECC and animal research programs to move to Brockton, resulting in a high

likelihood for negative impact to the GRECC, MIRECC and animal research programs. However, this move will concentrate the inpatient psychiatry and nursing home patients that may participate in these programs and whom also may benefit from services provided through the Brockton Center of Excellence for the Seriously Mentally Ill. This co-location may therefore result in synergies between programs. The stakeholders and the LAP expressed strong resistance to these BPOs because of the consolidation of Bedford at Brockton.

In addition to consolidating Bedford at Brockton, BPO 8 also "right-sizes" (fits space requirements with projected utilization) Jamaica Plain and West Roxbury. BPO 8 has the shortest project duration for Jamaica Plain (along with BPO 1), but a longer project duration for West Roxbury than BPO 10. Furthermore, BPO 8 has the longest duration for urgent seismic corrections for West Roxbury and Jamaica Plain along with the Baseline. BPO 8 has a similar percentage of underutilized space at Jamaica Plain and West Roxbury as the Baseline, which is higher than BPOs 10 and 11 in which those campuses are consolidated. BPO 8 has the most vacant space at West Roxbury as compared to the other options and more vacant space at Jamaica Plain than both BPOs 10 and 11. Other than the Baseline, BPO 8 has the highest operating, capital investment and net present costs. Because BPO 8 maintains both the West Roxbury and Jamaica Plain facilities there is less impact on research and academic affiliations, than in BPOs 10 and 11, from changes in research program and clinical service location, as measured by research programs, annual research budget, number of residents and number of faculty with dual appointments.

In addition to consolidating Bedford at Brockton, BPO 10 also consolidates West Roxbury at Jamaica Plain. BPO 10 has the shortest project duration for West Roxbury of the options, but a longer project duration for Jamaica Plain than BPOs 1 and 8. In BPO 10, West Roxbury is consolidating to a new tower located at Jamaica Plain and therefore no seismic corrections are needed at either site. BPO 10 has the lowest underutilized space for all facilities except Jamaica Plain (with only 2% underutilized space at Jamaica Plain) and also eliminates the vacant space at all facilities. BPO 10 also yields the greatest potential reuse revenues of all BPOs, has the lowest operating costs and the second lowest net present cost. However, because Bedford is consolidating at Brockton and West Roxbury is consolidating at Jamaica Plain, academic affiliations and HR/staffing may be negatively affected by requiring a change in site for residents, faculty, and personnel. Therefore, BPO 10 has a higher potential for negative impact to academic affiliations and HR/staffing than BPOs 1 and 8. Additionally, BPO 10 impacts the most residents and faculty with dual appointment, has the highest likelihood of a negative impact based on off-site inpatient moves, and requires the greatest change to staffing during implementation.

In addition to consolidating Bedford at Brockton, BPO 11 also consolidates Jamaica Plain at West Roxbury. BPO 11 has the longest project duration for all campuses; however BPO 11 eliminates both underutilized and vacant space at Bedford, Brockton and Jamaica. BPO 11 presents the most obstacles to a successful execution of reuse but has the lowest capital and net present costs. Although BPO 11 requires the least amount of demolition or renovation to historic or historically eligible buildings of the options, it has a high likelihood of negative impact based on the size and complexity of its capital plan for West Roxbury and Brockton, and has the highest impact on research programs due to changes in location, as measured by research

programs and annual research budget. Additionally, aside from BPO 10, BPO 11 impacts the most faculty with dual appointments.

At the fourth LAP meeting the Special Assistant to the Secretary for CARES presented proposed alternatives to the BPOs from the Secretary that included the following features:

- The Alzheimer's Program, Nursing Home, GRECC and Outpatient Services stay on the Bedford Campus in new state of the art facilities.
- Use the Enhanced Use Leasing Program to develop a creative collaboration with the private sector to use the balance of the Bedford campus for services to veterans such as a continuing retirement care community, assisted living facilities and other compatible services.
- Consolidate inpatient mental health services at the Brockton campus from Bedford: long term psychiatry, domiciliary, rehabilitation services. This includes long-term psychiatry, domiciliary and rehabilitation services.
- Create state of art facilities at Brockton including new long term care and chronic SCI&D resulting improved continuity/quality through integration of acute and intermediate and long term mental health services.
- Consider the consolidation of Jamaica Plain and West Roxbury as a separate option. Full modernization of West Roxbury as planned in other options.
- Complete the integration of these facilities and modernize the consolidated campus at West Roxbury.

During the LAP deliberations at the conclusion of the fourth LAP meeting the LAP Chair Joyce Murphy along with other LAP members made recommendations to adopt the Secretary's alternative option.

2.0 Introduction and Background

Purpose of Report

The Capital Asset Realignment for Enhanced Services (CARES) study process consists of a planning phase and two study phases, Stage I and Stage II. In Stage I, Team PricewaterhouseCoopers (Team PwC) developed and assessed a broad range of potentially viable business plan options (BPOs) that met the forecast healthcare needs for the study sites. Based upon an initial assessment of these BPOs, Team PwC recommended up to six BPOs to be taken forward for further development and assessment in Stage II, and the VA reviewed this recommendation and selected the specific BPOs to be studied further. In Stage II, Team PwC conducted a more detailed assessment of the short-listed BPOs in order to provide VA decision makers with an evaluation of each BPO and its relative strengths and weaknesses. This report summarizes the work done by Team PwC in Stage II. A separate implementation plan featuring risk mitigation strategies will be developed for each BPO.

Project Overview

CARES is VA's effort to produce a logical, national plan for modernizing healthcare facilities. The objective is to identify the optimal approach to provide current and projected veterans with healthcare equal to or better than is currently provided in terms of access, quality, and cost effectiveness, while maximizing any potential reuse of all or portions of the current real property inventory owned by VA. While most VA Medical Centers (VAMCs) have received approval to proceed with plans consistent with the CARES objectives, the Secretary of Veterans Affairs' May 2004 CARES Decision determined that additional study was necessary for the Boston, Massachusetts Study Site.

The Secretary's Decision Document of May 2004 makes the following conclusions for Boston:

- Four existing VA Medical Centers (VAMCs) in Boston range in age from 36 to 62 years
- All require ongoing renovation and upgrades and are in need of modernization.
- Feasibility of consolidating its existing four Boston area medical centers into one state-of-the-art tertiary care facility that will act as a hub for VA healthcare in the greater Boston area
- Current fragmented nature of care across the four existing Boston area facilities.
- VA's need to remain competitive in a medical care environment where recruitment and retention of quality staff is difficult
- The system to be studied would be anchored by a state-of-the-art tertiary care medical center and would include plans for development of strategically located multi-specialty outpatient clinics and CBOCs
- The study also will analyze the demand for nursing home care services and plan to locate facilities in places that would preserve access for aging veterans and their families
- The tertiary care medical center would deliver comprehensive inpatient care services, while allowing specialty care services such as cardiology, neurology, audiology, as well as primary and special VA mental health services to spread out into the community closer to where patients live
- Supported by CBOCs, the system of care would bring VA healthcare into communities throughout the Boston area, improving access to specialty care, primary care, mental healthcare, and nursing home services

Following a period of data gathering and analysis conducted under VA-approved methodologies, Team PwC presented its Stage I report to VA. A summary of this report is available online at http://www.va.gov/cares. The report describes a total of ten options consistent with the mandates of the Secretary's May 2004 decision for the Boston study site. BPO 10 was proposed by the Local Advisory Panel (LAP) at the second LAP Public Meeting on September 27, 2005 and also met initial screening criteria. After examining the BPOs presented in the Stage I report, the Secretary determined that four BPOs (1, 8, 10, and a new BPO 11) be further analyzed in Stage II. These are further summarized in a section below.

In Stage II, the BPOs were compared against the Baseline option using a set of agreed-upon evaluation criteria that are described in the following methodology summary section as well as in the detailed Stage II methodology (Appendix B). The Baseline is the BPO under which there

would not be a significant change in either the location or type of services provided in the study site. In the Baseline BPO, the Secretary's Decision and forecasted healthcare demand and trends from the demand forecast for 2023 are applied to the current healthcare provision solution for the study site. Additionally, capital improvements required to meet modern, safe, and secure standards, where existing conditions permit, are factored into the current state assessment.

Team PwC conducted a preliminary evaluation of each BPO. In order to obtain further input into the tradeoff evaluation of the options, Team PwC convened an Independent Review Panel (IRP) to provide an in-process review of the Stage II analysis, which included a balanced review of the tradeoffs considered in developing the evaluation of each BPO. The IRP challenged and validated the assessment findings and evaluation of each BPO, with consideration of stakeholder input. The BPOs were first assessed against the evaluation criteria using a quantitative scale in order to numerically discriminate between each BPO. The evaluation results were then used by site teams and the IRP to discuss the relative strengths and weaknesses of each BPO and in turn to develop the implementation plans. This report contains the evaluation results for each BPO and a tradeoff discussion of their relative merits. The Stage II results will be presented to the Secretary to make a final decision on a set of healthcare, capital and reuse proposals for the Boston study site.

Study Drivers

Over the course of Stage I, several key factors affecting planning for the Boston study site were identified. These factors must be balanced in the development and evaluation of Business Plan Options (BPOs) for the Boston study site. They are:

- Potential to improve quality of care through the collocation of services that would result from a consolidation of campuses
- Recruitment and retention efforts may be more difficult if relocation of facilities significantly alters commute times and if facilities are not accessible via public transportation
- The Boston study site is affiliated with over 100 area institutions of higher education and research and annually provides graduate medical education programs to over 2,000 medical residents, medical students, and other allied health professionals. These education programs could be affected if length and ease of commutes between affiliates and VAMCs is compromised
- The operation of multiple VAMCs is not cost effective and thus results in a less efficient use of VA resources
- The four Boston campuses total approximately 375 acres in urban and suburban settings which could result in significant reuse proceeds if some of this land is made available for reuse
- Significant implementation risk exists due to the complexity associated with consolidation of campuses and the level of stakeholder interest

These key factors are described in further detail below.

Healthcare Quality – The baseline configuration of services provides acute inpatient care at West Roxbury, ambulatory care at Jamaica Plain, and inpatient psychiatry, nursing home, and domiciliary care at the Brockton and Bedford campuses. Additionally, the Boston study site supports multiple Centers of Excellence, including the Geriatric Research, Education and Clinical Center (GRECC), Mental Illness Research, Education, and Clinical Center (MIRECC), and Geriatric Evaluation and Management (GEM) programs located among the various campuses. The consolidation of these four campuses has the potential to improve quality through the collocation of services onto one or two campuses. Specifically, the collocation of inpatient psychiatry currently provided at Brockton and Bedford, with inpatient medicine, currently provided at West Roxbury, may have a positive effect on quality. Additionally, the collocation of the extensive diagnostic services currently provided at Jamaica Plain with other service lines at the other campuses may also have a positive effect on quality of care.

Human Resources - Consolidation of even one facility requires a significant number of FTEEs to change their work location. Commuting distance and access to public transportation may adversely affect recruitment and retention of human resources. Employees who live south of the city and work at the Brockton VAMC may be willing to commute to either of the fairly centralized campuses of West Roxbury or Jamaica Plain; however, they may not elect to travel to the Bedford campus due to traffic congestion and difficulty accessing public transportation. Similarly, employees who live north of the city and work at the Bedford VAMC may commute

to either of the two more centralized campuses in the area, but may not commute to Brockton VAMC because of the greater distance.

Education and Academic Affiliations – Medical education is a significant mission of the Boston study site, and the distance from academic affiliates is a critical assessment driver as commute times for residents and other trainees, as well as jointly appointed faculty, can negatively affect affiliate relationships.

The majority (two-thirds to three-quarters) of all residents with BHS and the majority of trainees at Bedford are from either the Boston Medical Center (Boston University School of Medicine) or Harvard (including its affiliates). Additionally, the overwhelming majority of physicians at BHS and Bedford are faculty at the affiliate organizations which may require them to commute between the affiliate and the VAMC.

Boston Medical Center and Harvard Medical School are between 20 to 25 miles from both Bedford and Brockton, approximately seven or eight miles from West Roxbury, and only between one to three miles from Jamaica Plain. Interviews with Boston study site personnel indicate that commute times for residents and faculty greater than 30 minutes between an academic affiliate and a VAMC may have a negative effect on the education program. Leaders of the BHS education programs have indicated that it is already somewhat difficult for medical residents to travel to West Roxbury VAMC when working 80 hours a week. Therefore, the geographic relation and any increases to commute times between the affiliates and the VAMCs should be considered in evaluating the various options for the Boston study site.

Use of VA Resources – Boston operates four separate VAMCs in the study site's service area. This operational model is not cost effective as it necessitates the duplication of fixed direct and indirect costs such as utilities, maintenance, and administration costs. Boston also provides inter-facility transportation between the site facilities for patients and family members which currently results in a significant expenditure annually. Not only are multiple facilities costly to operate, they also will be expensive to renovate in order to meet modern, safe, and secure standards as set forth in the baseline. Thus, a reduction of VAMC facilities through consolidation of services and campuses may result in more efficient use of VA resources.

Reuse of Property – Each of the Boston campuses have characteristics that make them potentially attractive for reuse or redevelopment. The Brockton campus has a number of positive characteristics that make the campus attractive for redevelopment, including proximity to major state highways, visibility from a well-trafficked road, an established intra-site road network, a significant amount of land area, a relatively flat topography, and a variety of adjacent land uses that lend themselves to multiple reuse opportunities. Reuse opportunities for Brockton include light industrial, retail, and residential. Jamaica Plain is a dense, urban campus with potential for a major urban infill project in a city where developable land is scarce and expensive. The campus's positive attributes include proximity to downtown Boston and the Longwood Medical and Academic Area, access to light rail via the Massachusetts Bay Transportation Authority (MBTA) Green Line, location in a revitalizing neighborhood, on-campus structured parking, and potential to adaptively reuse the main hospital building. West Roxbury has good street visibility and access from two well-trafficked roads allowing for residential or retail reuse. Bedford,

although limited by narrow roads and adjacency to wetlands, allows for potential reuse for residential or senior care.

Ease of Implementation – Because of the complexity of the Boston study site (e.g., multiple facilities, significant stakeholders in research, and graduate learning and education, etc.), the implementation of any BPO, including the baseline, is lengthy and is characterized by significant implementation risk. All of the BPOs, other than the baseline, include the consolidation of at least one and often multiple facilities. A consolidation of inpatient services would result in the redirection of a minimum of 150 projected beds, while a consolidation of ambulatory and outpatient services would result in a minimum redirection of approximately 70,000 projected clinic stops (excluding diagnostics). Therefore, the BPOs developed for the Boston study site have significant implementation risk per the select risk categories. Specifically, risk is associated with the following major risk categories:

- Reputation, since proximity to research collaborators and academic affiliates may compromise VA's image as a research and education-driven organization
- Security, since the consolidation to a single campus in a major metropolitan area reduces the flexibility to effectively respond to emergencies
- Organization and change management, since a consolidation also involves the relocation of several VAMC staff
- Infrastructure, since the ability to secure a large enough parcel of real estate on which to build a single new facility could present a significant obstacle to implementation, and the size of the consolidated facilities may be dissimilar to surrounding structures
- Compliance, as zoning and environmental remediation requirements may pose hindrances to implementing reuse options
- Political, as capital and reuse options may not be favored by the local constituencies
- Project realization, since baseline renovations are scheduled to be completed over eight years and may be prone to delays, additional resource needs, and budget variance

Therefore, the ease of implementation of the BPOs should be considered in the selection of those to be studied further.

Summary of Stage I BPOs

BPOs Recommended for Further Study

The BPOs recommended for further study are similar in key areas. All of them would:

- Consolidate at least one of the VAMC campuses onto another campus
- Right-size the campus for future demand, and achieve modern, safe, and secure facilities through renovation, consolidation, or new construction
- Ensure forecasted need is appropriately met, especially for such specialized services as chronic spinal cord injury services that are not provided for in the community
- Are characterized by significant implementation risk

BPO 1:
Baseline: The current state as projected out to 2013 and 2023 without any changes to program except as indicated in the Secretary's Decision. Renovation and maintenance of existing buildings will occur to provide for a modern, safe, and secure healthcare environment, where conditions allow.

BPO 8:
Consolidate Bedford and Brockton at West Roxbury; Consolidate Inpatient, Ambulatory Care, and Research at Jamaica Plain; Build New CBOCs at North Shore and South Shore: All services currently located at Bedford and Brockton will be consolidated at the West Roxbury campus.

BPO 10:
Consolidate West Roxbury at Jamaica Plain; Reuse West Roxbury; Right-Size Brockton and Bedford: All services currently located at West Roxbury will be closed and moved to the Jamaica Plain campus.

BPOs Not Recommended for Further Study

All of the BPOs which Team PwC eliminated from further consideration also involved consolidating a subset of the Boston campuses; however, they did not yield positive assessments with respect to the assessment drivers.

Secretary's Decision for Stage I

The following is the text of the July 2006 press release of the Secretary's decision for Boston.

WASHINGTON - After a detailed, two-year examination of its Boston operations, the Department of Veterans Affairs (V A) has rejected a proposal to close its four Boston hospitals and create a single medical center for the metropolitan area.

"V A is committed to continuing world-class medical care that is convenient and accessible for Boston-area veterans," said the Honorable R. James Nicholson, Secretary of Veterans Affairs. "V A will provide veterans with the care they need in the locations that make sense."

The Secretary rejected consolidating all health care services at one location during the initial examination and has called for further study of several other options to modernize its facilities to meet the future needs of Boston veterans. Additional options include:

- *Shifting inpatient psychiatry and long-term care from VA's Bedford facility to its Brockton medical center, while retaining outpatient care at Bedford; and*
- *Consolidating at either the Jamaica Plain or West Roxbury facilities the services currently divided between these sites.*

Ensuring state-of-the-art care will be a key component of the studies. Once information is developed on these options, Nicholson said VA will solicit additional input during future public meetings by the local advisory panel to assist in developing a final plan to modernize services for Boston veterans.

Nicholson's announcement comes after reviewing input from veterans groups, academic affiliates, labor unions, employees and other stakeholders, along with the recommendations of a local advisory panel that has held public meetings.

Full Description of Stage II BPOs

Following the Secretary's Stage I decision announcement, Team PwC met with local VA representatives to review each BPO selected by the Secretary for further study. The purpose of these meetings was to:

- Understand the Secretary's recent decisions
- Clarify the Secretary's decision regarding changes to healthcare service delivery, facilities and availability of land/buildings for reuse
- Refine the BPO descriptions and site maps to take into account any information concerning the facility or the application of Stage II study assumptions
- Clarify the BPO descriptions for ease of understanding and consistency

The refined BPOs descriptions for the options being considered for Boston in Stage II are the following:

Table 1: Stage II BPO Descriptions

BPO 1: Baseline The current state as projected out to 2013 and 2023 without any changes to program except as indicated in the Secretary's Decision. Renovation and maintenance of existing buildings will occur to provide for a modern, safe, and secure healthcare environment, where conditions allow. The Bedford, Jamaica Plain and West Roxbury campuses will be renovated in existing buildings for projected workloads. Brockton will construct a new inpatient building to house the chronic spinal cord injury program while renovating existing structures. The Causeway CBOC will remain. While there may be reuse potential of underutilized land and vacant buildings, reuse was not studied under this BPO.
BPO 8: The Bedford campus will be consolidated to Brockton while a new CBOC will be established in the Bedford area. The Jamaica Plain and West Roxbury campuses will be re-sized for the projected workloads. The inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure while retaining newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI&D unit, and returning veterans' services. Services currently located at the Jamaica Plain and West Roxbury campuses will remain within the VA Boston Healthcare System (BHS). Ambulatory surgical services and related specialties will be relocated from Jamaica Plain to West Roxbury. West Roxbury will be right-sized by renovating existing buildings and constructing a multi-story addition to Building 2 as well as a new parking structure. Jamaica Plain will be right-sized by incorporating campus functions into existing buildings and constructing additional parking. Services from the Causeway CBOC will be provided at Jamaica Plain. Note: As a result, all of the Bedford campus and a portion of the Jamaica Plain campus will be made available for reuse.

BPO 10:

The Bedford campus will be consolidated to Brockton while a new CBOC will be established in the Bedford area. The West Roxbury campus will be consolidated into Jamaica Plain.

The inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure while retaining newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI&D unit, and returning veterans' services.

Services currently located at West Roxbury will be consolidated onto the Jamaica Plain campus. The consolidation of West Roxbury to Jamaica Plain in this BPO provides for an understanding of the impacts that would occur in relocating the inpatient services currently located at West Roxbury. Primary care and some specialized ambulatory services will also be relocated throughout BHS CBOCs and remaining VAMCs from West Roxbury, as appropriate. The consolidation will be accomplished through the replacement of Building 1 on the Jamaica Plain campus with new construction of three buildings that will form the new tower. Special needs of educational and research programs along with additional parking as needed, will be incorporated. Space will need to be leased to accommodate primary care, behavioral health, wet lab, research and administrative services and to contract out services for outpatient specialty care during construction at Jamaica Plain. Once construction is complete, all patients will be able to move back to the newly built tower from their temporary locations. Additionally, services from the Causeway CBOC will be provided at Jamaica Plain.

Note: As a result, all of the Bedford campus and West Roxbury campus will be made available for reuse.

BPO 11:

The Bedford campus will be consolidated to Brockton while a new CBOC will be established in the Bedford area and in an urban setting in downtown Boston. The Jamaica Plain campus will be consolidated into West Roxbury.

The inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure while retaining newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI&D unit, and returning veterans' services.

Services currently located at Jamaica Plain will be consolidated onto the West Roxbury campus. Primary care, some specialized ambulatory services, and outpatient mental health may be relocated to BHS CBOCs, as appropriate. The consolidation will be accomplished through the renovation of Buildings 1, 2, and 3 along with the construction of two new multi-story additions behind Building 1, allowing for its historic façade to remain. Special needs programs of educational and research programs along with additional parking as needed will be incorporated. Services from the Causeway CBOC will be provided at an urban CBOC in the downtown Boston area including methadone treatment as well as primary care and ambulatory mental health.

Note: As a result, all of the Bedford campus and Jamaica Plain campus will be made available for reuse.

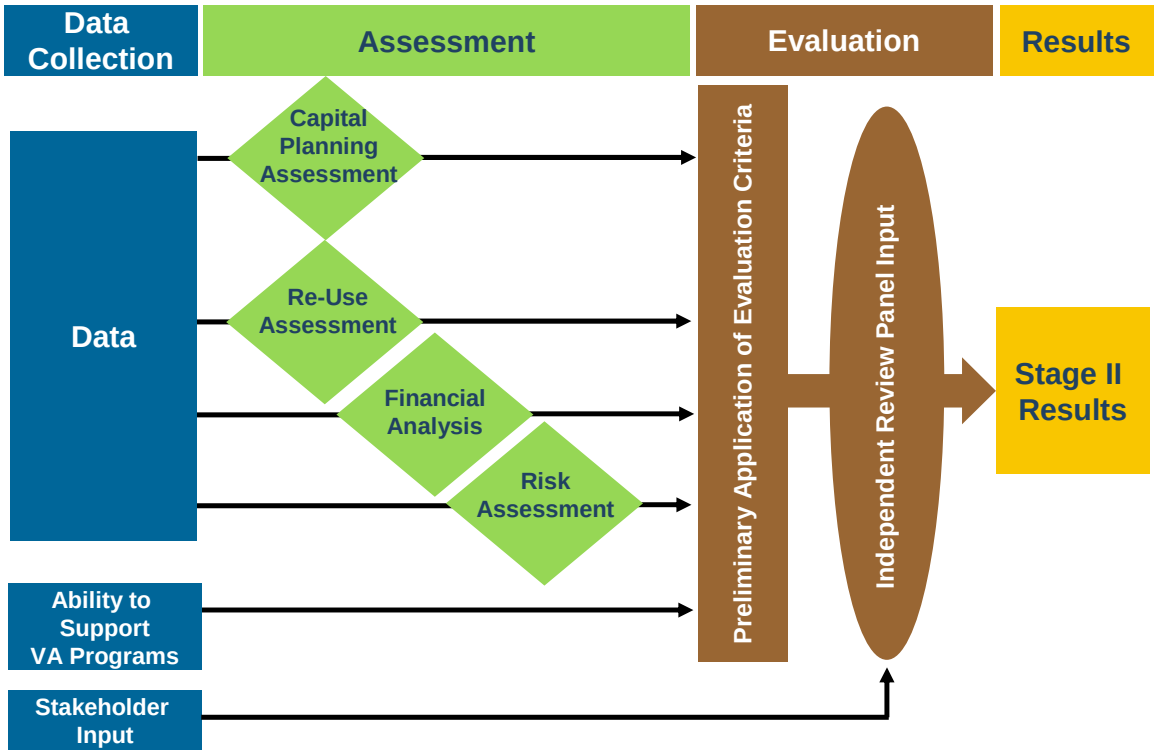
3.0 Summary of Stage II Methodology

Overview

This section provides an overview of the methodology employed by Team PwC in Stage II of the CARES study. The detailed Stage II Study Methodology is included in Appendix B of the report. In Stage II, Team PwC conducted a more detailed assessment of the BPOs selected by the Secretary for further study. Team PwC collected additional data on a set of evaluation criteria and conducted additional capital planning, reuse, and financial analysis for each BPO. The results are used to assess each BPO and to evaluate the relative strengths and weaknesses of each BPO.

The Stage II study process consists of four primary steps, Data Collection, Assessment, Evaluation, and Stage II Results, as depicted in Figure 1.

Figure 1: A diagram of the Overview of Stage II Methodology



The data collection process was used to augment study data gathered in Stage I. This data provided the inputs to the BPO assessment. Parallel to the data gathering activities, Team PwC solicited input from stakeholders on their comments and concerns for each BPO.

The Assessment step involved conducting more detailed analyses of the short-listed BPOs across each evaluation category.

During the Evaluation step the BPOs were compared against the Baseline option using five categories of evaluation criteria:

Capital Planning
Use of VA Resources
Ability to Support Other VA Programs
Reuse
Ease of Implementation

The following table lists the criteria used to measure each evaluation criteria together with the indicators.

Table 2: Stage II Evaluation Criteria and Indicators

Evaluation Criteria	Indicator
Capital Planning	
Timeliness of completion	Total duration (Years to complete)
Timeliness of urgent corrections	Duration (Years to correct code deficiencies, focusing on seismic deficiencies as identified in the CAI)
Consolidation of underutilized space	% Underutilized space
Consolidation of vacant space	% Vacant space
Reuse	
Market potential for reuse	Market potential for reuse
Financial feasibility	Financial feasibility
VA mission enhancement	VA mission enhancement
Execution risk	Execution risk
Use of VA Resources	
Total operating costs	Total operating costs ($)
Total capital investment costs	Total capital investment costs ($)
Net present cost	Net present cost ($)
Total considerations	Total considerations (reuse revenues, in-kind, etc.) ($)
Total annual savings	Total annual savings ($)
Ease of Implementation	
Academic affiliations / education	Number of research programs impacted
	% annual research budget impacted
	Number of residency programs and residents impacted
	Number of faculty with dual appointments impacted
HR / Staffing	Change in staff (FTEEs)
	Number of staff required to change job site (FTEEs)
Reuse considerations	Community support
	Legal / regulatory
Capital planning considerations	Size and complexity of capital plan
	Number and frequency of patient moves (quantity of clinical buildings altered)
	Number of historic buildings altered (total historic buildings altered)
Ability to Support Other VA Programs	
DoD sharing	MOUs impacted by BPO
One VA integration	VBA and NCA impacted by BPO
Specialized VA programs	Specialized Care/Center of Excellence impacted by BPO
Enhancement of services to veterans	Services in kind

Team PwC conducted a preliminary evaluation of each BPO. To obtain greater input into the tradeoff evaluation of the options, Team PwC convened an independent review panel (IRP) to provide an in-process review of the Stage II analysis, including a review of the strengths and

weaknesses that were identified for each business plan option. The IRP challenged and validated the assessment findings and evaluation of each BPO. The BPOs were evaluated against the evaluation criteria using a quantitative scale in order to discriminate between the BPOs. The evaluation results were used by site teams to discuss the relative strengths and weaknesses of each BPO.

Implementation plans will be developed for all Stage II BPOs. The purpose of each plan will be to provide a roadmap for the local site teams for implementing the BPO, noting critical transition and implementation activities. The plan will highlight key milestones associated with implementation functions such as budgeting and funding, procurement, contracting for care, construction, human resource transition, as well as building activation and occupancy. The plan will help to appropriately sequence the implementation activities accounting for dependencies among the various functions.

This report contains the evaluation results for each BPO and a tradeoff discussion of the strengths and weaknesses of each BPO. The Stage II results will be presented to the Secretary to make a final decision on a set of capital and reuse proposals.

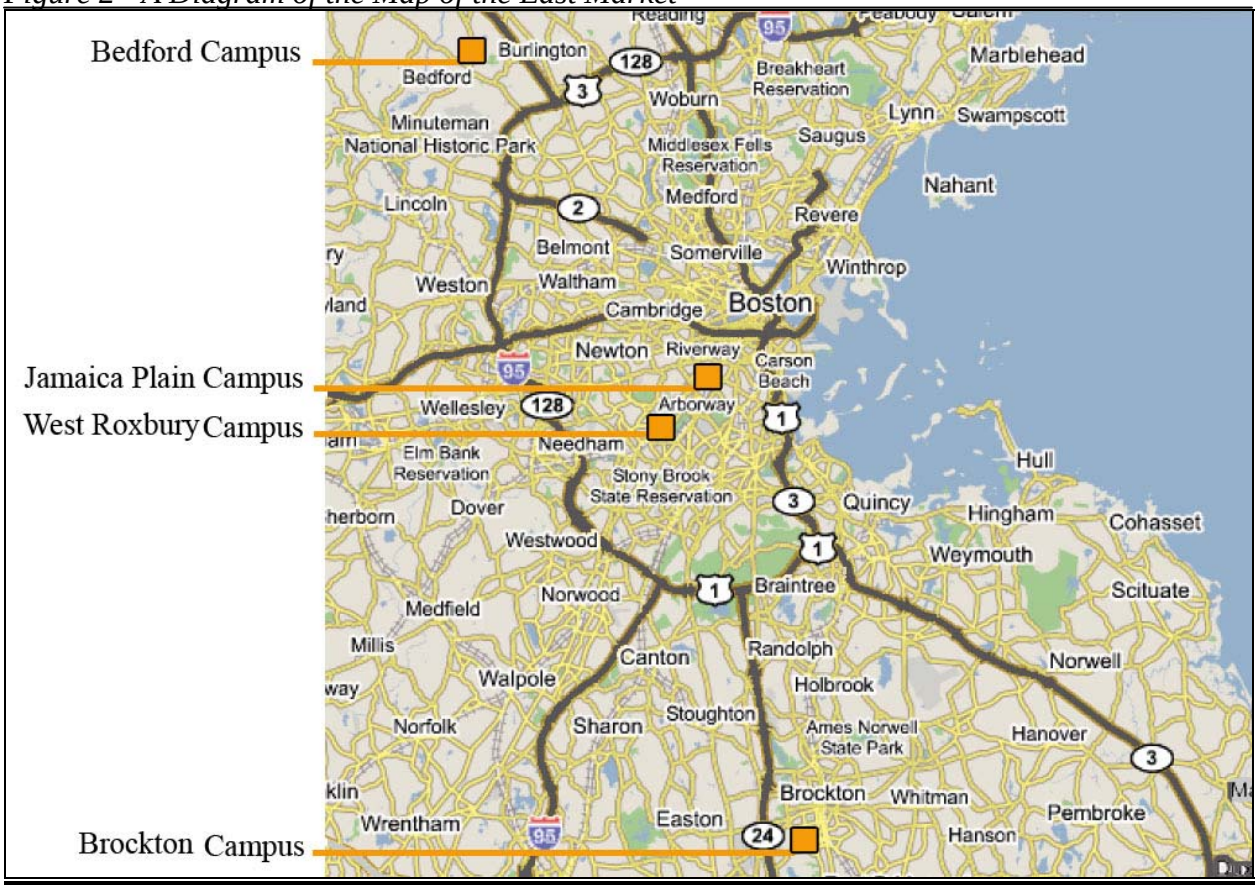
4.0 Healthcare Analysis

In addition to a Capital and Reuse Analysis, a Healthcare Analysis was completed for the Boston study site. The objective of the Healthcare Analysis was to determine the type and volume of services needed for 2013 and 2023 and the best location for these services balancing access, cost, and quality. This assessment includes the currently available healthcare services in the study area, emerging practice and technology trends, and the current and projected enrolled veteran population characteristics and utilization impact on future service needs. For each of the BPOs considered for further study in Stage II, the Healthcare Analysis considers which services would move between each of the campuses at the Boston study site.

Current Healthcare Provision

The Boston Healthcare System (BHS) is the largest consolidated facility in VISN 1 and encompasses nine healthcare sites within a 40-mile radius of the greater Boston area. The system consists of three main medical centers, the Jamaica Plain VAMC, located in the heart of Boston's Longwood Medical community; the West Roxbury VAMC, located on the southwest edge of Boston; and the Brockton VAMC, located south of Boston in the city of Brockton. In addition to the three main medical centers, the system also includes CBOCs. These CBOCs are located throughout the greater Boston area. CBOCs associated with this system include Causeway Street, Worcester, Framingham, Lowell, Quincy/South Shore, and Dorchester. The Bedford VAMC, or the Edith Nourse Rogers Memorial Veterans Hospital, is an independent hospital in VISN 1 and not part of the BHS. The Bedford VAMC is located in a suburban setting approximately 15 miles northwest of Boston. This medical center manages five CBOCs located in Gloucester, Lynn, Haverhill, Winchendon and Fitchburg. The following figure illustrates the location of the four VAMCs within the Boston study site.

Figure 2 - A Diagram of the Map of the East Market



Boston Healthcare System

The Brockton VAMC offers other inpatient mental health programs (141 beds) and psychiatry and substance abuse programs (50 beds), nursing home care services (151 beds), a chronic spinal cord injury (SCI&D) unit (30 beds), a domiciliary for homeless veterans (70 beds), and comprehensive primary care. Deemed a Center of Excellence within the VA system for seriously mentally ill veterans, the Brockton VAMC provides extensive inpatient and outpatient care for acute and chronically ill psychiatry and substance abuse veterans. The Brockton VAMC is also a referral center for women veterans across the VISN, offering a complete spectrum of dedicated women's health services ranging from a state-of-the-art outpatient health center to an inpatient psychiatry unit, one of only four women-only units nationally in VA. The VAMC also includes a limited hour urgent care center for residents of the campus. Emergency care and after-hour urgent care services are referred to neighboring community hospital providers. There are no CBOCs associated with the Brockton VAMC.

The West Roxbury VAMC serves as the medical and surgical inpatient care referral center and provides tertiary for all VAMCs in VISN 1. West Roxbury offers inpatient medicine and observation services (83 beds), inpatient surgery services (64 beds), and acute spinal cord injury services (30 beds). West Roxbury has been recognized as a Center of Excellence within the VA system for both its cardiac surgery and its spinal cord injury programs. Serving as the regional referral center for intensive inpatient surgery, the West Roxbury VAMC also offers general and

specialized surgery. There is a 24-hour Level II Trauma Center and emergency department on campus along with urgent care services. There are no nursing home or inpatient mental health beds in operation at West Roxbury. The Worcester CBOC is associated with the West Roxbury VAMC.

Jamaica Plain serves the urban veteran population of Boston. As the network hub for ambulatory care, Jamaica Plain offers primary care and outpatient specialty services such as audiology and ophthalmology. This VAMC also has the National Center for Post Traumatic Stress Disorder outpatient program, and is home to the Massachusetts Veterans Epidemiology Research and Information Center (MAVERIC). There is an urgent care center on campus; however, patients who require emergency care and after-hour urgent care services are referred to neighborhood community hospital providers or to the West Roxbury VAMC. All inpatient services were moved from Jamaica Plain prior to this study. The VAMC is located a short distance from Harvard Medical School and several other academic medical centers. The CBOCs associated with this VAMC are Causeway Street, Framingham, Quincy/South Shore, Lowell, and Dorchester.

Edith Nourse Rogers Memorial Veterans Hospital, referred to as the Bedford VA Medical Center

The Bedford VAMC offers primary care, nursing home care (274 beds), acute inpatient psychiatry care (21 beds), inpatient mental health programs (92 beds), a domiciliary (50 beds), substance abuse treatment, and is home to the Geriatric Evaluation and Management (GEM), Geriatric Research, Education and Clinical Center (GRECC), and Mental Illness Research, Education and Clinical Center (MIRECC) programs, which is a research and clinical inpatient and outpatient program for the care and treatment of veterans with dementia and Alzheimer's disease. Ambulatory services and outpatient mental health services are provided. Enrollees are referred to local hospitals for electroconvulsive therapy (ECT), mammography services, and emergency services. Limited special and acute care services are provided on campus. All other inpatient services were moved to West Roxbury prior to this study. Patients needing emergency care and urgent care services are referred to neighboring community hospital providers. Additionally, this medical center manages five CBOCs located in Gloucester, Lynn, Haverhill, Winchendon and Fitchburg. The Bedford VAMC also provides mental health services at the Lowell CBOC, which is organized under Jamaica Plain.

Access

Access is one of the CARES criteria (along with quality and cost effectiveness) and was assessed in the Stage I study. All of the BPOs considered for further study in Stage II passed the initial access screening criteria and either maintain or improve access to services.

Analysis of drive time information for enrollees in the East market indicates that VA's drive time guideline is met for primary care, acute care, and tertiary care (see Table 3). Drive time guidelines at the market level are as follows: 70% of enrollees for primary care and 65% of enrollees for acute hospital and tertiary care should be within the minimum travel times to a VA facility.

Currently in the VISN 1 East market, 96% of the enrollees meet the primary care access guideline. For acute hospital care access, the market also exceeds the guideline, with almost 87% of the enrollees meeting the threshold. For tertiary care, 100% of the veterans residing within the East market are within the access guideline.

Table 3: Percentage of Enrollees Meeting VA Access Guideline Drive Times for the East Market

VA Drive Time Guidelines					
Primary Care		Acute Hospital		Tertiary Care[1]	
Current Level	**Meets Threshold**	**Current Level**	**Meets Threshold**	**Current Level**	**Meets Threshold**
96%	**Yes**	**87%**	**Yes**	**100%**	**Yes**

Quality

Quality is also one of the CARES criteria (along with access and cost effectiveness) and was assessed in the Stage I study. Each of the BPOs considered for further study in Stage II passed the initial quality screening criteria and either maintains or improves quality of services. All programs, services and faculty will be maintained in each of the BPOs.

The measures listed below provide a selective description of current healthcare clinical quality at the Boston study sites, along with corresponding results at the VISN and national levels. This set of measures was chosen by PwC and VA experts based on available internal VA data, and compatibility with Centers for Medicare and Medicaid Services (CMS) and industry standard reporting. The primary purpose of these quality measures in relation to the CARES healthcare study is for use as a benchmark in comparison to the various BPOs, to determine any significant quality impacts. Although the quality measures gathered for analysis are based on 2004 data, for the evaluation of quality of care for the year 2023, Team PwC assumes a linear relationship with this current data. Quality data is reported for both BHS and Bedford. The quality data is aggregated for the BHS and cannot be disaggregated by campus.

[1] Tertiary care data is based on 2001 figures. All other information is based on 2003 figures.

According to 2004 data, BHS achieved the following for select quality scores as compared to both VISN and overall national scores:

- Higher or comparable scores for inpatient care, ambulatory care, mental health (global index), nursing home (pressure sores), and patient satisfaction (ambulatory care).
- Lower scores for mental health (major depressive disorder), nursing home (physical restraint), and patient satisfaction (inpatient care).

Bedford achieved the following for select quality scores as compared to both VISN and overall national scores:

- Higher or comparable scores for ambulatory care, mental health, and patient satisfaction.
- Lower scores for nursing home

Table 4: Quality Measures

Clinical Setting	Indicator	Indicator Origin	BHS (#523) '04 Result	Bedford (#518) '04 Result	VISN #1 '04 Result	National VA '04 Result
Inpatient Care						
Heart Failure	Ace inhibitor for left ventricular dysfunction as a key inpatient measure	VA, CMS[2]	**92%**	**NA (no IP medicine)**	**94%**	**93%**
Ambulatory Care						
Colorectal Cancer	Screening rate	VA, HEDIS[3]	**81%**	**77%**	**77%**	**72%**
Endocrinology	Full lipid profile in the past two years	VA, HEDIS	**95%**	**90%**	**90%**	**96%**
Mental Health						
Major Depressive Disorder	% of patients with a new diagnosis of depression -- medication coverage	VA, HEDIS	**61%**	**67%**	**71%**	**67%**
Global Index	Weighted average of seven mental health indicators[4]	VA	**56%**	**65%**	**58%**	**54%**
Nursing Home Care						
Nursing Home Care	% of high risk patients with pressure sores	VA, CMS	**27%**	**15%**	**22%**	**22%**
Nursing Home Care	% of residents physically restrained	VA, CMS	**0%**	**0%**	**3%**	**1%**
Patient Satisfaction						

[2] CMS stands for Centers for Medicare and Medicaid Services.

[3] HEDIS stands for Health Plan Employer Data and Information Set, which is a set of standardized performance measures used to compare performance of managed health care plans.

[4] See Glossary for description of indicators.

Clinical Setting	Indicator	Indicator Origin	BHS (#523) '04 Result	Bedford (#518) '04 Result	VISN #1 '04 Result	National VA '04 Result
Ambulatory Care	% of surveyed patients rating overall Ambulatory Care Services as very good or excellent.	VA, Industry	**81%**	**77%**	**77%**	**76%**
Inpatient Care	% of surveyed patients rating overall Inpatient Services as very good or excellent.	VA, Industry	**73%**	**87%**	**87%**	**74%**

All BPOs selected for Stage II study either meet or exceed the CARES objectives of access and quality.

Human Resources

The four hospitals in the Boston study site employ a total of approximately 3,665 full-time employee equivalents (FTEEs) including 378 physicians; 1,748 clinical staff; and 1,538 administrative staff.

The Bedford VAMC has an estimated staff of 789 FTEEs. Most of the employees are recruited locally, and live within a 30-minute drive of the campus. Wages are considered to be average, but employees perceive that the good job security and competitive benefits make it an attractive place to work.

The Brockton VAMC employs approximately 909 FTEEs. This VAMC recruits from the local community, as well as south of Brockton. Brockton is part of the BHS, and compensation is considered better than most employers in the local community. Therefore, it is fairly easy to recruit employees to the Brockton VAMC and there are many long-term employees who have worked at the hospital for 15 years or longer.

The West Roxbury VAMC has approximately 1029 staff members, and the Jamaica Plain VAMC has approximately 938 FTEEs. The demographics of the staff are similar at these two campuses, but recruiting is more difficult since they are forced to compete with other Boston hospitals for local talent.

It should be noted that consolidation of even one facility requires a significant number of FTEEs to change their work location. Commuting distance and access to public transportation may adversely affect recruitment and retention of human resources. Employees who live south of the city and work at the Brockton VAMC may be willing to commute to either of the fairly centralized campuses of West Roxbury or Jamaica Plain; however, they may not elect to travel to the Bedford campus due to traffic congestion and difficulty accessing public transportation. Similarly, employees who live north of the city and work at the Bedford VAMC may commute to either of the two more centralized campuses in the area, but may not commute to Brockton VAMC because of the greater distance.

Research and Education

Biomedical research is core to the mission of the Boston study site and each of the four VAMC's currently support research programs. These research programs are some of the largest programs of any site in the system strengthened by collaboration efforts between the Boston study site and numerous area research partners. The research programs are comprised of clinical, basic science (wet lab), and animal related research across a number of disease areas. Research interests cross a variety of fields including mental illnesses, alcoholism, gastrointestinal disorders, cardiology and cardiovascular diseases, hematology, pulmonary medicine, urology, neurology, spinal cord injury, hemostasis, aphasia, language and memory disorders, post traumatic stress disorder (PTSD), and infectious diseases. Additional information about the Boston study site research programs can be found in the Ease of Implementation Chapter (Section 8).

In addition to the vast research portfolio, the Boston study site also has a strong academic mission characterized by residency programs across a number of specialties. The VAMCs depend on their residency training programs to attract and retain clinicians interested in training programs and the quality of care which is customary to teaching hospitals. Additionally the Boston VAMCs' on-going involvement and proximity to several of the neighboring medical schools has fostered medical faculty who hold multiple appointments. All four VAMCs house faculty with appointments at medical schools. The detailed assessment of the Boston study site education programs can also be found in the Ease of Implementation Chapter (Section 8).

Overview of Healthcare Demand and Trends

Veteran enrollment and utilization for healthcare services was projected for 20 years, using 2003 data as supplied by VA as the base year and projecting through 2023. Projected utilization data is based upon market demand allocated to the Boston facilities. The following section describes these long-term trends for veteran enrollment and utilization for healthcare services at the Boston facilities.

Enrollment Trends

As of 2003, approximately 131,000 enrolled veterans resided in the East Market of VISN 1. Over the next 20 years, the number of enrolled veterans for this market is expected to decline 25% to approximately 98,500.

Enrollment projections for the market differ by priority group. Enrollment of Priority 1-6 veterans (those veterans with the greatest service-connected needs) is projected to decrease by 9% by 2023, while enrollment for Priority 7-8 veterans is projected to decrease by 58% for the same period (see Table 5). The enrollment forecast for Priority 7-8 veterans assumes an annual enrollment fee, and the continued freeze on P8 enrollment.

Table 5: Projected Veteran Enrollment for the East Market of VISN 1 by Priority Group

Fiscal Year	2003	2013	% Diff	2023	% Diff
Priority 1-6	87,970	97,220	11%	80,338	-9%
Priority 7-8	43,272	25,102	-42%	18,245	-58%
Total	131,242	122,322	-7%	98,583	-25%

Utilization Trends

Utilization data was analyzed for those CARES Implementation Categories (CICs) for which the Boston VAMCs have projected demand. A summary of utilization data is provided for each CIC in the following tables. Acute inpatient utilization is measured in number of beds, while both ambulatory and outpatient mental health utilization is measured in number of clinic stops. A clinic stop is a visit to a clinic or service rendered to a patient.

Considering overall demand for inpatient and outpatient services (Table 6) outpatient clinic stops (including radiology and pathology) are expected to increase by 12% over the next 20 years. Overall, acute inpatient bed need is projected to decrease by 16% over the 20-year time period.

Table 6: Inpatient and Outpatient Utilization Summary - All Four Boston Campuses Combined

Boston Study Site	2003 Actual	2013 Projected	2023 Projected	% Change (2003 to 2013)	% Change (2013 to 2023)	% Change (2003 to 2023)
Total Acute Inpatient Beds	451	426	379	-6%	-11%	-16%
Total Clinic Stops	892,706	1,000,713	918,128	12%	-8%	3%

Inpatient Utilization Trends

Projected utilization for inpatient services declines across the VAMCs for most CICs, with the exception of nursing home, which remains constant, and acute and chronic spinal cord injury (SCI&D) which actually increase. Due to a planning decision made by VA, the nursing home capacity of 425 beds total at Bedford and Brockton is maintained over the 20-year projection period. West Roxbury is projected to experience a 12% decrease in inpatient beds (decrease of 20 beds) due to the expected decrease in inpatient medicine and observation beds as well as inpatient surgery beds. Bedford is projected to experience approximately a 7% decrease in inpatient beds (decrease of 30 beds) due to the expected decreases in inpatient psychiatry and substance abuse beds as well as domiciliary beds. The decrease in domiciliary beds is due to a planned decentralization by the VISN to establish bed capacity in other parts of VISN 1. Brockton is projected to experience decreases in demand similar to Bedford; however, a 247% increase (increase of 74 beds) in chronic SCI&D yields a net 9% increase of inpatient beds. The tables below illustrate the projected inpatient utilization according to major CIC groupings.

Table 7 - Total Boston Study Site – Inpatient Utilization Projections (Beds)

	2003 Actual Beds	2013 Beds Needed	2023 Beds Needed	% Change (2003 to 2013)	% Change (2013 to 2023)	% Change (2003 to 2023)
Inpatient Medicine and Observation						
West Roxbury	83	83	69	0%	-17%	-17%
TOTAL	**83**	**83**	**69**	**0%**	**-17%**	**-17%**
Inpatient Psychiatry and Substance Abuse						
Bedford	21	17	16	-19%	-5%	-23%
Brockton	50	39	36	-22%	-8%	-28%
TOTAL	**71**	**56**	**52**	**-21%**	**-7%**	**-27%**
Inpatient Surgery						
West Roxbury	64	54	41	-16%	-24%	-36%
TOTAL	**64**	**54**	**41**	**-16%**	**-24%**	**-36%**
Other: VA Mental Health Inpatient Programs						
Bedford	92	92	79	0%	-14%	-14%
Brockton	141	141	138	0%	-2%	-2%
TOTAL	**233**	**233**	**217**	**0%**	**-7%**	**-7%**

Table 8 - Total Boston Study Site – Nursing Home Utilization Projections (Beds)

Nursing Home	2003 Actual Beds	2013 Beds Needed	2023 Beds Needed	% Change (2003 to 2013)	% Change (2013 to 2023)	% Change (2003 to 2023)
Bedford	274	274	274	0%	0%	0%
Brockton	151	151	151	0%	0%	0%
TOTAL	**425**	**425**	**425**	**0%**	**0%**	**0%**

Table 9 - Total Boston Study Site – Domiciliary Utilization Projections (Beds)

Domiciliary	2003 Actual Beds	2013 Beds Needed	2023 Beds Needed	% Change (2003 to 2013)	% Change (2013 to 2023)	% Change (2003 to 2023)
Bedford	50	50	38	0%	-25%	-24%
Brockton	70	70	52	0%	-25%	-25%
TOTAL	**120**	**120**	**90**	**0%**	**-25%**	**-25%**

Table 10 - Total Boston Study Site – Spinal Cord Injury Utilization Projections (Beds)

	2003 Actual Beds	2013 Beds Needed	2023 Beds Needed	% Change (2003 to 2013)	% Change (2013 to 2023)	% Change (2003 to 2023)
Acute SCI&D[5]						
West Roxbury	23	40	40	74%	0%	74%
TOTAL	**23**	**40**	**40**	**74%**	**0%**	**74%**
Chronic SCI&D						
Brockton	30	86	104	187%	21%	247%
TOTAL	**30**	**86**	**104**	**187%**	**21%**	**247%**

Ambulatory Utilization

Projected utilization for ambulatory services varies by CIC and across the four VAMCs. The CICs projected to experience the greatest increases in demand are cardiology (expected to increase by 141%) and urology (expected to increase by 209%). CICs projected to experience decreases in demand include primary care and related specialties (4%), non-surgical specialties (15%), surgical and related specialties (22%), and eye clinic (26%). Rehabilitation medicine remains constant during the projected period due to a planning assumption made by VA. Overall, West Roxbury and Bedford are projected to experience minimal increases in ambulatory clinic stops (1% and 4% respectively) as compared to Brockton which is expected to increase by 13%. Ambulatory utilization at Jamaica Plain is expected to decrease by 5%.

Table 11 - Total Boston Study Site – Ambulatory Utilization Projections (Clinic Stops)[6]

	2003 Actual Stops	2013 Projected Stops	2023 Projected Stops	% Change (2003 to 2013)	% Change (2013 to 2023)	% Change (2003 to 2023)
Cardiology						
Bedford	2,045	5,626	5,126	175%	-9%	151%
Brockton	4,664	9,097	8,383	95%	-8%	80%
West Roxbury	10,281	29,821	27,367	190%	-8%	166%
TOTAL	**16,990**	**44,544**	**40,876**	**162%**	**-8%**	**141%**
Eye Clinic						
Bedford	6,629	4,908	4,688	-26%	-4%	-29%
Brockton	8,653	6,675	6,432	-23%	-4%	-26%
Jamaica Plain	19,969	16,082	15,306	-19%	-5%	-23%
West Roxbury	3,984	2,945	2,779	-26%	-6%	-30%
TOTAL	**39,235**	**30,610**	**29,205**	**-22%**	**-5%**	**-26%**
Non-Surgical Specialties						
Bedford	3,071	2,821	2,593	-8%	-8%	-16%
Brockton	9,710	10,313	9,583	6%	-7%	-1%
Jamaica Plain	42,366	43,282	39,584	2%	-9%	-7%
West Roxbury	16,457	10,306	9,433	-37%	-8%	-43%

[5] VISN 1 is a referral center for acute SCI&D needs from adjacent VISN 2 that does not provide acute SCI&D services.

[6] Outpatient data for Jamaica Plain includes utilization/projections for the Causeway Clinic.

	2003 Actual Stops	2013 Projected Stops	2023 Projected Stops	% Change (2003 to 2013)	% Change (2013 to 2023)	% Change (2003 to 2023)
TOTAL	**71,604**	**66,722**	**61,193**	**-7%**	**-8%**	**-15%**
Orthopedics						
Bedford	5,958	5,975	5,544	0%	-7%	-7%
Brockton	3,278	4,654	4,362	42%	-6%	33%
Jamaica Plain	14,048	16,784	15,595	19%	-7%	11%
TOTAL	**23,284**	**27,413**	**25,501**	18%	**-7%**	**10%**
Primary Care & Related Specialties						
Bedford	20,574	22,987	20,119	12%	-12%	-2%
Brockton	29,218	38,152	34,016	31%	-11%	16%
Jamaica Plain	57,539	62,908	54,545	9%	-13%	-5%
West Roxbury	28,643	25,682	22,367	-10%	-13%	-22%
TOTAL	**135,974**	**149,729**	**131,047**	**10%**	**-12%**	**-4%**
Rehab Medicine						
Bedford	23,556	23,556	23,556	NA	NA	NA
Brockton	4,717	4,717	4,717	NA	NA	NA
Jamaica Plain	9,690	9,690	9,690	NA	NA	NA
West Roxbury	1,071	1,071	1,071	NA	NA	NA
TOTAL	**39,034**	**39,034**	**39,034**	**NA**	**NA**	**NA**
Surgical & Related Specialties						
Bedford	1,668	2,023	1,836	21%	-9%	10%
Brockton	1,665	2,784	2,569	67%	-8%	54%
Jamaica Plain	49,390	41,640	38,083	-16%	-9%	-23%
West Roxbury	8,527	1,912	5,387	-78%	182%	-37%
TOTAL	**61,250**	**48,359**	**47,875**	**-21%**	**-1%**	**-22%**
Urology						
Bedford	1,027	3,615	3,466	252%	-4%	237%
Jamaica Plain	5,264	17,086	16,380	225%	-4%	211%
West Roxbury	878	2,362	2,274	169%	-4%	159%
TOTAL	**7,169**	**23,063**	**22,120**	**222%**	**-4%**	**209%**

Outpatient Mental Health Utilization

Additionally, projected utilization for outpatient mental health services varies by CIC and across the four VAMCs. The CICs projected to experience the greatest increases in demand are day treatment (expected to increase by 40%) and homeless care (expected to increase by 12%). CICs projected to experience decreases in demand include methadone treatment (19%), work therapy (21%), community mental health residential program (22%), and MHICM (42%). Due to a planning decision by VA, projections for behavioral health will remain constant over the 20-year projection period. The demand for outpatient mental health services for both West Roxbury and Brockton is projected to range from no change to a minimal increase, while Bedford and Jamaica Plain are projected to experience greater decreases in demand (9% and 14% respectively).

Table 12 - Total Boston Study Site – Outpatient Mental Health (Clinic Stops)[7]

	2003 Actual Stops	2013 Projected Stops	2023 Projected Stops	% Change (2003 to 2013)	% Change (2013 to 2023)	% Change (2003 to 2023)
Behavioral Health						
Bedford	53,207	53,207	53,207	0%	0%	0%
Brockton	44,353	44,353	44,353	0%	0%	0%
Jamaica Plain	58,199	58,199	58,199	0%	0%	0%
West Roxbury	1,548	1,548	1,548	0%	0%	0%
TOTAL	**157,307**	**157,307**	**157,307**	**0%**	**0%**	**0%**
Community MH Residential Care						
Bedford	2,700	2,971	1,925	10%	-35%	-29%
Brockton	433	883	560	104%	-37%	29%
Jamaica Plain	50	23	13	-54%	-43%	-74%
TOTAL	**3,183**	**3,877**	**2,498**	**22%**	**-36%**	**-22%**
Day Treatment						
Bedford	3	4,042	2,490	>300%	-38%	>300%
Brockton	0	4,055	2,494	X	-38%	X
Jamaica Plain	4,211	1,607	934	-62%	-42%	-78%
TOTAL	**4,214**	**9,704**	**5,918**	**130%**	**-39%**	**40%**
Homeless						
Bedford	2,982	3,729	2,917	25%	-22%	-2%
Jamaica Plain	2,046	3,422	2,736	67%	-20%	34%
TOTAL	**5,028**	**7,151**	**5,653**	**42%**	**-21%**	**12%**
Mental Health Intensive Case Management (MHICM)						
Bedford	14,268	8,611	6,230	-40%	-28%	-56%
Brockton	2,264	4,558	3,329	101%	-27%	47%
TOTAL	**16,532**	**13,169**	**9,559**	**-20%**	**-27%**	**-42%**
Methadone Treatment						
Jamaica Plain	28,235	36,058	22,933	28%	-36%	-19%
TOTAL	**28,235**	**36,058**	**22,933**	**28%**	**-36%**	**-19%**
Work Therapy						
Bedford	45,498	53,439	40,873	17%	-24%	-10%
Brockton	11,017	10,840	8,077	-2%	-25%	-27%
Jamaica Plain	12,788	7,983	5,867	-38%	-27%	-54%
TOTAL	**69,303**	**72,262**	**54,817**	**4%**	**-24%**	**-21%**

The following summarizes the demand projections per VAMC through 2023:

- West Roxbury demand is projected to experience the greatest decrease in inpatient demand (12% or 20 beds),
- Brockton inpatient demand is expected to slightly increase, most notably a 247% increase (74 beds) in chronic SCI&D, combined with a 13% increase in ambulatory demand,
- Jamaica Plain demand for both ambulatory utilization is projected to decrease by 5% and outpatient mental health services is expected to decline by 14%, and

[7] Outpatient data for Jamaica Plain includes utilization/projections for the Causeway Clinic.

- Bedford inpatient demand is expected to decline by 7% or 30 beds and outpatient mental health is projected to decline by 9%, while ambulatory demand is expected to increase by 4%.

The varying utilization data demonstrates that different facilities will experience significant growth over the next 20 years, but others will experience some reduction in services. The analysis of the projected enrollment and utilization data for the Boston VAMCs highlights the need for capital realignment.

Projected Utilization by BPO in 2023

For each of the BPOs considered for further study in Stage II, the Healthcare Analysis considers which services would move between each of the campuses at the Boston study site. Depicted in the following tables is the distribution of healthcare services in 2023 by BPO, broken out by CIC and delivery location within and external (contract) to VA.

BPO 1:

Inpatient Services:

In 2023 in the Baseline the provision of inpatient services is consistent with current state but adjusted for projected demand. Other Mental Health, Psychiatry and Substance Abuse, Domiciliary/PRRTP, and Nursing Home services will be provided at the Bedford facility. The same services will be provided at the Brockton facility in addition to Chronic Spinal Cord Injury services. Of the CICs, both facilities will experience the highest volume of Nursing Home services, with 94,867 bed days of care at Bedford and 52,359 bed days of care at Brockton. No inpatient services will be provided at Jamaica Plain, and Medicine and Observation, Surgery, and Acute Spinal Cord Injury services will be provided exclusively at West Roxbury.

Ambulatory Services:

In 2023 in the Baseline the provision of ambulatory services is also consistent with current state but adjusted for projected demand. Bedford will be the largest provider of Behavioral Health and Rehab Medicine services, Jamaica Plain will be the largest provider of Non-Surgical Specialty, Pathology, Radiology and Related Specialty, and Surgical and Related Specialty services. West Roxbury will be the largest provider of Cardiology and Orthopedics services. A significant amount of Behavioral Health, Pathology and Primary Care and Related Specialty services will be provided by CBOCs, with the Causeway Clinic and Worcester CBOCs as the largest service providers.

Outpatient Mental Health Services:

Bedford will be the largest provider of Outpatient Mental Health services and provides mostly Work Therapy services in addition to all other Outpatient Mental Health services except Methadone Treatment. All Methadone Treatment services will be provided at the Causeway Clinic. West Roxbury will not provide Outpatient Mental Health services.

Table 13: BPO 1 Projected Inpatient and Outpatient Services by CIC in 2023

CIC	Bedford	Brockton	Jamaica Plan	West Roxbury	CBOCs	Contract
Inpatient (Numbers of Bed Days of Care)						
Medicine and Observation	0	0	0	19,194	0	2,213
Surgery	0	0	0	11,669	0	1,051
Spinal Cord Injury - Acute	0	0	0	5,895	0	0
Spinal Cord Injury - Chronic	0	32,266	0	0	0	0
Other: Mental Health	24,510	42,815	0	0	0	0
Psychiatry and Substance Abuse	5,011	11,124	0	0	0	49
Domiciliary/PRRTP	13,107	18,101	0	0	0	0
Nursing Home	94,867	52,359	0	0	0	0
Ambulatory (Number of Stops)						
Behavioral Health	53,199	44,353	20,052	1,548	51,295	505
Cardiology	5,017	8,276	0	28,280	3,697	499
Eye Clinic	4,630	6,363	13,383	2,747	4,983	13
Non-Surgical Specialties	2,438	9,484	34,906	9,334	6,517	1,625
Orthopedics	5,461	4,306	13,780	0	3,177	91
Pathology	31,601	27,044	35,157	96,068	22,002	2,227
Primary Care & Related Specialties	19,679	33,508	37,378	22,028	73,760	791
Radiology & Related Specialties	4,434	5,853	39,953	11,642	3,227	882
Rehab Medicine	23,555	4,717	9,220	1,071	3,628	93
Surgical & Related Specialties	1,701	2,542	42,592	5,323	2,369	2,543
Urology	3,413	0	16,183	2,247	831	62
Dental	4,282	2,967	6,640	0	0	0
Outpatient Mental Health (Number of Stops)						
Community MH Residential Care	1,925	560	0	0	138	0
Day Treatment	2,490	2,494	0	0	1,474	0
Homeless	2,917	0	0	0	2,736	0
Mental Health Intensive Case Management (MHICM)	6,230	3,329	0	0	0	0
Methadone Treatment	0	0	0	0	22,933	0
Work Therapy	40,873	8,077	5,867	0	178	0

Table 14: BPO 1 Projected Outpatient Services Provided at CBOCs by CIC in 2023

CIC	Lynns/ North Shore	Haverhill	Winchendon	Lowell - Bedford	Gloucester	Fitchburg	Lowell - BHS	Causeway Clinic	Framingham	Quincy	Dorchester	Worcester
Ambulatory												
Behavioral Health	552	781	0	143	316	266	4,849	37,650	445	0	0	6,293
Cardiology	0	0	0	0	0	0	0	0	0	0	0	1,957
Eye Clinic	0	0	0	0	0	0	1,932	1,740	0	0	0	3,051
Non-Surgical Specialties	0	0	0	0	0	0	0	2,771	0	0	0	3,746
Orthopedics	0	0	0	0	0	0	1,108	1,524	0	0	0	545
Pathology	0	0	0	0	0	0	7,041	3,646	0	0	0	11,315
Primary Care & Related Specialties	4,962	5,100	0	0	2,672	3,936	13,635	15,685	3,764	3,133	490	20,383
Radiology & Related Specialties	0	0	0	0	0	0	929	567	0	0	0	1,731
Rehab Medicine	0	0	0	0	0	0	1,338	378	0	0	0	1,912
Surgical & Related Specialties	0	0	0	0	0	0	1,495	380	0	0	0	494
Urology	0	0	0	0	0	0	831	0	0	0	0	0
Dental	0	0	0	0	0	0	0	0	0	0	0	0
Outpatient Mental Health												
Community MH Residential Care	0	0	67	0	0	0	0	13	0	0	0	58
Day Treatment	0	0	0	540	0	0	0	934	0	0	0	0
Homeless	0	0	0	0	0	0	0	2,736	0	0	0	0
Mental Health Intensive Case Management (MHICM)	0	0	0	0	0	0	0	0	0	0	0	0
Methadone Treatment	0	0	0	0	0	0	0	22,933	0	0	0	0
Work Therapy	0	0	0	178	0	0	0	0	0	0	0	0

BPO 8:

Inpatient Services:

Since BPO 8 makes the Bedford facility available for reuse, by 2023 all inpatient services previously provided at Bedford will be provided at Brockton, with the exception of the PRRTP beds which will be provided at the Crescent House in Lowell. Inpatient services will remain at West Roxbury as well.

Ambulatory Services:

In BPO 8 by 2023, utilization from Bedford will mostly be relocating to West Roxbury but also to Jamaica Plain and CBOCs. Specialty ambulatory services previously provided at Bedford such as Cardiology, Non-Surgical Specialties, Surgical and Related Specialties, and Urology will be provided at West Roxbury. Ambulatory services previously provided at Bedford such as Behavioral Health, Primary Care and Related Specialties, and Rehab Medicine will be provided at a Bedford CBOC (80%) and Lowell CBOC (20%) in order to keep these services in the Bedford community. Optometry services from Bedford will be provided at West Roxbury (40%), Jamaica Plain (40%) and Lowell CBOC (20%). Orthopedics services from Bedford will be provided at West Roxbury (90%) and Lowell CBOC (10%), and Radiology and Related Specialty as well as Pathology services from Bedford will be provided at West Roxbury (50%) and Jamaica Plain (50%).

All services previously provided at the Causeway Clinic will be provided at Jamaica Plain in order to reduce duplication of services provided at these facilities in close proximity to each other. All Orthopedics, Urology and Surgical and Related Specialty services from Jamaica Plain will be provided at West Roxbury. Ophthalmology services from Jamaica Plain and Bedford will also be provided at West Roxbury.

Outpatient Mental Health Services:

In BPO 8 by 2023 services previously provided at Bedford including Mental Health Intensive Case Management, Day Treatment, and Homeless Outpatient Mental Health services will be provided at Brockton. Work Therapy services from Bedford will be provided at Brockton (33%), a Bedford CBOC (33%), and Lowell CBOC (33%). Community Mental Health Residential Care services from Bedford will be provided at Jamaica Plain.

Table 15: BPO 8 Projected Inpatient and Outpatient Services by CIC in 2023

CIC	Bedford	Brockton	Jamaica Plan	West Roxbury	CBOCs	Contract
Inpatient (Numbers of Bed Days of Care)						
Medicine and Observation	0	0	0	19,267	0	0
Surgery	0	0	0	11,703	0	0
Spinal Cord Injury - Acute	0	0	0	5,895	0	0
Spinal Cord Injury - Chronic	0	32,266	0	0	0	0
Other: Mental Health	0	67,324	0	0	0	0
Psychiatry and Substance Abuse	0	16,182	0	0	0	0
Domiciliary/PRRTP	0	31,208	0	0	0	0
Nursing Home	0	147,226	0	0	0	0
Ambulatory						
Behavioral Health	0	44,353	56,791	1,548	66,852	1,265
Cardiology	0	8,276	1,740	33,253	1,957	543
Eye Clinic	0	6,363	15,234	4,599	5,909	14
Non-Surgical Specialties	0	9,484	37,562	11,896	3,746	1,615
Orthopedics	0	4,306	0	20,309	2,200	0
Pathology	0	27,044	53,536	111,916	18,356	3,246
Primary Care & Related Specialties	0	33,508	52,785	22,028	77,870	953
Radiology & Related Specialties	0	5,853	42,725	13,902	2,660	852
Rehab Medicine	0	4,717	28,253	1,071	7,961	282
Surgical & Related Specialties	0	2,542	0	52,539	1,989	0
Urology	0	0	0	21,906	831	0
Dental	0	7,249	6,640	0	0	0
Outpatient Mental Health						
Community MH Residential Care	0	560	1,938	0	125	0
Day Treatment	0	4,984	934	0	540	0
Homeless	0	2,917	2,736	0	0	0
Mental Health Intensive Case Management (MHICM)	0	9,559	0	0	0	0
Methadone Treatment	0	0	22,933	0	0	0
Work Therapy	0	21,974	5,867	0	27,154	0

Table 16: BPO 8 Projected Outpatient Services Provided at CBOCs by CIC in 2023

CIC	Lynns/ North Shore	Haverhill	Winchendon	Lowell - Bedford	Gloucester	Fitchburg	Lowell - BHS	Causeway Clinic	Framingham	Quincy	Dorchester	Worcester	Bedford Area CBOC
Ambulatory													
Behavioral Health	552	781	0	143	316	266	15,490	0	445	0	0	6,293	42,566
Cardiology	0	0	0	0	0	0	0	0	0	0	0	1,957	0
Eye Clinic	0	0	0	0	0	0	2,858	0	0	0	0	3,051	0
Non-Surgical Specialties	0	0	0	0	0	0	0	0	0	0	0	3,746	0
Orthopedics	0	0	0	0	0	0	1,655	0	0	0	0	545	0
Pathology	0	0	0	0	0	0	7,041	0	0	0	0	11,315	0
Primary Care & Related Specialties	4,962	5,100	0	0	2,672	3,936	17,594	0	3,764	3,133	490	20,383	15,836
Radiology & Related Specialties	0	0	0	0	0	0	929	0	0	0	0	1,731	0
Rehab Medicine	0	0	0	0	0	0	6,049	0	0	0	0	1,912	0
Surgical & Related Specialties	0	0	0	0	0	0	1,495	0	0	0	0	494	0
Urology	0	0	0	0	0	0	831	0	0	0	0	0	0
Dental	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatient Mental Health													
Community MH Residential Care	0	0	67	0	0	0	0	0	0	0	0	58	0
Day Treatment	0	0	0	540	0	0	0	0	0	0	0	0	0
Homeless	0	0	0	0	0	0	0	0	0	0	0	0	0
Mental Health Intensive Case Management (MHICM)	0	0	0	0	0	0	0	0	0	0	0	0	0
Methadone Treatment	0	0	0	0	0	0	0	0	0	0	0	0	0
Work Therapy	0	0	0	178	0	0	13,488	0	0	0	0	0	13,488

BPO 10:

Inpatient Services:

Since BPO 10 makes the Bedford facility available for reuse, by 2023 all inpatient services previously provided at Bedford will be provided at Brockton, with the exception of the PRRTP beds which will be provided at the Crescent House in Lowell. Additionally, since BPO 10 makes the West Roxbury facility available for reuse, all inpatient services previously provided at West Roxbury will be provided at Jamaica Plain.

Ambulatory Services:

In BPO 10 by 2023, utilization from Bedford will mostly be relocating to Jamaica Plain but also to CBOCs. Specialty ambulatory services previously provided at Bedford such as Cardiology, Non-Surgical Specialties, Surgical and Related Specialties, Pathology, Radiology and Related Specialties and Urology will be provided at Jamaica Plain. Ambulatory services previously provided at Bedford such as Behavioral Health, Eye Clinic, Primary Care and Related Specialties, and Rehab Medicine will be provided at a Bedford CBOC (80%) and Lowell CBOC (20%) to keep these services in the community. Orthopedics services from Bedford will be provided at Jamaica Plain (90%) and Lowell CBOC (10%).

All services previously provided at West Roxbury and the Causeway Clinic will be provided at Jamaica Plain. Again, Causeway Clinic and Jamaica Plain are in proximity to one another, so services were consolidated to the VAMC campus.

Outpatient Mental Health Services:

In BPO 10 by 2023 services previously provided at Bedford including Mental Health Intensive Case Management, Day Treatment, and Homeless Outpatient Mental Health services will be provided at Brockton. Work Therapy services from Bedford will be provided at Brockton (33%), a Bedford CBOC (33%), and Lowell CBOC (33%). Community Mental Health Residential Care services from Bedford will be provided at Jamaica Plain.

Table 17: BPO 10 Projected Inpatient and Outpatient Services by CIC in 2023

CIC	Bedford	Brockton	Jamaica Plan	West Roxbury	CBOC	Contract
Inpatient (Numbers of Bed Days of Care)						
Medicine and Observation	0	0	21,407	0	0	0
Surgery	0	0	12,720	0	0	0
Spinal Cord Injury - Acute	0	0	5,895	0	0	0
Spinal Cord Injury - Chronic	0	32,266	0	0	0	0
Other: Mental Health	0	67,324	0	0	0	0
Psychiatry and Substance Abuse	0	16,116	0	0	0	66
Domiciliary/PRRTP	0	31,208	0	0	0	0
Nursing Home	0	147,226	0	0	0	0
Ambulatory						
Behavioral Health	0	44,353	58,302	0	66,852	1302
Cardiology	0	8,276	35,536	0	1,957	0
Eye Clinic	0	6,363	19,829	0	5,909	19
Non-Surgical Specialties	0	9,484	48,968	0	3,746	2,105
Orthopedics	0	4,306	20,183	0	2,200	126
Pathology	0	27,044	159,055	0	18,356	9,643
Primary Care & Related Specialties	0	33,508	74,422	0	77,870	1,344
Radiology & Related Specialties	0	5,853	56,354	0	2,660	1,124
Rehab Medicine	0	4,717	29,313	0	7,961	292
Surgical & Related Specialties	0	2,542	49,704	0	1,989	2,835
Urology	0	0	21,831	0	831	75
Dental	0	7,249	6,640	0	0	0
Outpatient Mental Health						
Community MH Residential Care	0	560	1,938	0	125	0
Day Treatment	0	4,984	934	0	540	0
Homeless	0	2,917	2,736	0	0	0
Mental Health Intensive Case Management (MHICM)	0	9,559	0	0	0	0
Methadone Treatment	0	0	22,933	0	0	0
Work Therapy	0	21,974	5,867	0	27,154	0

Table 18: BPO 10 Projected Outpatient Services Provided at CBOCs by CIC in 2023

CIC	Lynns/ North Shore	Haverhill	Winchendon	Lowell - Bedford	Gloucester	Fitchburg	Lowell - BHS	Causeway Clinic	Framingham	Quincy	Dorchester	Worcester	Bedford Area CBOC
Ambulatory													
Behavioral Health	552	781	0	143	316	266	15,490	0	445	0	0	6,293	42,566
Cardiology	0	0	0	0	0	0	0	0	0	0	0	1,957	0
Eye Clinic	0	0	0	0	0	0	2,858	0	0	0	0	3,051	0
Non-Surgical Specialties	0	0	0	0	0	0	0	0	0	0	0	3,746	0
Orthopedics	0	0	0	0	0	0	1,655	0	0	0	0	545	0
Pathology	0	0	0	0	0	0	7,041	0	0	0	0	11,315	0
Primary Care & Related Specialties	4,962	5,100	0	0	2,672	3,936	17,594	0	3,764	3,133	490	20,383	15,836
Radiology & Related Specialties	0	0	0	0	0	0	929	0	0	0	0	1,731	0
Rehab Medicine	0	0	0	0	0	0	6,049	0	0	0	0	1,912	0
Surgical & Related Specialties	0	0	0	0	0	0	1,495	0	0	0	0	494	0
Urology	0	0	0	0	0	0	831	0	0	0	0	0	0
Dental	0	0	0	0	0	0	0	0	0	0	0	0	0
Outpatient Mental Health													
Community MH Residential Care	0	0	67	0	0	0	0	0	0	0	0	58	0
Day Treatment	0	0	0	540	0	0	0	0	0	0	0	0	0
Homeless	0	0	0	0	0	0	0	0	0	0	0	0	0
Mental Health Intensive Case Management (MHICM)	0	0	0	0	0	0	0	0	0	0	0	0	0
Methadone Treatment	0	0	0	0	0	0	0	0	0	0	0	0	0
Work Therapy	0	0	0	178	0	0	13,488	0	0	0	0	0	13,488

BPO 11:

Inpatient Services:

Since BPO 11 makes the Bedford facility available for reuse, by 2023 all inpatient services previously provided at Bedford will be provided at Brockton, with the exception of the PRRTP beds which will be provided at the Crescent House in Lowell. Inpatient services will remain at West Roxbury as well.

Ambulatory Services:

In BPO 11 by 2023, utilization from Bedford will mostly be relocating to West Roxbury but also to CBOCs. Specialty ambulatory services previously provided at Bedford such as Cardiology, Non-Surgical Specialties, Surgical and Related Specialties, Pathology, Radiology and Related Specialties and Urology will be provided at West Roxbury. Ambulatory services previously provided at Bedford such as Behavioral Health, Eye Clinic, Primary Care and Related Specialties, and Rehab Medicine will be provided at a Bedford CBOC (80%) and Lowell CBOC (20%) to keep these services in the community. Orthopedics services from Bedford will be provided at West Roxbury (90%) and Lowell CBOC (10%).

All services previously provided at Jamaica Plain and the Causeway Clinic will be provided at West Roxbury (with the exception of Primary Care, Mental Health and Methadone services previously provided at the Causeway Clinic which will be provided at an "urban site" clinic). Again, Causeway Clinic and Jamaica Plain are in close proximity, so services will be consolidated to the VAMC campus.

Outpatient Mental Health Services:

In BPO 11 by 2023 services previously provided at Bedford including Mental Health Intensive Case Management, Day Treatment, and Homeless Outpatient Mental Health services will be provided at Brockton. Work Therapy services from Bedford will be provided at Brockton (33%), a Bedford CBOC (33%), and Lowell CBOC (33%). Community Mental Health Residential Care services from Jamaica Plain and Bedford will be provided at West Roxbury, and Work Therapy services from Jamaica Plain will be provided at West Roxbury as well.

Table 19: BPO 11 Projected Inpatient and Outpatient Services by CIC in 2023

CIC	Bedford	Brockton	Jamaica Plan	West Roxbury	CBOC	Contract
Inpatient (Numbers of Bed Days of Care)						
Medicine and Observation	0	0	0	19,194	0	2,213
Surgery	0	0	0	11,669	0	1,051
Spinal Cord Injury - Acute	0	0	0	5,895	0	0
Spinal Cord Injury - Chronic	0	32,266	0	0	0	0
Other: Mental Health	0	67,324	0	0	0	0
Psychiatry and Substance Abuse	0	16,116	0	0	0	66
Domiciliary/PRRTP	0	31,208	0	0	0	0
Nursing Home	0	147,226	0	0	0	0
Ambulatory						
Behavioral Health	0	44,353	0	59,747	66,709	143
Cardiology	0	8,276	0	34,965	1,957	571
Eye Clinic	0	6,363	0	19,848	5,909	0
Non-Surgical Specialties	0	9,484	0	51,073	3,746	0
Orthopedics	0	4,306	0	20,309	2,200	0
Pathology	0	27,044	0	168,698	18,356	0
Primary Care & Related Specialties	0	33,508	0	60,081	93,555	0
Radiology & Related Specialties	0	5,853	0	57,478	2,660	0
Rehab Medicine	0	4,717	0	31,961	5,606	0
Surgical & Related Specialties	0	2,542	0	52,539	1,989	0
Urology	0	0	0	21,906	831	0
Dental	0	7,249	0	6,640	0	0
Outpatient Mental Health						
Community MH Residential Care	0	560	0	1,925	138	0
Day Treatment	0	4,984	0	934	540	0
Homeless	0	2,917	0	2,736	0	0
Mental Health Intensive Case Management (MHICM)	0	9,559	0	0	0	0
Methadone Treatment	0	0	0	0	22,933	0
Work Therapy	0	21,974	0	5,867	27,154	0

Table 20: BPO 11 Projected Outpatient Services Provided at CBOCs by CIC in 2023

CIC	Lynns/ North Shore	Haverhill	Winchendon	Lowell - Bedford	Gloucester	Fitchburg	Lowell - BHS	Causeway Clinic	Framingham	Quincy	Dorchester	Worcester	Urban CBOC	Boston Area CBOC
Ambulatory														
Behavioral Health	552	781	0	143	316	266	15,490	0	445	0	0	6,293	0	42,423
Cardiology	0	0	0	0	0	0	0	0	0	0	0	1,957	0	0
Eye Clinic	0	0	0	0	0	0	2,858	0	0	0	0	3,051	0	0
Non-Surgical Specialties	0	0	0	0	0	0	0	0	0	0	0	3,746	0	0
Orthopedics	0	0	0	0	0	0	1,655	0	0	0	0	545	0	0
Pathology	0	0	0	0	0	0	7,041	0	0	0	0	11,315	0	0
Primary Care & Related Specialties	4,962	5,100	0	0	2,672	3,936	17,594	0	3,764	3,133	490	20,383	15,685	15,836
Radiology & Related Specialties	0	0	0	0	0	0	929	0	0	0	0	1,731	0	0
Rehab Medicine	0	0	0	0	0	0	3,694	0	0	0	0	1,912	0	0
Surgical & Related Specialties	0	0	0	0	0	0	1,495	0	0	0	0	494	0	0
Urology	0	0	0	0	0	0	831	0	0	0	0	0	0	0
Dental	0	0	0	0	0	0		0	0	0	0	0	0	0
Outpatient Mental Health														
Community MH Residential Care	0	0	67	0	0	0	0	0	0	0	0	58	13	0
Day Treatment	0	0	0	540	0	0	0	0	0	0	0	0	934	0
Homeless	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mental Health Intensive Case Management (MHICM)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Methadone Treatment	0	0	0	0	0	0	0	0	0	0	0	0	22,933	0
Work Therapy	0	0	0	178	0	0	13,488	0	0	0	0	0	0	13,488

5.0 Capital Planning Analysis

Current State

Size

The Boston study consists of the following four locations: Edith Nourse Rogers Veterans Memorial Hospital, Bedford; Brockton Campus, VA Boston Healthcare System (BHS); Jamaica Plain Campus, VA BHS; and West Roxbury Campus, VA BHS.

The Edith Nourse Rogers Memorial Hospital (Bedford) campus is approximately 180 contiguous acres[8] including a 54-acre golf course and driving range, which is currently maintained by the United States Air Force. It currently has 60 buildings (on campus only) arranged primarily around an enclosed courtyard with the area of buildings totaling just about 1,160,000 square feet.

The Brockton campus is approximately 146 contiguous acres with 33 buildings arranged around an enclosed courtyard and an open lawn at the main entrance. Jamaica Plain is comprised of roughly 16 acres of land and 10 existing buildings totaling close to 960,000 square feet. The West Roxbury campus contains 30 acres and 13 buildings totaling 531,653 square feet.

Age

The age of the buildings on the 4 campuses varies based upon the site. Approximately half of the buildings at Bedford were constructed over a seven-year period beginning in 1928. The remaining buildings were all constructed between the late 1940's and the early 1960's. The Brockton campus was constructed in 1955 with a few buildings constructed after this initial date. Many of the buildings have undergone renovation since their initial construction. Jamaica Plain was originally constructed in 1952, which has undergone additions throughout the years with the most recent being an addition in 2000 to house ambulatory care functions. The original buildings at West Roxbury were constructed between 1943 and 1945 with buildings and additions added to the campus after these dates. The most recent addition occurred in 1989 to accommodate outpatient services.

Construction type

The majority of the buildings at Bedford are low density, consisting of one to three stories. Buildings 2 and 78 are the exceptions as they are each five stories. The same is true for the Brockton campus with Buildings 2 and 3 as the exception to the majority of one to three story buildings. Jamaica Plain was designed around the main tower which stands at 16 stories. The other additions and buildings stand much lower on the urban site. The original structure at West

[8] There is an additional piece of land (not contiguous) of approximately three acres which lies in Lowell, MA making the existing campus total 183 acres. This piece of land is not counted in the contiguous acres and is shown in the site plans that follow.

Roxbury is the main focus of the campus at 6 stories with the additions on each side standing at 5 and 3 stories. All other buildings on the West Roxbury campus remain at 1 or 2 stories.

Original Use

The Bedford campus, being the oldest of the four was initially developed for health services including nursing home care, substance abuse, acute inpatient psychiatry care, Alzheimer's inpatient and outpatient care, domiciliary, ambulatory care, and outpatient specialty care. Brockton was also designed to provide health services of a similar nature to those that exist at Bedford. Jamaica Plain was originally constructed as a 1,000 bed hospital in Boston's Longwood Medical Community. Newer additions have provided for increased space to provide ambulatory care as well. West Roxbury was designed as a hospital to provide health services and contains many of the inpatient services for the BHS system.

Current Configuration, Use and Capacity

The buildings on all four campuses have continued to provide health services as they were originally designed.

Future Use

While all buildings on the campuses are well maintained, the useful life of these buildings for providing clinical services varies depending on the campus and date of original construction. The VA's Capital Asset Inventory (CAI) database assesses each building's condition on a 1-5 scale, relative to layout, adjacency, code, accessibility, and privacy for the Boston campuses. The average building score is 3. The buildings on the Bedford campus have received ratings between 2.2 and 3.9 out of the possible 5 with a majority in the 3.0 to 3.9 range. Relatively low floor-to-floor heights, small floor plates, and narrow buildings, severely restrict the possibility of renovating these buildings to achieve the modern, safe, and secure definitions as defined in this study. Buildings at Brockton scored between 2.2 and 4.3 with the majority falling between 3.0 to 3.9, similar to Bedford. The buildings on the Brockton campus also contain relatively low floor-to-floor heights however a large number of the buildings have undergone renovations over the years. Buildings at Jamaica Plain have received typically better scores between 3.5 and 4.4 with Building 1F as a major exception as it is in excellent condition since it was newly constructed. Renovations would need to occur for the Jamaica Plain campus to meet the demands of a modern, safe and secure environment, but they could be more easily accommodated within the existing structures. The buildings on West Roxbury show their age and historic level of maintenance, receiving ratings between 2.7 and 4.3 out of the possible 5.

Data on Size and Dates of Construction and Renovation

The following tables show date of construction, renovation, number of floors, and total gross area (gross square feet or GSF) of each building on the respective site:

Table 21: Existing Buildings Table - Bedford

Building Number	Building Name/Function	Year Built	Year Renovated	Total Floors	Building Total GSF
1	Administration Bld	1928		2	13,784
2	Patient Care Bld	1928		5	95,669
3	Dietetics Kitchen/IRM/Phone	1928	1952	2	39,789
4	Nursing Home	1929	1996	3	102,575
5	Research/Vacant	1932		3	53,689
6	Patient Care Bld	1937		3	53,860
7	Patient Care Bld/Domiciliary	1937		3	63,088
8	CMOP/DSS	1930		3	48,011
9	Administration Bld	1928		3	41,680
10	Library	1928		2	17,575
12	Office Bld	1928		3	16,770
13	Housekeeping Quarters	1928		3	10,181
14	Housekeeping Quarters	1930		1	8,789
15	Housekeeping Quarters	1930		1	11,302
16	Housekeeping Quarters	1928		1	4,753
17	Research Bld	1930		3	16,483
18	Grecc Research	1928		3	16,386
18T	Quonset Hut Storage	1947		1	1,500
19	Laundry/Storage	1928	1965	2	19,230
19T	Quonset Hut Storage	1947		1	1,500
20	Garage	1928		1	4,383
20T	Quonset Hut Weld Shop	1947		1	1,500
21	CMOP Warehouse	1928		2	11,721
22	Boilerplant	1928		2	8,675
23	Guard house	1928		1	423
25	Control House - Sewage Treatment	1928		0	
26	Elevated Water Tank				
27	Electric Switchgear	1928		1	458
28	Storage	1928		1	458
28T	Greenhouse	1994		1	1,960
29	Research Storage	1928		1	458
30	Pumphouse	1933		1	293
32	Garage	1929		1	3,240
33	Fiscal Bld	1930		2	5,453
35	Greenhouse	1929		1	2,568
36	Civil Defense Bld	1928		1	756
37	Power Plant & Locker Room	1928			
39	Bathrooms	1929		1	960
40	Storage	1929		1	4,232
41	Storage	1939		1	3,276
42	Storage	1939		1	2,948
49	Barn	1896		1	3,276
54	Storage	1939		1	5,880
55	Recreation (Golf Clubhouse)	1920	2000	1	1,600
60	Electrical			1	320
61	Administrative Bldg.	1939		3	52,249

Building Number	Building Name/Function	Year Built	Year Renovated	Total Floors	Building Total GSF
62	Patient Care Bld	1939		3	51,768
63	Storage (Garages)	1939		1	2,640
64	Residence Garages	1939		1	1,148
65	Residence Garages	1939		1	1,148
66	Residence Garages	1939		1	1,148
69	Storage	1930		1	1,714
70	HSR&D	1946		3	63,958
71	Pumphouse	1946		1	330
78	Patient Care Bld	1959		5	128,416
78A	Canteen/Theater	1960		1	25,299
79	Electrical Bldg	1959		1	280
80	CWT/FMS/A&MM	1960		2	38,950
81	Chapel	1960		1	8,350
82	Gymnasium/Pool	1962		1	35,580
92	Emergency Generator	1978		1	374
93	Emergency Generator	1978		1	374
94	Emergency Generator	1978		1	374
95	Emergency Generator	1978		1	374
CC	Connecting Corridors	1930		1	13,336

Table 22: Existing Buildings Table – Brockton

Building Number	Building Name/Function	Year Built	Year Renovated	Total Floors	Building Total GSF
1	Administration	1955		3	50,095
2	Inpatient Psychiatry	1955	1989	5	183,100
3	Outpatient	1955		7	228,766
4	Nursing Home	1955	1997	3	117,608
5	Outpatient / Psychiatry	1955	1998	3	81,489
7	Domiciliary	1955	1986	3	113,504
8	Spinal Cord Injury	1955	1965	2	75,422
20	Kitchen / Warehouse	1955		2	55,881
21	Theater	1955		1	39,736
22	Recreation / Library	1955		2	30,572
23	Gym / Pool	1955		1	40,957
24	Chapel	1955		2	15,720
25	Storage	1955		1	21,140
40	Boiler Plant	1955	1997	1	4,500
43	Welding	1955		1	400
44	Station Garage	1955	1990	1	7,140
45	VISN Laundry	1955	1990	2	22,639
46	Research	1955	1985	1	5,567
47	Water Pump House	1955		1	200
50	Sewer Pump House	1955		1	150
51	Storage	1960		1	2,640
60	Administration (NLR)	1920	1955	3	17,185
61	IRM	1955		3	13,646
62	RISE Drug Treatment	1955		1	6,784

Building Number	Building Name/Function	Year Built	Year Renovated	Total Floors	Building Total GSF
63	Storage Garage	1955			1,632
64	Picnic Building	1955		1	315
65	Greenhouse	1955		1	2,348
67	Generator Building	1975	1984	1	704
68	Generator Building	1979		1	360
69	Generator Building	1979		1	360
70	Generator Building	1979		1	360
71	Switchgear Building	1979		1	200
72	Generator	1998		1	400
1CC	Connecting Corridors	1955		1	25,200

Table 23: Existing Buildings Table – Jamaica Plain

Building Number	Building Name/Function	Year Built	Year Renovated	Total Floors	Building Total GSF
1	Main Hospital	1952		16	695,587
1A	Research	1971		4	44,189
1B	MRI	1987		1	4,793
1F	Amb Care Addition	2000		4	115,245
2	Huntington House	1952		6	21,372
4	PRRTP	1952		1	7,874
5	Boiler Plant	1952		2	5,168
7	Maintenance/Research	1952		1	8,311
9	Admin/Research	1927	1993	5	50,752
P1	Parking Garage	1997		2	
X1	PRRTP Houses (3)			1	8,000

Table 24: Existing Buildings Table – West Roxbury

Building Number	Building Name/Function	Year Built	Year Renovated	Total Floors	Building Total GSF
1	Hospital/Clinic&Admn	1943	1988	6	187,264
2	SCI&D/Med/Surgery	1978		5	150,800
3	Outpatient	1989		3	149,300
5	Engineering	1977		1	5,100
7	Warehouse	1945		2	8,620
8	Boiler House	1943	1989	1	5,594
10	Garage	1945		1	1,932
17	Shops	1945		1	1,800
20	Research	1950	1989	1	5,218
22	Research	1960	1996	1	1,474
30	Research	1960	1995	1	1,540
88	Office Trailers	1986	2005	1	12,000
X1	Child Care Trailer	1986		1	1,990

Site Plan

The current site plans show the present campus configuration and locations of buildings. The building color indicates the departmental group (zone) of the primary occupants of each building based on descriptions provided in the CAI. The building's color is assigned to departmental groups (Building Zones) from the "Department to Zones Table" in the assumptions as indicated by the color key.

Figure 3: A Diagram of the Existing Current State Site Plan – Bedford Campus

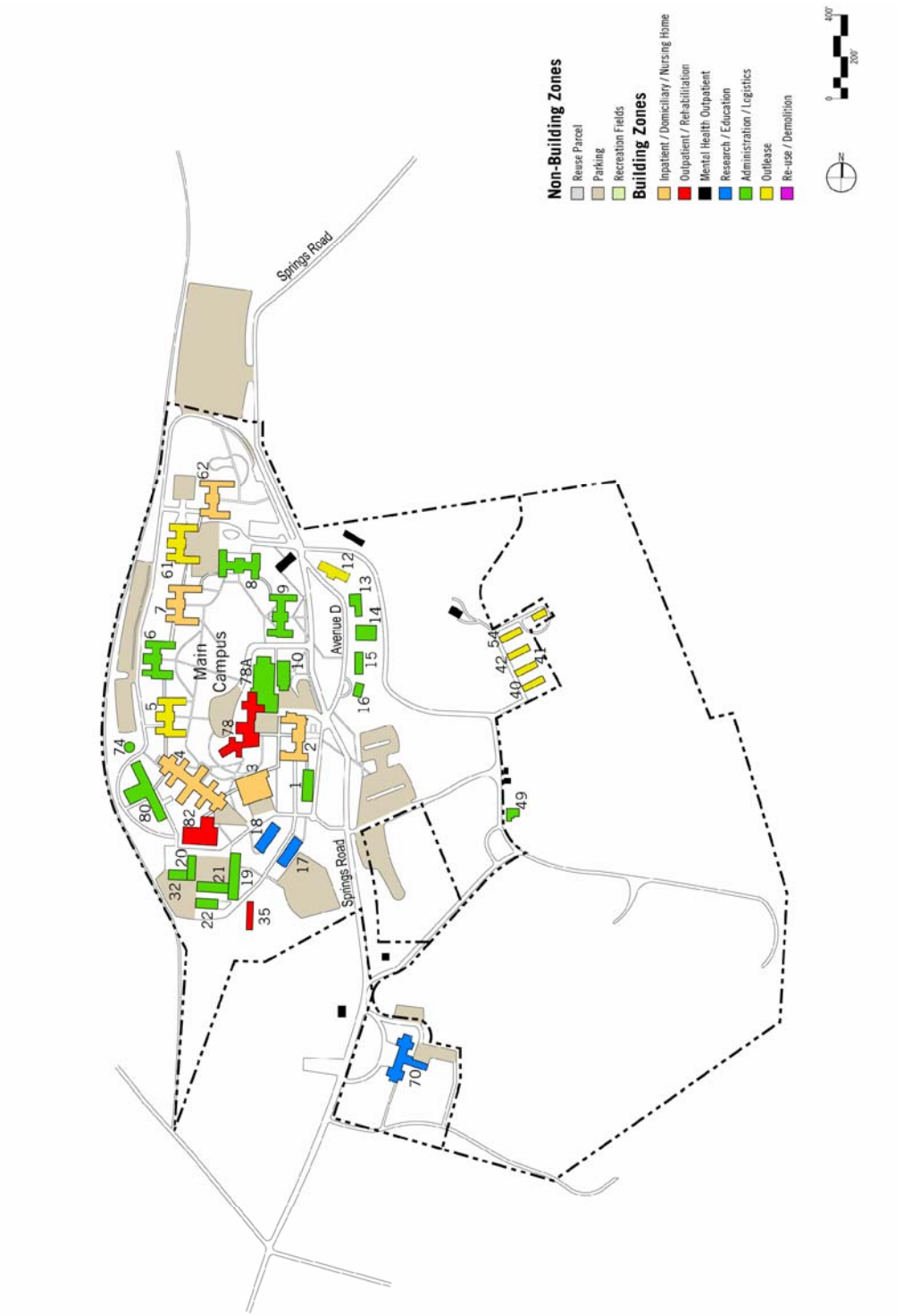


Figure 4: A Diagram of the Existing Current State Site Plan – Brockton Campus

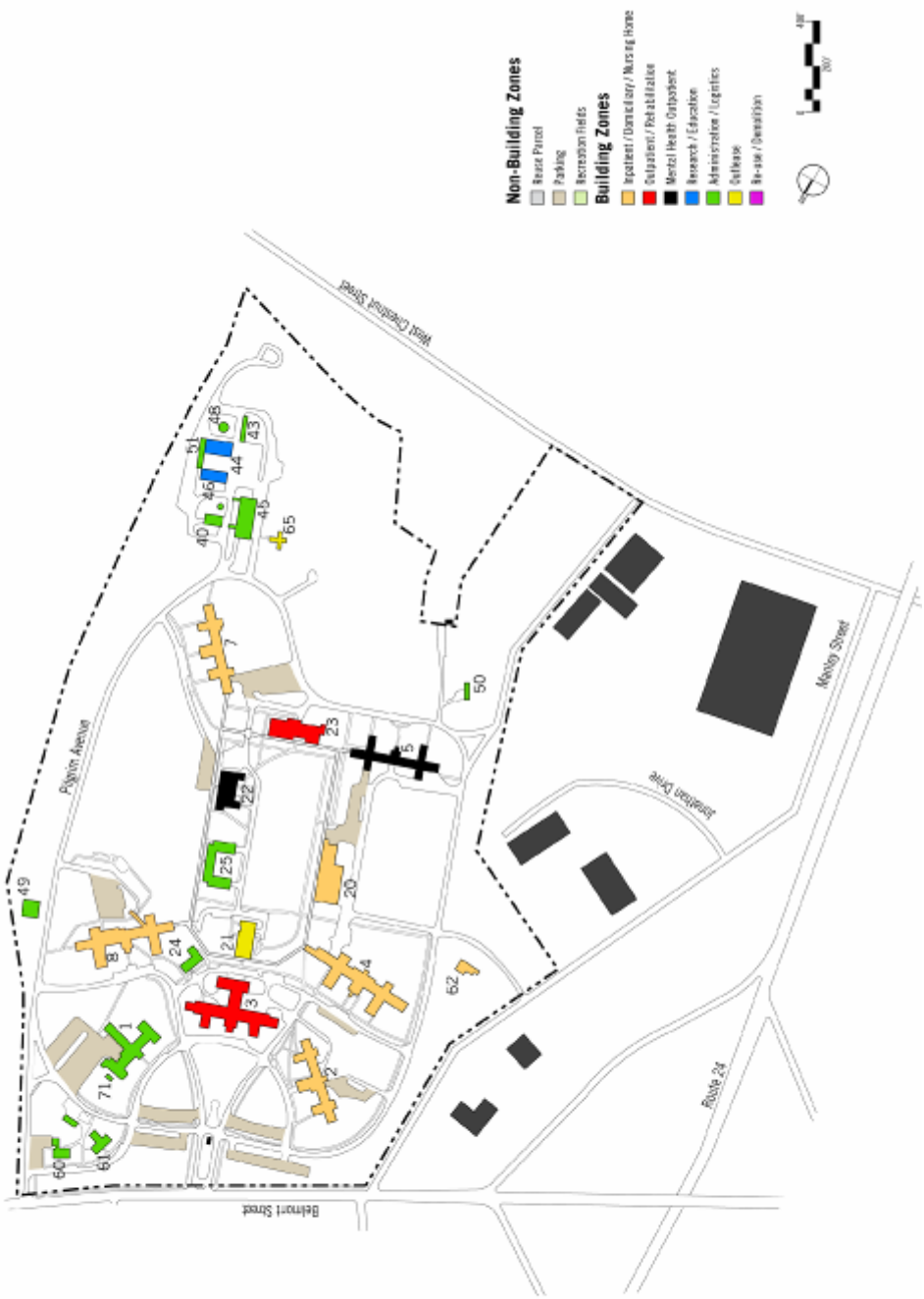


Figure 5: A Diagram of the Existing Current State Site Plan – Jamaica Plain Campus

Figure 6: A Diagram of the Existing Current State Site Plan – West Roxbury Campus

NOTE: Site plans indicate current state at the start of the study. Subsequent renovations and patient moves may change the departmental group (zone) of the primary occupants of each building.

- Functional Distribution on the Site: The current functional distribution of each site is outlined below.
    - Bedford: The campus is organized with a majority of the inpatient services located on the southern edge of the courtyard, where Building 4 serves as the nursing home. Outpatient services reside along the eastern edge of the courtyard near the entrance to the campus off of Springs Road. Logistical and administrative functions are scattered amongst the clinical buildings on campus with a majority of the logistical functions residing at the extreme south of the campus.
    - Brockton: The main Outpatient services are situated at the entrance to the site from Belmont Street in Building 3. The buildings at the southern edge of the courtyard also hold outpatient services including Outpatient Mental Health. A majority of the inpatient functions are located to the west of the entrance from Belmont Street, in Buildings 2 and 4. Logistical functions are located to the rear of the site in the Southeast corner.
    - Jamaica Plain: The urban campus is dominated by one large structure which houses a majority of the services on the property, which are mostly outpatient services. The periphery buildings on the site contain residential, research, and logistical services.
    - West Roxbury: The West Roxbury campus is arranged with a majority of the inpatient services situated in Building 1 at the center of the campus and Building 2 on the south side of historic Building 1. Outpatient services are incorporated into the addition of Buildings 3 on the north side of historic Building 1. Logistical and administrative functions lie to the east of the three main buildings at the back of the site.
- Topography: Each campus has varying topographic characteristics as outlined below.
    - Bedford: The campus is slightly rolling with grade changes no greater than 40 feet from the lowest to highest points on campus.
    - Brockton: The campus is relatively flat with no significant grade change.
    - Jamaica Plain: Being a small urban site, there is little slope to the campus. More critical to the campus is its relationship to the surrounding context.
    - West Roxbury: The campus has a gentle slope that runs from the northeast to the southwest that should not be a barrier to redevelopment.

- Landscaping: The various landscaping conditions for each campus are outlined below.

    - Bedford: The site is well planted with mature trees and bushes. Vehicular circulation is by a network of paved roads that encircle the main campus. Main site access to the campus is along Springs Road. Pedestrian circulation paths transverse the site at various locations including connecting parking across Springs Road to the main campus buildings.

    - Brockton: The campus contains many mature trees and bushes that are located around the buildings. Belmont Street provides the main vehicular entrance to the site as a series of paved roads that connect the buildings on the campus. Pedestrian paths and covered walkways transverse the site linking all the main clinical structures.

    - Jamaica Plain: Being an urban site, the campus contains little lawn or planted area. Paving covers a majority of the site to provide adequate parking. The main vehicular entrance to the campus is from South Huntington Avenue, also the street along which public transportation exists.

    - West Roxbury: The site is planted with some mature trees and bushes around the existing buildings and paved parking. Vehicular circulation is provided by a ring road that circles the main three buildings on the campus. The campus is accessed from the VFW Parkway. Pedestrian paths also connect the large surface parking lots and buildings to each other.

- Historic Buildings: The number of historic or historically significant buildings varies by campus as designated by the CAI. Historically significant buildings are those that were built before 1957. These buildings may require a ten-year process for approval to demolish or substantially alter their structural character. The following table lists the number of historic or historically eligible buildings on each campus.

Table 25: Historic Buildings Table

Campus	Historic Buildings
Bedford	51
Brockton	27
Jamaica Plain	6
West Roxbury	6

- Reuse of Historic Buildings: All of the BPOs propose the reuse of historic buildings. BPOs 8, 10, and 11 propose reuse of the entire historic complex at Bedford once it is consolidated, Jamaica Plain once it is consolidated in BPO 11, and West Roxbury once it is consolidated in BPO 10. Several historic buildings are now, or have in the past, been out-leased.

- Vacant Space: The table below outlines the current vacant space on each campus.

Table 26: Vacant Space Table

Campus	Vacant Space (BGSF)
Bedford	47,644
Brockton	123,117
Jamaica Plain	11,679
West Roxbury	0

CAI Scores and optimal use of the buildings

- Existing scores: According to VA's Capital Asset Inventory (CAI) database, the average condition assessment scores of existing buildings are 3 (The total range available is 1 to 5). In general, the lower the average building score the greater the amount of area required for renovation. Floor plates that are too narrow and floor to floor heights that are inadequate for current needs (e.g. central Heating, Ventilating, and Air Conditioning systems) contribute to the low ratings for these buildings. In addition, the existing functions have been compressed into inadequate space and more floor area is necessary to achieve the code complaint, modern, safe and secure environment that is envisioned. To take this a step further, as the average score drops, the likelihood of achieving the optimum relationships required is diminished. The extent of renovation of existing buildings varies by BPO.

- Low scores require more space: All buildings that are proposed for renovation will require a high level of renovation to achieve the modern, safe and secure status as defined for this project. The extent of proposed renovation efficiency for an existing building is based on the average condition assessment scores and other factors as described in the Stage II Assumptions. As a result, new construction will be more likely to achieve optimal projected areas because the floor width, structural enclosure, engineering systems and egress paths may be designed to the present standard of care rather than to a previous delivery model (which required less area). Clinical areas have the greatest demands for control of the environment, therefore, new construction or buildings with scores greater than 4.0 are recommended for these types of spaces. Administrative and support functions are a less demanding environment and as such, existing buildings with average scores greater then 3.0 are targeted for these functions.

- Scores cover Life Safety Codes only: Upgrades to comply with current VA standards and applicable building codes will be necessary even on the buildings that rate relatively high on the score since the rating covers only Life Safety code issues and not current nationwide and VA standards for health care facilities such as modifications to accommodate single bed rooms, private bathrooms accessible from within a patient room, and other quality of health care environment issues.

- Asbestos: All buildings containing asbestos will require abatement and disposal during major renovations. Where buildings containing hazardous materials are identified for demolition, similar appropriate abatement and disposal practices are required.

- Seismic: There are multiple buildings identified as having seismic non-exempt status on each campus. Where these buildings are identified for renovation, seismic deficiencies that require correction are included as part of the high renovation factor and associated construction duration to correct. Seismic corrections are incorporated into the renovations and will not additionally impact patient disruption.

- Complexity of Renovations: Renovations of the existing buildings will be complex due to the extent of upgrades required and the age of the buildings. Renovations will be faster and less disruptive if an entire building can be renovated at once. Every effort has been made to reduce disruption to patient and staff functions where possible in the proposed implementation.

Projected space requirements

- Space requirements derived from projected workload: The workload values projected to 2023 form the basis for the projected space requirements. The Projected Departmental Area Need in DGSF indicates existing departmental area, projected workload volumes and associated projected area need for the campus. (Factors used in generating the projected area need are indicated in the Stage II Assumptions). Projected area totals less than 1,000 BGSF are not considered significant.

- Projected areas organized by Departmental Group: Projected areas are distributed to building Departmental Groups (Zone) and converted to BGSF as indicated in The Area Distribution by Departmental Group (Zone).

BPO 1

The current State as projected out to 2013 and 2023 without any changes to program except as indicated in the Secretary's Decision.

Renovation and maintenance of existing buildings will occur to provide for a modern, safe, and secure healthcare environment, where conditions allow. The Bedford, Jamaica Plain and West Roxbury campuses will be renovated in existing buildings for projected workloads. Brockton will construct a new inpatient building to house the chronic spinal cord injury program while renovating existing structures.

Note: While there may be reuse potential of underutilized land and vacant buildings, reuse was not studied under this BPO.

Analysis of Capital Planning Outputs

- Site Plan: The Projected Baseline Site Plans illustrate the proposed Baseline campus configuration and locations of buildings for all four sites in the Boston study.

Figure 7: A Diagram of the Projected BPO 1 (Baseline) Bedford Site Plan

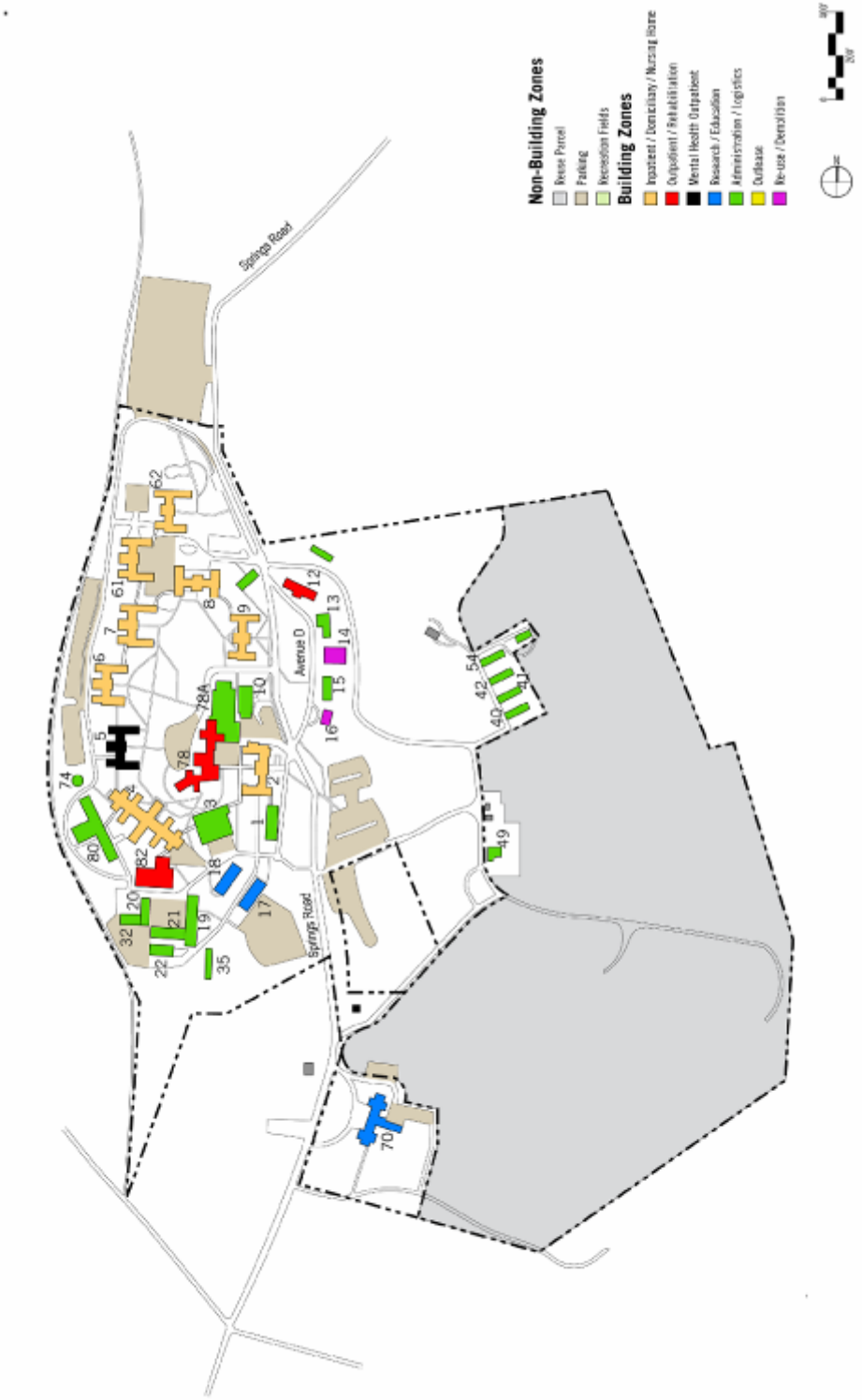


Figure 8: A Diagram of the Projected BPO 1 (Baseline) Brockton Site Plan

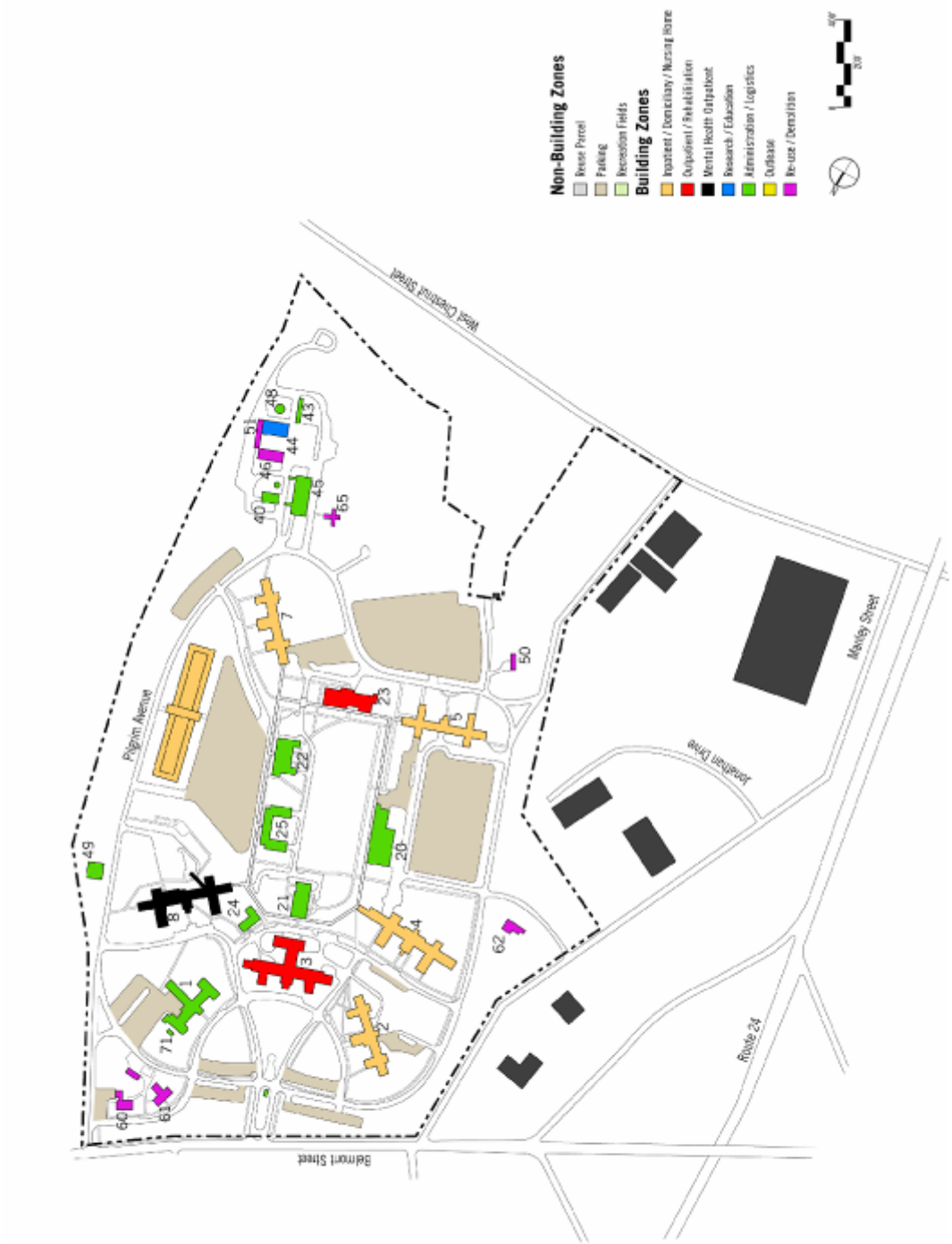


Figure 9: A Diagram of the Projected BPO 1 (Baseline) Jamaica Plain Site Plan

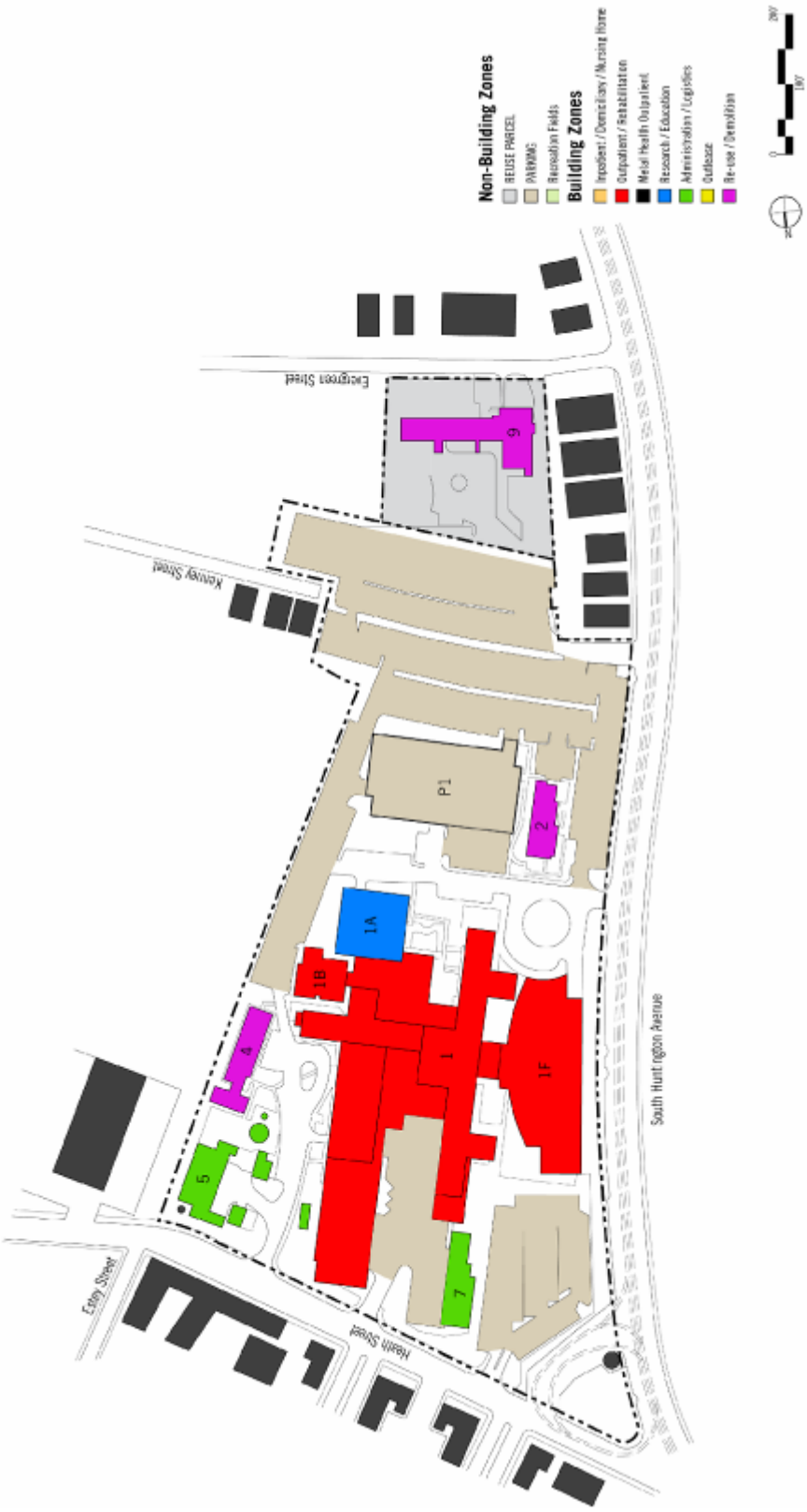
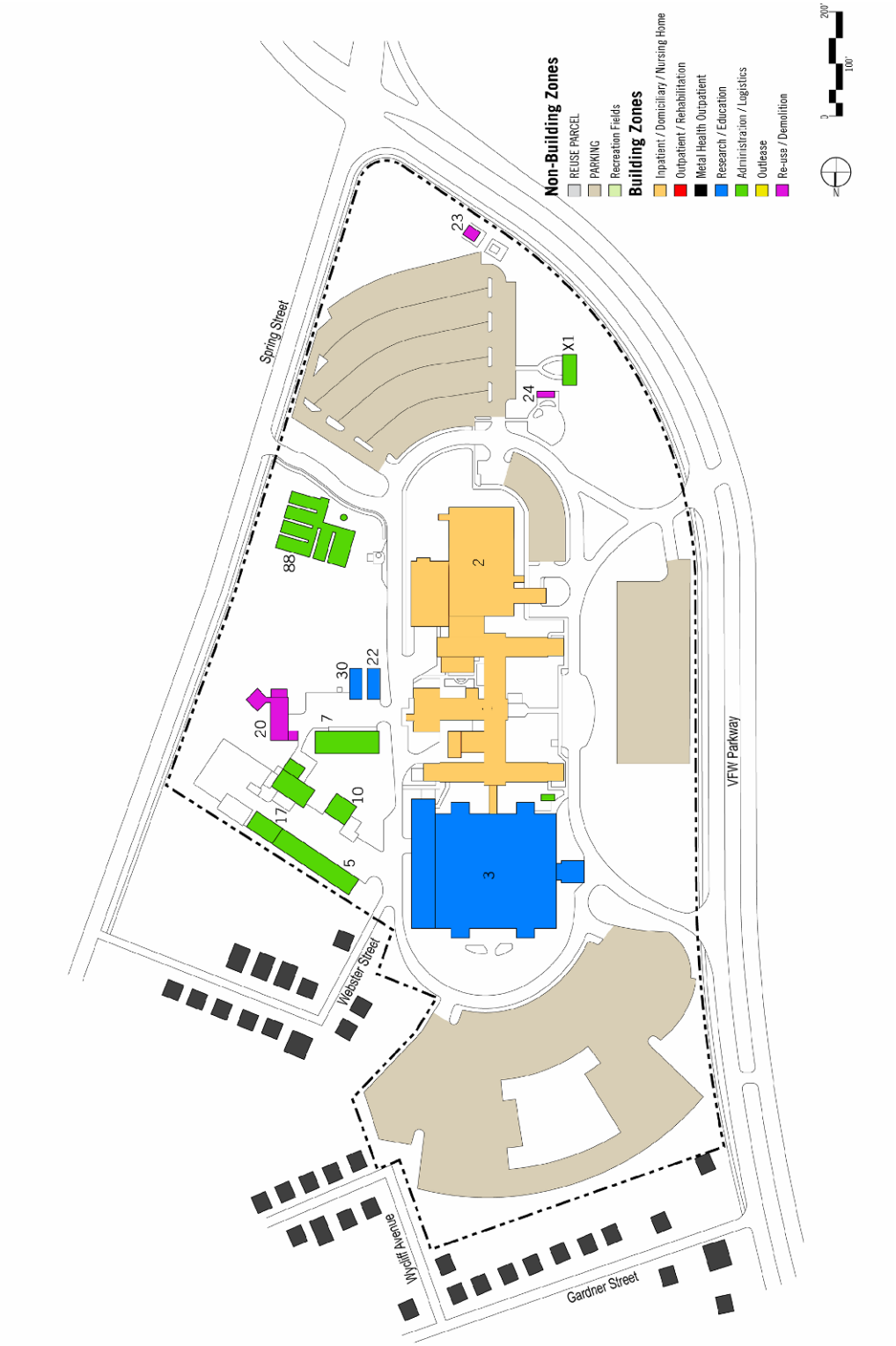


Figure 10: A Diagram of the Projected BPO 1 (Baseline) West Roxbury Site Plan



- Building Color Code: Similar to the Existing Current Stage Site Plan, the building color indicates the Departmental Group (Zone) of the **primary** occupants for each building. Matching the building color key used for the Existing Current State Site Plan, the proposed building color indicates the predominant occupancy of the building. Refer to the Legend regarding the Departmental Group (Zone) contained therein.

- Site Impact during Construction: Site area calculations for cost estimating purposes are identified in the table below. New surface parking and repaving of existing parking areas demand the greatest area and associated costs. Maintenance of the existing recreation fields is assumed.

- Campus Area and uses: The BPO 1 (Baseline) campus configuration as indicated on the site plan for each site is summarized in the table below. The area totals for primary activities on the portions of the site to be retained exclusively for VA-related functions are indicated in the Campus Area Total below.

Table 27: Campus Area Total Acreage – BPO 1 (Baseline)

Bedford Campus Total	**Acres**
Buildings and Landscaping	~89
Recreation	~0
Parking	~12
BPO Total (total of above)	~101
Existing Campus Total	~183
Brockton Campus Total	**Acres**
Buildings and Landscaping	~130
Recreation	~0
Parking	~16
BPO Total (total of above)	~146
Existing Campus Total	~146
Jamaica Plain Campus Total	**Acres**
Buildings and Landscaping	~10
Recreation	~0
Parking	~5
BPO Total (total of above)	~15
Existing Campus Total	~16
West Roxbury Campus Total	**Acres**
Buildings and Landscaping	~22
Recreation	~0
Parking	~8
BPO Total (total of above)	~30
Existing Campus Total	~30

- Land Parcels Available for Reuse: The Baseline does not allow land parcels to be designated for reuse. The configuration of land parcels for reuse varies with BPO. However, due to the configuration of proposed BPO 1, portions of the Bedford and Jamaica Plain campuses are available for reuse. The amount of land that is available for reuse is outlined in the table below. Reuse will not occur at Brockton or West Roxbury.

Table 28: Land Parcels Designated for Reuse – BPO1 (Baseline)

Reuse Parcels	Acres
Bedford Parcel 1	~82
Jamaica Plain Parcel 1	~1
Total	**83**

- Buildings Available for Reuse: The Baseline does not identify specific buildings for reuse. Where buildings are not required to accommodate the projected area need, they are marked for reuse or demolition and may be considered for reuse prior to the targeted demolition date. In this BPO the buildings that provide the greatest potential for reuse are Buildings 2 and 9 on the Jamaica Plain campus.

- Relocation of Functions: In the Baseline the functions have been reorganized on each campus as follows:

    - Bedford: Inpatient functions have been renovated and organized around the campus courtyard primarily to the north and west. Outpatient functions are located to the east of the courtyard. Research and administrative/logistical functions are renovated and remain on the periphery of the campus center.

    - Brockton: Outpatient functions are maintained at the front of the campus at the entrance from Belmont Street. Inpatient functions are housed in renovated buildings around the courtyard with the construction of a new inpatient building for the chronic spinal cord injury along Pilgrim Avenue. Logistical functions will remain at the south of this site.

    - Jamaica Plain: All functions on the campus will be consolidated into the renovated main Building 1 on the campus except for the logistical functions in Buildings 5 and 7.

    - West Roxbury: The main Buildings 1, 2, and 3 at the entrance to the campus will be renovated to house the inpatient, outpatient, and research functions on campus. Logistical and administrative functions will occur behind these buildings at the front of the campus.

- Optimal Use of Existing Buildings: The buildings at the four sites vary in age and appropriateness for optimal use in providing healthcare. A majority of the structures at Bedford were constructed more than 70 years ago and are not compatible with modern standards of design for health care. The floor plates are too small (resulting in poor functional adjacencies); the floor to floor heights are too low (resulting in mechanical systems with insufficient air volume); with a few exceptions, the bedrooms share toilets between rooms; and some bedrooms have more than 2 occupants. The conditions at the other sites are more suitable for healthcare since the buildings were constructed more recently and have undergone renovations over the years. However a portion of the buildings on both Brockton and West Roxbury are more then 50 years old and contain small floor plates resulting in buildings not compatible with modern standards of design for health care and low floor to floor heights (resulting in mechanical systems with

insufficient air volume). All sites will need significant renovations to allow for the buildings to be suitable for modern healthcare.

- Projected Workload Volumes for 2023: The projected square foot areas, as derived from workload volumes (see Stage II Assumptions) indicates that for both the Bedford and Jamaica Plain campuses, the desired functions can be accommodated in less square footage. The West Roxbury and Brockton sites will require additional square footage compared to the existing conditions. See the tables below. The changes can be attributed to the amount of vacant space on each campus and the change in workload volumes.

- Parking: Portions of the existing surface parking will be repaved and expanded to provide parking in the most convenient locations adjacent to building entries at each campus. Distribution of parking by departmental group is indicated in the following tables. There is sufficient land available to meet the parking demand. Therefore new structured parking is not required for any campus; however, renovations will occur to the existing structured parking at Jamaica Plain to at least a minimal level.

Table 29: Parking Distribution – Bedford BPO 1 (Baseline)

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	159	0	63,600	0
Nursing Home	242	0	96,800	0
Domiciliary	69	0	27,600	0
Behavioral Health	38	0	15,200	0
Ambulatory Services	390	0	156,000	0
Research	96	0	38,400	0
Administration	206	0	82,400	0
Logistics	15	0	6,000	0
Total	**1215**	**0**	**486,000**	**0**

Table 30: Parking Distribution – Brockton BPO 1 (Baseline)

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	586	0	234,400	0
Nursing Home	145	0	58,000	0
Domiciliary	119	0	47,600	0
Behavioral Health	31	0	12,400	0
Ambulatory Services	509	0	203600	0
Research	18	0	7,200	0
Administration	196	0	78,400	0
Logistics	15	0	6,000	0
Total	**1619**	**0**	**647,600**	**0**

Table 31: Parking Distribution – Jamaica Plain BPO 1 (Baseline)

Paring Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	40	0	16,000	0
Nursing Home	0	0	0	0
Domiciliary	0	0	0	0
Behavioral Health	0	0	0	0
Ambulatory Services	347	149	138,600	29,701
Research	100	0	40,000	0
Administration	55	0	22,000	0
Logistics	10	0	4,000	0
Total	**552**	**149**	**220,600**	**29,701**

Note: Parking demand for Jamaica Plain is decreased based upon the urban setting and accessibility of the campus to public transportation. Parking totals for the campus represent the total parking required for the campus however distribution between departments may vary depending upon specific demand by department.

Table 32: Parking Distribution – West Roxbury BPO 1 (Baseline)

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	292	0	116,800	0
Nursing Home	6	0	2,400	0
Domiciliary	2	0	800	0
Behavioral Health	4	0	1,600	0
Ambulatory Services	468	0	187,200	0
Research	62	0	24,800	0
Administration	72	0	28,800	0
Logistics	15	0	6,000	0
Total	**921**	**0**	**368,400**	**0**

Note: Parking totals for the campus represent the total parking required for the campus however distribution between departments may vary depending upon specific demand by department.

- Construction Phasing: Phasing for each campus will be in multiple phases to allow the numerous buildings on each campus to be renovated in order to provide for a modern, safe, and secure healthcare environment.

    - Bedford: The utilization of existing vacancies on the campus coupled with the temporary relocation of administrative space allows for a series of renovations that allow for clinical functions to be relocated within existing buildings.

    - Brockton: The construction of the new inpatient building designed for spinal cord injury will allow for Building 8 to be vacated for renovation. This addition of vacant space permits for a series of renovations which will occur in phases enabling programs to move from existing space to renovated space. Utilizing the existing vacant space on campus will also allow renovations to occur in a more efficient method, minimizing the number of total phases.

- Jamaica Plain: Construction at Jamaica Plain will be in multiple phases as various floors of the tower will be renovated to allow for the relocation of services into newly renovated space, freeing up square footage for the next renovation to occur.

- West Roxbury: Phasing at West Roxbury will need to occur at the department level as various services will need to be relocated throughout the buildings to free up square footage to allow for the renovation of the 3 main buildings; Buildings 1, 2, and 3.

- Construction Schedule: Schedules for construction activities are intended to identify relative duration of new construction or renovated work in order to calculate occupancy date for utilization of space and escalation costs. These schedules provide a base on which the implementation plan activities will be incorporated. The Schedule indicates a brief description of the individual building construction projects and indicates the construction sequence and duration for this option. Commissioning of engineering systems will occur the last 20% of each project's duration.

- Existing Building Maintenance Costs: Existing, unaltered buildings retained on the campus for BPO 1 (Baseline) require ongoing and periodic maintenance costs including buildings that are scheduled for demolition to the point where demolition begins.

- Capital Cost Estimate: An estimate of projected new construction and renovation costs is indicated in The BPO Capital Cost Estimate. The Capital costs are based on campus-wide area projections by Departmental Group (Zone) as indicated in the Projected BPO areas by Departmental Group (Zone).

- Construction Cost depends on Function: Construction costs are derived from projected area requirements by Building and non-Building Departmental Groups (Zones).

- Soft Costs Standardized: Approved factors as stated in the assumptions for soft costs (such as professional fees, furnishings, and equipment) are based on consultant experience and VA standards.

Evaluation of Baseline using Capital Criteria:

- Consolidation of Vacated Space: The area totals of existing vacant space compared to the vacant space in BPO 1 (Baseline) for each campus is outlined in the following tables. Both the Bedford and Brockton sites see a decrease in vacant space based on the larger square footage needs required when renovating inefficient existing buildings to provide for a modern, safe and secure healthcare environment. West Roxbury sees no change in vacant space because the campus currently does not contain any and will not in the future. Jamaica Plain has a large increase in vacant space due to the fact that the required square footage to be housed on campus will decrease and the existing buildings on the campus contain a large gross square footage.

Table 33: Percentage of Vacant Space – Bedford BPO 1 (Baseline)

Title	Vacant BGSF
Existing Vacant	47,644
Vacant BPO	4,181
Variance	-43,463
Variance Percent	-91.22%

Table 34: Percentage of Vacant Space – Brockton BPO 1 (Baseline)

Title	Vacant BGSF
Existing Vacant	123,117
Vacant BPO	73,854
Variance	-49,263
Variance Percent	-40.01%

Table 35: Percentage of Vacant Space – Jamaica Plain BPO 1 (Baseline)

Title	Vacant BGSF
Existing Vacant	11,679
Vacant BPO	190,842
Variance	179,163
Variance Percent	1534.06%

Table 36: Percentage of Vacant Space – West Roxbury BPO 1 (Baseline)

Title	Vacant BGSF
Existing Vacant	0
Vacant BPO	0
Variance	0
Variance Percent	0

- Consolidation of Underutilized Space: The tables below compare the total BGSF for BPO 1 to the projected ideal BGSF for the option based upon the workload. Because there is a substantial amount of renovation for BPO 1 at all four campuses, there is an increase of square footage needed to achieve a modern, safe, and secure environment.

Table 37: Percentage of Underutilized Space – Bedford BPO 1 (Baseline)

Title	Total
Projected Ideal BGSF Based on In-House Workload	804,452
Proposed BPO BGSF	1,098,210
Underutilized Space	293,758
Variance by Percentage	27%

Table 38: Percentage of Underutilized Space – Brockton BPO 1 (Baseline)

Title	Total
Projected Ideal BGSF Based on In-House Workload	974,256
Proposed BPO BGSF	1,307,378
Underutilized Space	333,122
Variance by Percentage	25%

Table 39: Percentage of Underutilized Space – Jamaica Plain BPO 1 (Baseline)

Title	Total
Projected Ideal BGSF Based on In-House Workload	474,184
Proposed BPO BGSF	873,297
Underutilized Space	399,113
Variance by Percentage	46%

Table 40: Percentage of Underutilized Space – West Roxbury BPO 1 (Baseline)

Title	Total
Projected Ideal BGSF Based on In-House Workload	435,261
Proposed BPO BGSF	532,636
Underutilized Space	97,375
Variance by Percentage	18%

- Timeliness of Completion: The proposed time for completion of work at each campus in BPO 1 is outlined in the following table from project initiation in January 2009 at all four sites to the completion of the multi-phased projects at each site.

Table 41: Total Construction Duration – BPO 1 (Baseline)

Site	Start	Complete	Months
Bedford	01/01/09	07/01/2018	114
Brockton	01/01/09	07/01/2018	114
Jamaica Plain	01/01/09	07/01/2016	90
West Roxbury	01/01/09	07/01/2018	114

- Timeliness of Urgent Seismic Corrections: There are multiple buildings that are classified as "Seismic Non-exempt" on each campus. These buildings which are to be incorporated into this BPO will be renovated to rectify the seismic deficiencies as part of the implementation plan. The urgency to correct seismic deficiencies in existing buildings that will be renovated in this BPO was also factored into the proposed phasing sequence. BPO 1 (Baseline) achieves completion of renovations to all buildings that will be retained with seismic non-exempt status by 2018. All seismic corrections at Brockton will occur by 2018. West Roxbury will have the last "Seismic Non-exempt" building finished with renovations in 2018; however 2015 is the year when the last "Seismic Non-exempt"

structure that contains clinical services will be renovated. Jamaica Plain will correct all "Seismic Non-exempt" buildings by 2016. "Seismic Non-exempt" buildings on the Bedford campus will be corrected by 2018. Buildings with seismic deficient status that are not projected for VA occupancy will be demolished as they become eligible for demolition based on the implementation schedule.

- Size and Complexity of Capital Plan: Projected areas (BGSF) based on 2023 workload volumes indicates a change to the four campuses as indicated in the following tables.

  - Bedford: The most notable change on the Bedford campus is the projected increase in the inpatient functions of Acute and Nursing Home. This can be attributed to the fact that more square footage will be required to meet the projected workloads as services are placed into existing buildings that are renovated to provide for a modern, safe, and secure environment.

  - Brockton: The most noteworthy change on the Brockton campus is the projected increase in Acute Care. This is due to the fact that more square footage will be required to meet the projected workloads as services are located into existing buildings that are renovated to provide for a modern, safe, and secure environment. The increase in the workload for Spinal Cord Injury, which created the need for new construction, also increased the projected square footage for Acute Care as compared to the existing BGSF.

  - Jamaica Plain: It is important to note that the campus is projecting a significant decrease in all zones except for Research and Logistics despite the fact that the total BGSF is not changing significantly. This can be attributed to a decrease in workload for all clinical functions and a campus where the buildings are more suited for renovation to provide for a modern, safe, and secure healthcare environment.

  - West Roxbury: The most notable change on the campus is the increase of Acute Care on campus with a decrease in Ambulatory services on campus. The offset in square footage between zones causes the campus to remain close to its existing total BGSF.

Table 42: Campus Area Change – Bedford BPO 1 (Baseline)

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	82,098	160,954	84,063	74,956	189,323	86,766	178,014	172,543	127,628	**1,156,345**
Projected (BGSF)	129,326	294,501	80,744	59,846	136,904	116,222	170,738	109,929	120,340	**1,218,550**
Variance (BGSF)	47,228	133,547	-3,319	-15,110	-52,419	29,456	-7,276	-62,614	-7,288	**62,205**
Variance	57.53%	82.97%	-3.95%	-20.16%	-27.69%	33.95%	-4.09%	-36.29%	-5.71%	**5.38%**

Note: An additional 120,340 BGSF of administrative function will be included at Bedford as the VISN and VA national offices are to be located on the campus. This BGSF was derived from existing out lease square footage numbers.

Table 43: Campus Area Change – Brockton BPO 1 (Baseline)

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	170,700	89,465	83,467	94,656	245,517	13,700	165,282	169,834	114,160	**1,146,781**
Projected (BGSF)	338,677	149,980	129,521	52,960	177,894	23,077	177,367	257,902	0	**1,307,378**
Variance (BGSF)	167,977	60,515	46,054	-41,696	-67,623	9,377	12,085	88,068	-114,160	**160,597**
Variance	98.40%	67.64%	55.18%	-44.05%	-27.54%	68.45%	7.31%	51.86%	-0.00%	**14.00%**

Table 44: Campus Area Change – Jamaica Plain BPO 1 (Baseline)

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	64,447	16,915	43,730	75,623	387,821	108,495	84,788	132,411	39,730	**953,960**
Projected (BGSF)	27,367	2,007	2,007	15,656	271,719	157,799	61,668	335,074	0	**873,297**
Variance (BGSF)	-37,080	-14,908	-41,723	-59,967	-116,102	49,304	-23,120	202,663	-39,730	**-80,663**
Variance	-57.54%	-88.13%	-95.41%	-79.30%	-29.94%	45.44%	-27.27%	153.06%	-100.00%	**-8.46%**

Table 45: Campus Area Change – West Roxbury BPO 1 (Baseline)

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	146,680	11,900	9,686	12,536	193,784	41,140	33,709	76,523	728	**526,686**
Projected (BGSF)	197,834	5,632	1,671	3,124	151,121	61,004	68,992	43,258	0	**532,636**
Variance (BGSF)	51,154	-6,268	-8,015	-9,412	-42,663	19,864	35,283	-33,265	-728	**5,950**
Variance	34.87%	-52.67%	-82.75%	-75.08%	-22.02%	48.28	104.67%	-43.47%	-100.00%	**1.13%**

- Patient Moves: In BPO 1, multiple buildings on each campus will be renovated to some extent over multiple phases requiring disruption of services. Each site will need to be phased properly to minimize the amount of patients moves required to carry out critical renovations.

    - Bedford: Patient moves at the Bedford campus will require the temporary relocation of all Domiciliary functions in Bldg 7 off campus to free up additional vacant space allowing for buildings to be renovated.

    - Brockton: The construction of a new inpatient facility allows for a minimum of patient moves because square footage is gained as the spinal cord injury moves into the newly constructed facility. This creates a "domino effect" where functions and services can utilize the vacant space in Building 8, made available by relocating the spinal cord injury program, for renovations.

    - Jamaica Plain: The multiple floors of the tower on Jamaica Plain allows for individual floors to be renovated without disrupting or creating multiple moves

for patients and services. As floors or areas are renovated, patients can move into the new space from their existing space.

- West Roxbury: Patient moves on the West Roxbury campus will need to occur within the main buildings on campus to allow a series of renovations to occur. This enables the campus to remain functioning while portions of the buildings are renovated.

- Historic Buildings Altered: There are 91 total buildings identified as historic in the CAI across all four campuses. The breakdown is outlined in the table below. For this BPO, all will be renovated or demolished.

Table 46: Historic Buildings Altered – Bedford BPO 1

Bedford	**Quantity**
Total Historic or Historically Eligible	52
Altered Historic Buildings	52
Brockton	**Quantity**
Total Historic or Historically Eligible	27
Altered Historic Buildings	27
Jamaica Plain	**Quantity**
Total Historic or Historically Eligible	6
Altered Historic Buildings	6
West Roxbury	**Quantity**
Total Historic or Historically Eligible	6
Altered Historic Buildings	6

Note: Historically eligible buildings are classified as any building that is more then 50 years old.

BPO 8

The Bedford campus will be consolidated to Brockton while a new CBOC will be established in the Bedford area. The Jamaica Plain and West Roxbury campuses will be re-sized for the projected workloads.

The inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure while retaining newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI&D unit, and returning veterans' services.

Services currently located at the Jamaica Plain and West Roxbury campuses will remain within the VA Boston Healthcare System (BHS). Ambulatory surgical services and related specialties will be relocated from Jamaica Plain to West Roxbury. West Roxbury will be right-sized by renovating existing buildings and constructing a multi-story addition to Building 2 as well as a new parking structure. Jamaica Plain will be right-sized by incorporating campus functions into existing buildings and constructing additional parking. Services from the Causeway CBOC will be provided at Jamaica Plain.

Note: As a result, all of the Bedford campus and a portion of the Jamaica Plain campus will be made available for reuse.

Analysis of Capital Planning Outputs

- Site Plan: The Projected BPO 8 Site Plans (see the following figures) illustrate the proposed campus configuration and locations of buildings for all four sites in the Boston study for BPO 8.

Figure 11: A Diagram of the Projected BPO 8 Bedford Site Plan

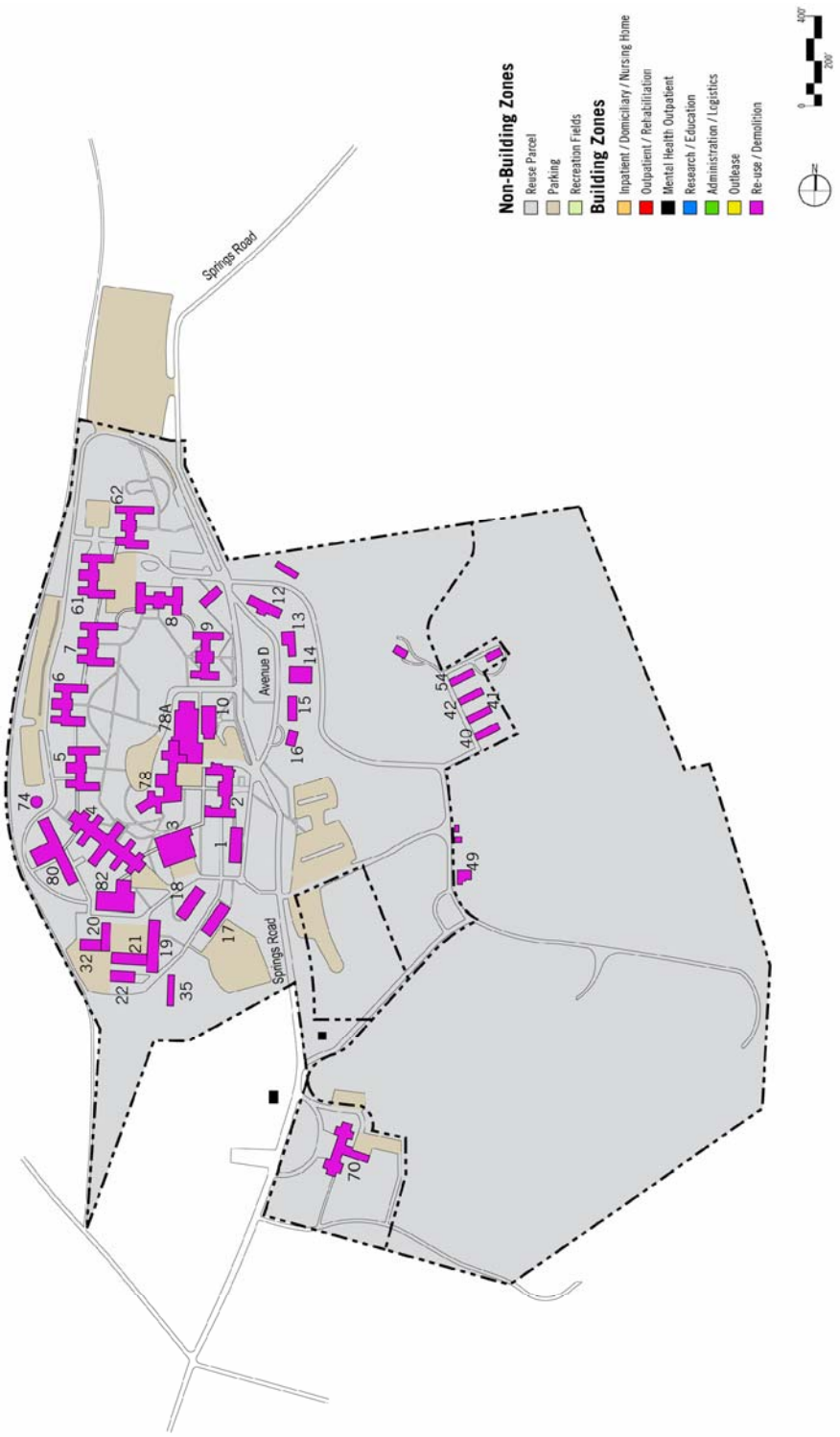


Figure 12: A Diagram of the Projected BPO 8 Brockton Site Plan

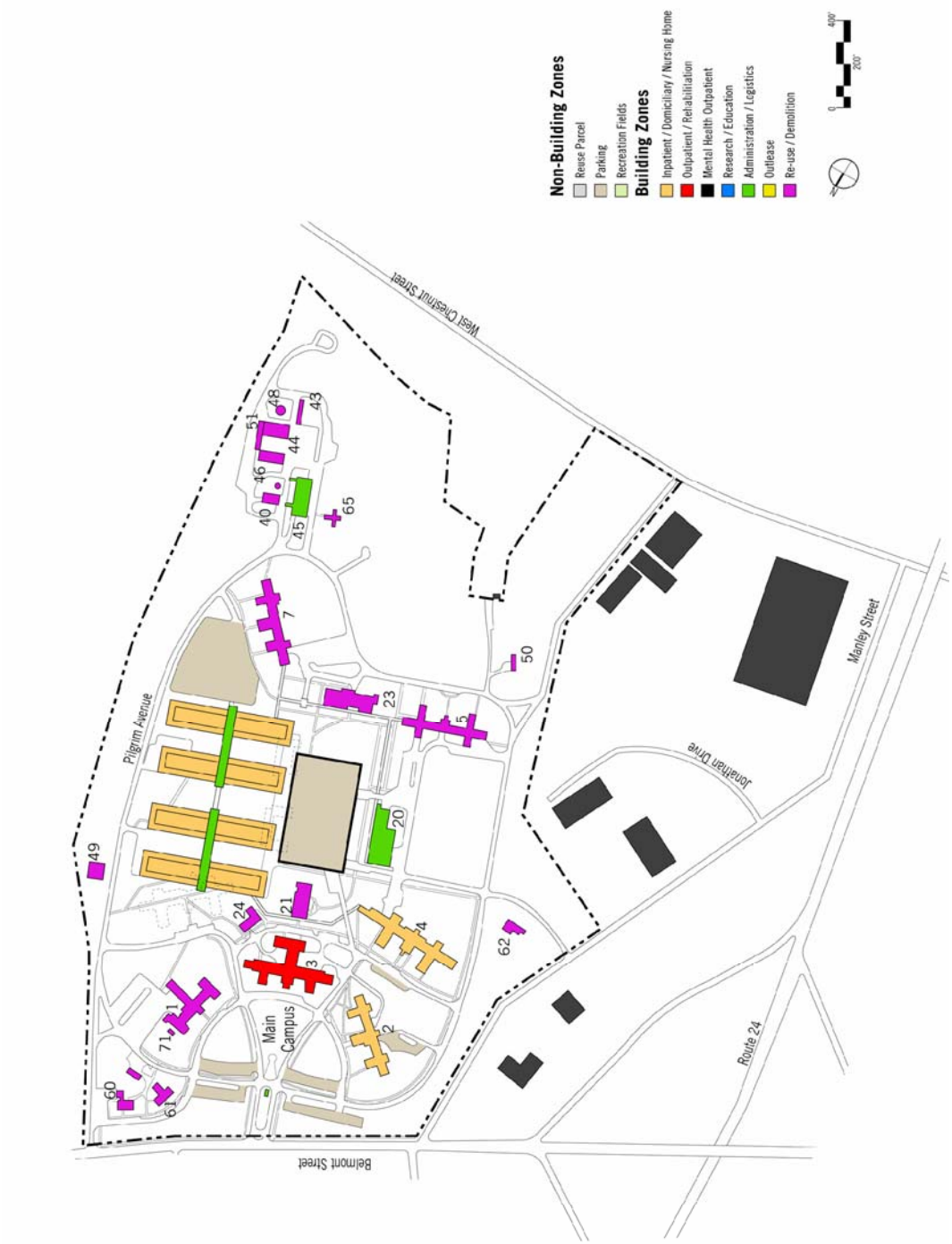


Figure 13: A Diagram of the Projected BPO 8 Jamaica Plain Site Plan

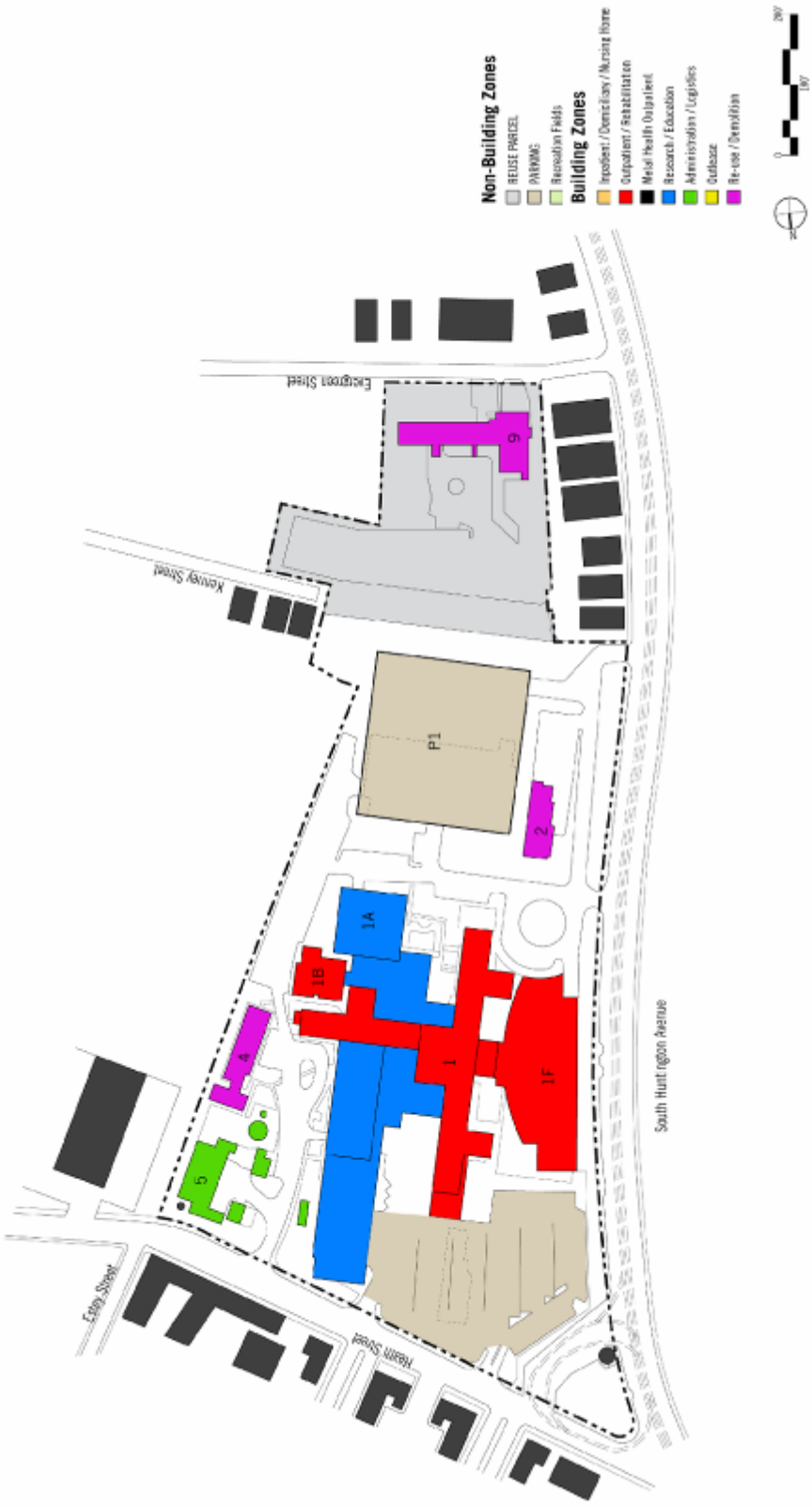
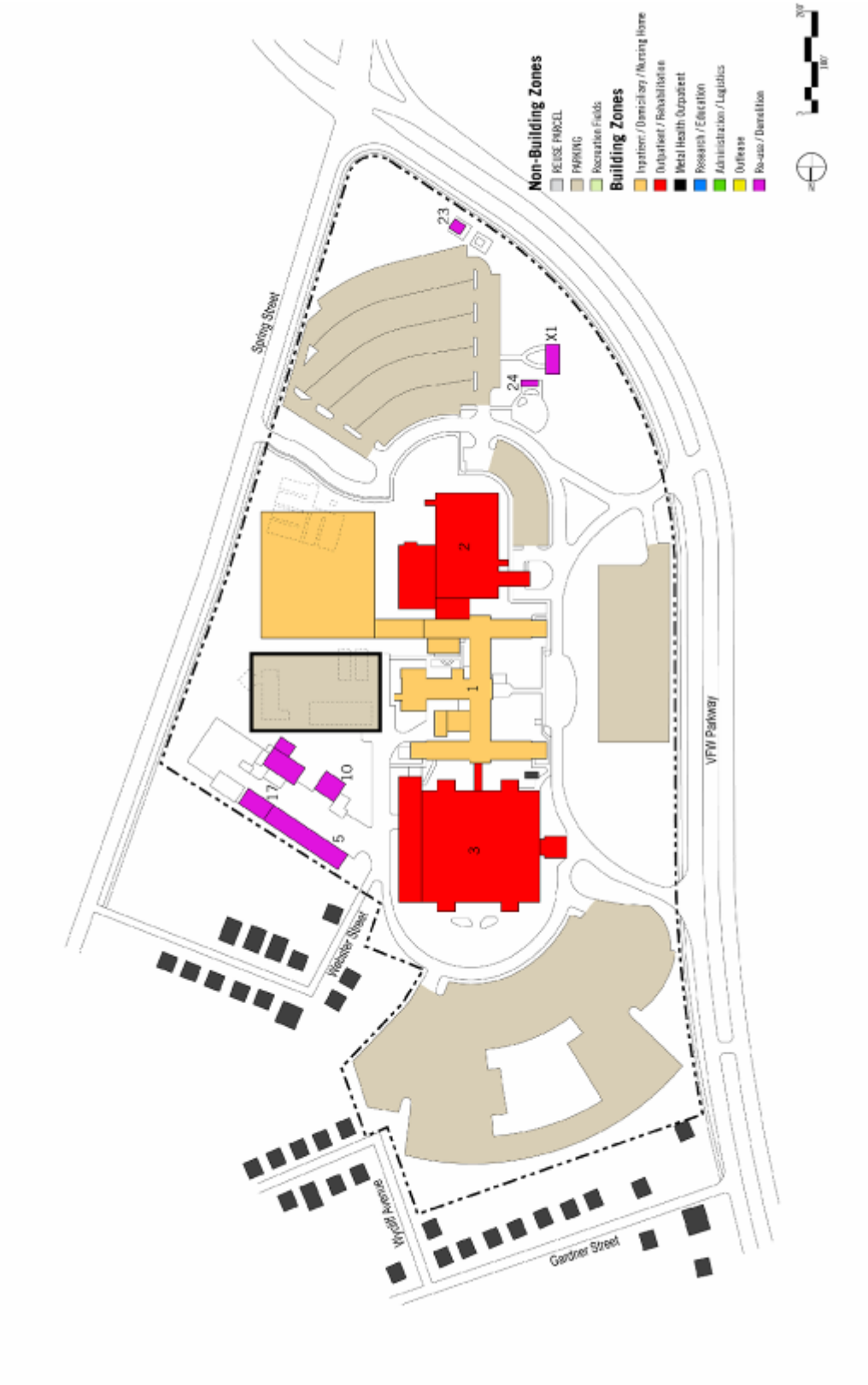


Figure 14: A Diagram of the Projected BPO 8 West Roxbury Site Plan



- Building Color Code: Similar to the Existing Current Stage Site Plan, the building color indicates the Departmental Group (Zone) of the **primary** occupants for each building. Matching the building color key used for the Existing Current State Site Plan, the proposed building color indicates the predominant occupancy of the building. Refer to the Legend regarding the Departmental Group (Zone) contained therein.

- Site Impact during Construction: Site area calculations for cost estimating purposes are identified in the table below. New surface and structured parking and repaving of existing parking areas demand the greatest area and associated costs. Maintenance of the existing recreation fields is assumed.

- Campus Area and uses: The BPO 8 campus configuration as indicated on the site plan for each site is summarized in the table below. The area totals for primary activities on the portions of the site to be retained exclusively for VA-related functions are indicated in the Campus Area Total below.

Table 47: Campus Area Total Acreage – BPO 8

Bedford Campus Total	**Acres**
Buildings and Landscaping	0
Recreation	0
Parking	0
BPO Total (total of above)	0
Existing Campus Total	~183
Brockton Campus Total	**Acres**
Buildings and Landscaping	~131
Recreation	~0
Parking	~15
BPO Total (total of above)	~146
Existing Campus Total	~146
Jamaica Plain Campus Total	**Acres**
Buildings and Landscaping	~9.5
Recreation	~0
Parking	~4
BPO Total (total of above)	~13.5
Existing Campus Total	~16
West Roxbury Campus Total	**Acres**
Buildings and Landscaping	~22
Recreation	~0
Parking	~8
BPO Total (total of above)	~30
Existing Campus Total	~30

- Land Parcels Available for Reuse: The configuration of land parcels for reuse varies with BPO. However, due to the configuration of proposed BPO 8, all of the Bedford Campus and a portion of the Jamaica Plain campus are available for reuse. The amount of land that is available for reuse is outlined in the table below. Reuse will not occur at Brockton or West Roxbury.

Table 48: Land Parcels Designated for Reuse – BPO 8

Reuse Parcels	Acres
Bedford Parcel 1	~183
Jamaica Plain Parcel 1	~2.5
Total	**~185.5**

- Buildings Available for Reuse: Where buildings are not required to accommodate the projected area need, they are marked for reuse or demolition and may be considered for reuse prior to the targeted demolition date. In this BPO the buildings that provide the greatest potential for reuse are Building 9 on the Jamaica Plain campus, all buildings on the Bedford campus, and Buildings 1, 5, 7, and 23 on the Brockton campus.

- Relocation of Functions: In BPO 8, the functions have been re-organized on each campus as follows:

    - Bedford: The campus is being consolidated into the Brockton campus and therefore all functions will be moved off site.

    - Brockton: The majority of outpatient functions will be maintained at the front of the campus at the entrance from Belmont Street in Building 3. A portion of the additional outpatient services will be provided in the new buildings being constructed on site. Inpatient functions are to be housed in renovated Buildings 2 and 4 and in the newly constructed buildings at the east of the site along Pilgrim Avenue. Logistical and administrative functions will be incorporated into Building 20 and in the renovated and newly constructed buildings.

    - Jamaica Plain: All functions on the campus will be consolidated into the renovated main Building 1 and its attached additions on the campus except for the logistical functions provided in Building 5.

    - West Roxbury: The main Buildings 1, 2, and 3 at the entrance to the campus will be renovated to house the inpatient, outpatient, and research functions on campus. Building 1 will primarily serve inpatient functions while Buildings 2 and 3 will house outpatient services. A new addition will be constructed, attached to Building 1, to serve as additional square footage to serve inpatient and outpatient functions. Logistical and administrative functions will be incorporated into the renovated and newly constructed buildings.

- Optimal Use of Existing Buildings: The buildings at the four sites vary in age and appropriateness for optimal use in providing healthcare. A majority of the structures at Bedford were constructed more than 70 years ago and are not compatible with modern standards of design for health care. The floor plates are too small (resulting in poor functional adjacencies); the floor to floor heights are too low (resulting in mechanical systems with insufficient air volume); with a few exceptions, the bedrooms share toilets between rooms; and some bedrooms have more than 2 occupants. The conditions at the other sites are more suitable for healthcare since the buildings were constructed more recently and have undergone renovations over the years. However a portion of the

buildings on both Brockton and West Roxbury are more then 50 years old and contain small floor plates resulting in buildings not compatible with modern standards of design for health care and low floor to floor heights (resulting in mechanical systems with insufficient air volume). All sites will need significant renovations to allow for the buildings to be suitable for modern healthcare.

- Projected Workload Volumes for 2023: The projected square foot areas, as derived from workload volumes (see Stage II Assumptions) indicates that the West Roxbury and Brockton sites will require additional square footage compared to the existing conditions which will be provided through new construction. Bedford is being consolidated into Brockton so it will no longer need any area to provide services. The Jamaica Plain campus will see a decrease in required square footage. See the tables below. The changes can be attributed to the amount of vacant space on each campus and the change in workload volumes.

- Parking: Portions of the existing surface parking will be repaved and expanded to provide parking in the most convenient locations adjacent to building entries at each campus. Distribution of parking by departmental group is indicated in the following tables. There is sufficient land available to meet a majority of the parking demand however new structured parking will be constructed at the Brockton, Jamaica Plain, and West Roxbury sites to provide the required number of parking spaces. Public transportation also services the West Roxbury and Jamaica Plain campuses helping to reduce total demand on parking.

Table 49: Parking Distribution – Bedford BPO 8

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	0	0	0
Nursing Home	0	0	0	0
Domiciliary	0	0	0	0
Behavioral Health	0	0	0	0
Ambulatory Services	0	0	0	0
Research	0	0	0	0
Administration	0	0	0	0
Logistics	0	0	0	0
Total	**0**	**0**	**0**	**0**

Table 50: Parking Distribution – Brockton BPO 8

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	762	0	304,800
Nursing Home	0	439	0	175,602
Domiciliary	207	0	82,800	0
Behavioral Health	0	42	0	16,800
Ambulatory Services	0	766	0	306,402
Research	67	0	26,800	0
Administration	345	0	138,000	0
Logistics	15	0	6,000	0
Total	**634**	**2,009**	**253,600**	**803,604**

Table 51: Parking Distribution – Jamaica Plain BPO 8

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	40	0	16,002
Nursing Home	0	0	0	0
Domiciliary	0	0	0	0
Behavioral Health	0	0	0	0
Ambulatory Services	0	495	0	198,000
Research	70	31	28,000	12,000
Administration	55	0	22,000	0
Logistics	10	0	4,000	0
Total	**135**	**566**	**54,000**	**226,002**

Note: Parking demand for Jamaica Plain is decreased based upon the urban setting and accessibility of the campus to public transportation. Parking totals for the campus represent the total parking required for the campus however distribution between departments may vary depending upon specific demand by department.

Table 52: Parking Distribution – West Roxbury BPO 8

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	300	0	120,000
Nursing Home	0	0	0	0
Domiciliary	0	0	0	0
Behavioral Health	0	0	0	0
Ambulatory Services	760	40	304,000	16,000
Research	0	50	0	20,000
Administration	100	0	40,000	0
Logistics	10	0	4,000	0
Total	**870**	**390**	**348,000**	**156,000**

Note: An additional 241 parking spaces totaling 96,272 sf of structured parking will be included at West Roxbury as the VISN and VA national offices are relocated to the campus.

- Construction Phasing: Phasing for each campus will be in multiple phases to allow for the numerous buildings on each campus to be renovated and new construction to occur in order to provide for a modern, safe, and secure healthcare environment.

- Bedford: The campus will be closing as it is consolidated to the Brockton campus. Therefore phasing is not required as patients and services will be relocated at one time when the Brockton campus is finished with renovations and construction.

- Brockton: The demolition of Buildings 22 and 25 early in the project will facilitate the construction of one of the new inpatient facilities, specifically designed to house the SCI&D (Spinal Cord Injury and Disorder) currently located in Building 8. Once construction of the first building is completed, demolition can occur on Building 8, allowing for the construction of the second new building on the campus. While the new construction is occurring, Buildings 2, 3, 4, and 20 will be renovated allowing for the services to be consolidated on the campus. Utilization of vacant space and buildings designated for reuse as swing space during construction allows for timely and efficient phasing.

- Jamaica Plain: Construction at Jamaica Plain will be in multiple phases as various floors of the tower will be renovated to allow for the relocation of services into newly renovated space, freeing up square footage for the next renovation to occur.

- West Roxbury: Phasing at West Roxbury will need to occur at the department level as various services will need to be relocated throughout the buildings to free up square footage to allow for the renovation of the three main buildings; Buildings 1, 2, and 3. After the new building is constructed, demolition of Buildings 7, 20, 22, and 30 facilitates the construction of the new parking structure.

- Construction Schedule: Schedules for construction activities are intended to identify relative duration of new construction or renovated work in order to calculate occupancy date for utilization of space and escalation costs. These schedules provide a base on which the implementation plan activities will be incorporated. The Schedule as provided indicates a brief description of the individual building construction projects and indicates the construction sequence and duration for this option. Commissioning of engineering systems will occur the last 20% of each project's duration.

- Existing Building Maintenance Costs: Existing unaltered buildings retained on the campus for the Baseline require ongoing and periodic maintenance costs including buildings that are scheduled for demolition to the point where demolition begins.

- Capital Cost Estimate: An estimate of projected new construction and renovation costs is indicated in The BPO Capital Cost Estimate. The Capital costs are based on campus-wide area projections by Departmental Group (Zone) as indicated in the Projected BPO areas by Departmental Group (Zone).

- Construction Cost depends on Function: Construction costs are derived from projected area requirements by Building and non-Building Departmental Groups (Zones).

- Soft Costs Standardized: Approved factors as stated in the assumptions for soft costs (such as professional fees, furnishings, and equipment) are based on consultant experience and VA standards.

Evaluation of Baseline using Capital Criteria:

- Consolidation of Vacated Space: The area totals of existing vacant space compared to the vacant space in BPO 8 for each campus is outlined in the tables below. Both the Bedford and Brockton sites see a decrease in vacant space; Bedford since the campus is being consolidated; Brockton because new construction and renovation allows for more efficient use of square footage. The Jamaica Plain and West Roxbury campuses see an increase in vacant space because the distribution of square footage during renovations created additional vacant space in the existing buildings.

Table 53: Percentage of Vacant Space – Bedford BPO 8

Title	Vacant BGSF
Existing Vacant	47,644
Vacant BPO	0
Variance	-47,644
Variance Percent	-100%

Table 54: Percentage of Vacant Space – Brockton BPO 8

Title	Vacant BGSF
Existing Vacant	123,117
Vacant BPO	0
Variance	-123,117
Variance Percent	-100%

Table 55: Percentage of Vacant Space – Jamaica Plain BPO 8

Title	Vacant BGSF
Existing Vacant	11,679
Vacant BPO	168,220
Variance	-156,541
Variance Percent	1,340.36%

Table 56: Percentage of Vacant Space – West Roxbury BPO 8

Title	Vacant BGSF
Existing Vacant	0
Vacant BPO	29,504
Variance	29,504
Variance Percent	0

- Consolidation of Underutilized Space: The tables below compare the total BGSF for BPO 8 to the projected ideal BGSF for the option based upon the workload. Because there is a substantial amount of renovation for BPO 8 at Brockton, Jamaica Plain, and West Roxbury, there is an increase of square footage needed to achieve a modern, safe, and secure environment. Brockton and West Roxbury have new construction involved so these sites are able to meet the projected ideal BGSF with a better efficiency.

Table 57: Percentage of Underutilized Space – Bedford BPO 8

Title	Total
Projected Ideal BGSF Based on In-House Workload	0
Proposed BPO BGSF	0
Underutilized Space	0
Variance by Percentage	0%

Note: There is no projected workload for the Bedford campus in BPO 8, however, the projected square footage results from a mathematical functional distribution of projected existing functions to Departmental Groups (Zone). Since the campus is being consolidated, this square footage has been re-assigned to the proper sites.

Table 58: Percentage of Underutilized Space – Brockton BPO 8

Title	Total
Projected Ideal BGSF Based on In-House Workload	1,706,818
Proposed BPO BGSF	1,209,196
Underutilized Space	-497,622
Variance by Percentage	-41%

Note: The projected ideal area need (primarily for Laboratory and Pathology Services) was reduced based on a discussion of assumptions with the local VA representatives. The implication of this area reduction is indicated as the values for the proposed area need in the table above. Even with considerations of additional area required for renovations of existing buildings, the proposed BPO area need is less than the projected ideal need. The result indicates a 41% overall reduction in campus area for this option.

Table 59: Percentage of Underutilized Space – Jamaica Plain BPO 8

Title	Total
Projected Ideal BGSF Based on In-House Workload	489,995
Proposed BPO BGSF	864,987
Underutilized Space	374,992
Variance by Percentage	43%

Table 60: Percentage of Underutilized Space – West Roxbury BPO 8

Title	Total
Projected Ideal BGSF Based on In-House Workload	645,243
Proposed BPO BGSF	828,039
Underutilized Space	182,796
Variance by Percentage	22%

- Timeliness of Completion: The proposed time for completion of work at each campus in BPO 8 is outlined in the table below from project initiation in January 2009 at all four sites to the completion of the multi-phased projects at each site.

Table 61: Total Construction Duration – BPO 8

Site	Start	Complete	Months
Bedford	01/01/09	01/01/2019	120
Brockton	01/01/09	01/01/2019	120
Jamaica Plain	01/01/09	07/01/2016	90
West Roxbury	01/01/09	07/01/2018	114

- Timeliness of Urgent Seismic Corrections: There are multiple buildings that are classified as "Seismic Non-exempt" on each campus. These buildings which are to be incorporated into this BPO will be renovated to rectify the seismic deficiencies as part of the implementation plan. The urgency to correct seismic deficiencies in existing buildings that will be renovated in this BPO was also factored into the proposed phasing sequence. BPO 8 achieves completion of renovations to all buildings that will be retained with seismic non-exempt status by 2018. All seismic corrections at Brockton will occur in 2016 for renovated buildings and patients will move out of the last "Seismic Non-exempt" building in 2018. West Roxbury will have the last "Seismic Non-exempt" building finished with renovations in 2018. Jamaica Plain will correct all "Seismic Non-exempt" buildings by 2016. "Seismic Non-exempt" buildings on the Bedford will not be renovated since the campus is being consolidated, so the last time patients will be in "Seismic Non-exempt" buildings will be 2019 as they move off of the Bedford campus. Buildings with seismic deficient status that are not projected for VA occupancy will be demolished as they become eligible for demolition based on the implementation schedule.

- Size and Complexity of Capital Plan: Projected areas (BGSF) based on 2023 workload volumes indicates a changes to the four campuses as indicated in the tables below.

    - Bedford: The Bedford campus is closing as it is consolidated into the Brockton campus; therefore the following table indicates that all projected square footage will be zero.

    - Brockton: The most noteworthy change to the Brockton campus is the large increase in inpatient services, mainly Acute, Nursing Home, and Domiciliary services. This is attributed to the fact that Brockton will be absorbing a majority of the workload from the Bedford campus.

    - Jamaica Plain: It is important to note that the campus is projecting a significant decrease in all zones except for Research and Logistics despite the fact that total BGSF is not significantly changing. This can be attributed to a decrease in workload for all clinical functions and a campus where the buildings are more suited for renovation to provide for a modern, safe, and secure healthcare environment.

- West Roxbury: The most notable change on the campus in terms of clinical care is in the increase of Acute Care and Ambulatory services as other programs are decreasing. Administrative and Logistical functions are also seeing a large increase in required square footage. A portion of the increased square footage can be attributed to the fact that more square footage is required to renovate the program to fit into existing buildings.

Table 62: Campus Area Change – Bedford BPO 8

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	82,098	160,954	84,063	74,956	189,323	86,766	178,014	172,543	127,628	**1,156,345**
Projected (BGSF)	0	0	0	0	0	0	0	0	0	**0**
Variance (BGSF)	-82,098	-160,954	-84,063	-74,956	-189,323	-86,766	-178,014	-172,543	-127,628	**-1,156,354**
Variance	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100.00%	**-100%**

Table 63: Campus Area Change – Brockton BPO 8

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	170,700	89,465	83,467	94,656	245,517	13,700	165,282	169,834	114,160	**1,146,781**
Projected (BGSF)	351,388	162,269	124,176	28,928	203,856	15,113	152,537	170,929	0	**1,209,196**
Variance (BGSF)	180,688	72,804	40,709	-65,728	-41,661	1,413	-12,745	1,095	-114,160	**62,415**
Variance	105.85%	81.38%	48.77%	-69.44%	-16.97%	10.31%	-7.71%	.64%	-100.00%	**5.44%**

Table 64: Campus Area Change – Jamaica Plain BPO 8

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	64,447	16,915	43,730	75,623	387,821	108,495	84,788	132,411	39,730	**953,960**
Projected (BGSF)	26,100	1,863	1,863	52,292	213,500	211,868	57,302	300,199	0	**864,987**
Variance (BGSF)	-38,347	-15,052	-41,867	-23,331	-174,321	103,373	-27,486	167,788	-39,730	**-88,973**
Variance	-59.50%	-88.99%	-95.74%	-30.85%	-44.95%	95.28%	-32.42%	126.72%	-100.00%	**-9.33%**

Table 65: Campus Area Change – West Roxbury BPO 8

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	146,680	11,900	9,686	12,536	193,784	41,140	33,709	76,523	728	**526,686**
Projected (BGSF)	196,186	5,719	2,353	3,588	309,539	53,418	128,976	128,260	120,340	**948,379**
Variance (BGSF)	49,506	-6,181	-7,333	-8,948	115,755	12,278	95,267	51,737	119,612	**421,693**
Variance	33.75%	-51.94%	-75.71%	-71.38%	59.73%	29.84%	282.62%	67.61%	16430.21%	**80.07%**

Note: An additional 120,340 BGSF of administrative function will be included at West Roxbury in new construction as the VISN and VA national offices are relocated to the campus. This BGSF was derived from existing outlease square footage numbers.

- Patient Moves: In BPO 8, multiple buildings on each campus will be renovated to some extent over multiple phases requiring disruption of services. Each site will need to be phased properly to minimize the amount of patients moves required to carry out critical renovations.

    - Bedford: Patient moves will be minimal, as the campus is being consolidated into Brockton. Patients will be moved one time as they are relocated from Bedford to newly renovated space on other campuses, specifically Brockton.

    - Brockton: The construction of two new buildings on campus allows for a minimum of patient moves because of the additional square footage provided enabling services from existing buildings into new construction in one move. Renovation to existing buildings can occur by utilizing vacant space created by patients moving to the new construction.

    - Jamaica Plain: The multiple floors of the tower at Jamaica Plain allows for individual floors to be renovated without disrupting or creating multiple moves for patients and services. As floors or areas are renovated, patients can move into the new space from their existing space.

    - West Roxbury: Patient moves on the West Roxbury campus will need to occur within the main buildings on campus to let a series of renovations to occur. This allows for the campus to remain functioning while portions of the buildings are renovated. The construction of a new addition will limit the number of patient moves as the additional square footage will allow more area to be temporarily vacant allowing for renovations to occur.

- Historic Buildings Altered: There are 91 total buildings identified as historic in the CAI across all four campuses. The breakdown is outlined in the table below. For this BPO, all will be renovated or demolished.

Table 66: Historic Buildings Altered – Bedford BPO 8

Bedford	**Quantity**
Total Historic or Historically Eligible	52
Altered Historic Buildings	52
Brockton	**Quantity**
Total Historic or Historically Eligible	27
Altered Historic Buildings	27
Jamaica Plain	**Quantity**
Total Historic or Historically Eligible	6
Altered Historic Buildings	6
West Roxbury	**Quantity**
Total Historic or Historically Eligible	6
Altered Historic Buildings	6

Note: Historically eligible buildings are classified as any building that is more then 50 years old.

BPO 10

The Bedford campus will be consolidated to Brockton while a new CBOC will be established in the Bedford area. The West Roxbury campus will be consolidated into Jamaica Plain.

The inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure while retaining newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI&D unit, and returning veterans' services.

Services currently located at West Roxbury will be consolidated onto the Jamaica Plain campus. The consolidation of West Roxbury to Jamaica Plain in this BPO provides for an understanding of the impacts that would occur in relocating the inpatient services currently located at West Roxbury. Primary care and some specialized ambulatory services will also be relocated throughout BHS CBOCs and remaining VAMCs from West Roxbury, as appropriate. The consolidation will be accomplished through the replacement of Building 1 on the Jamaica Plain campus with new construction of three buildings that will form the new tower. Special needs of educational and research programs along with additional parking as needed, will be incorporated. Space will need to be leased to accommodate primary care, behavioral health, wet lab, research and administrative services and to contract out services for outpatient specialty care during construction at Jamaica Plain. Once construction is complete, all patients will be able to move back to the newly built tower from their temporary locations. Additionally, services from the Causeway CBOC will be provided at Jamaica Plain.

Note: As a result, all of the Bedford campus and West Roxbury campus will be made available for reuse.

Analysis of Capital Planning Outputs

- Site Plan: The Projected BPO 10 Site Plans (see the following figures) illustrate the proposed campus configuration and locations of buildings for all four sites in the Boston study for BPO 10.

Figure 15: A Diagram of the Projected BPO 10 Bedford Site Plan

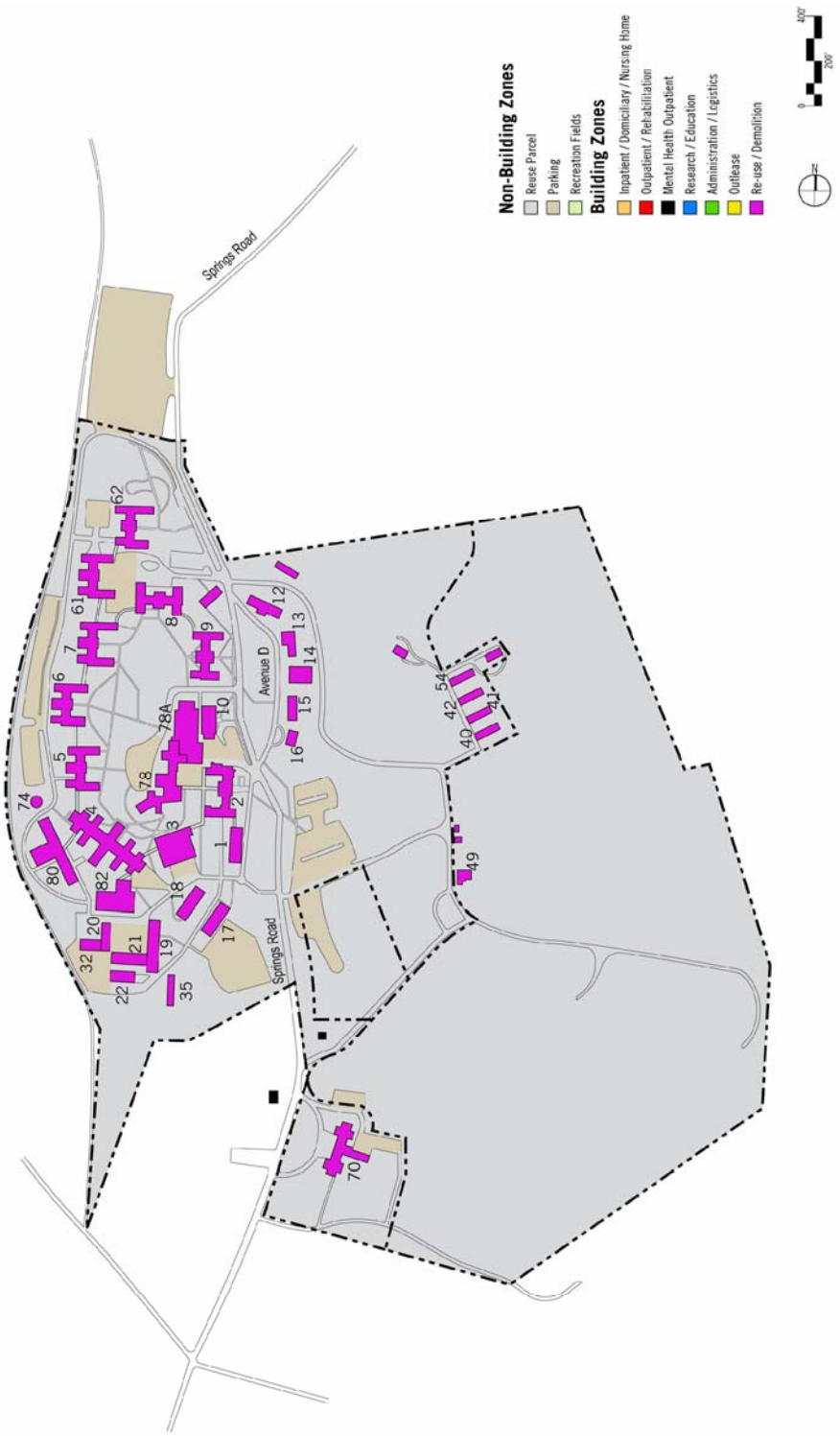


Figure 16: A Diagram of the Projected BPO 10 Brockton Site Plan

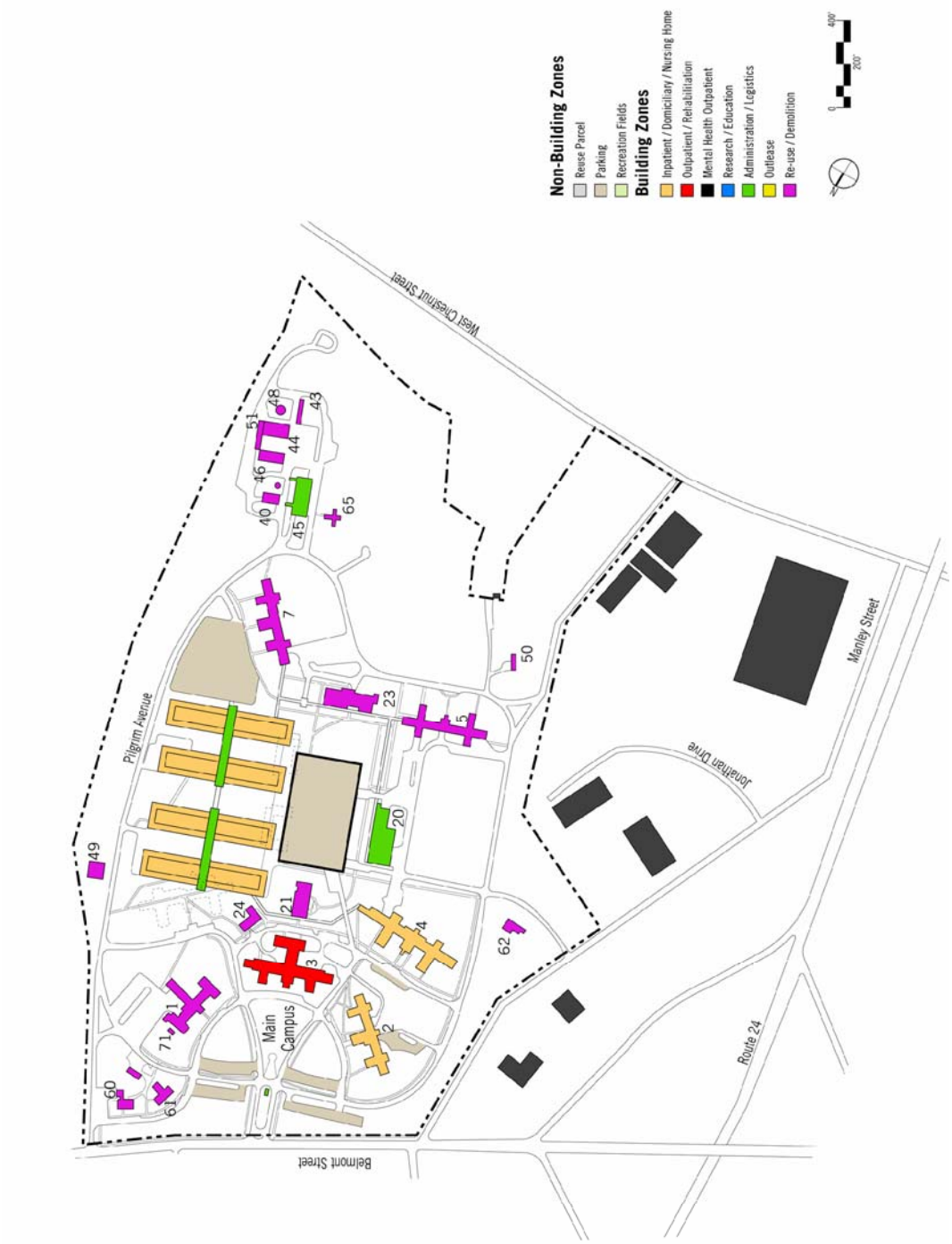
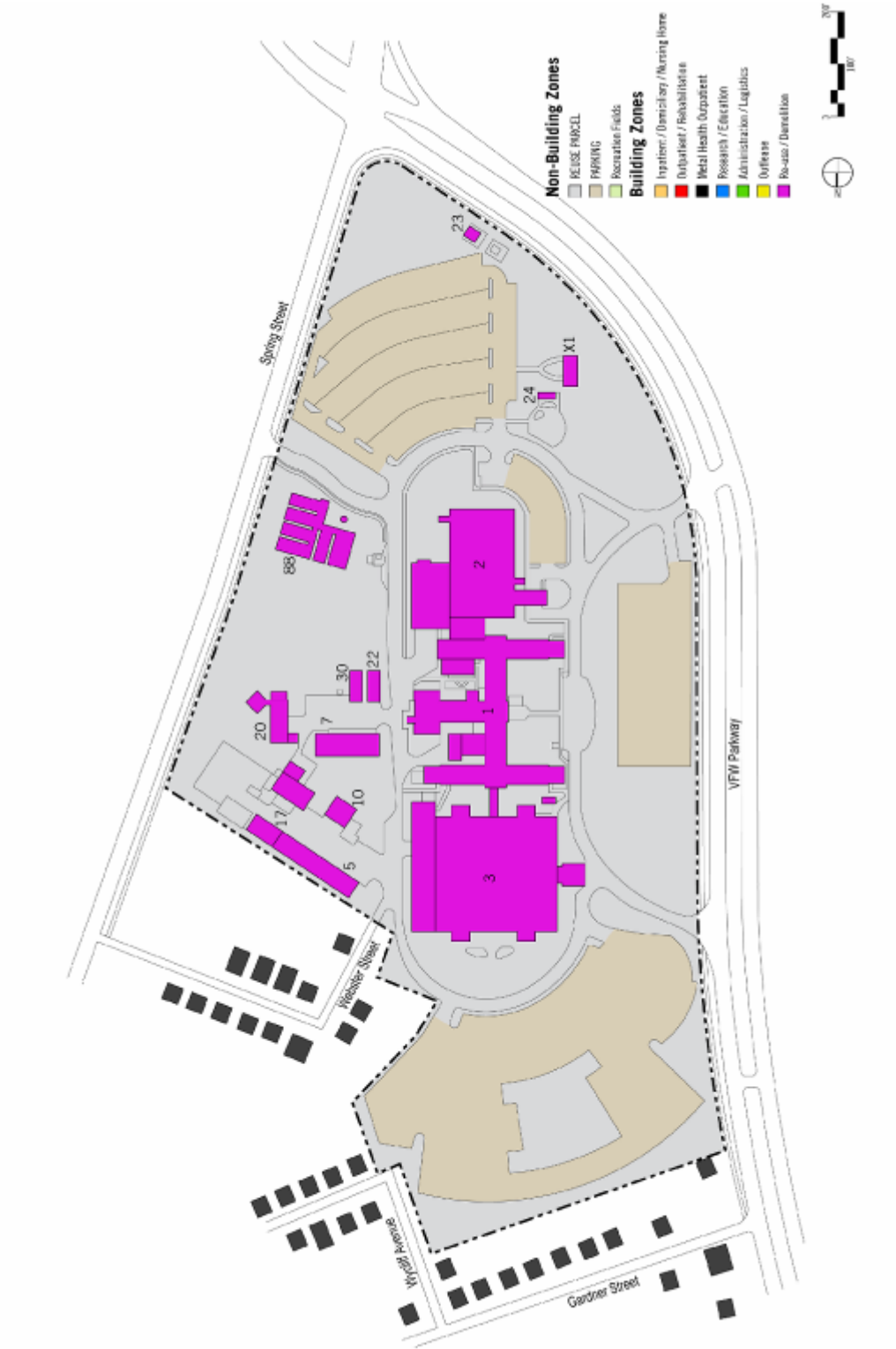


Figure 17: A Diagram of the Projected BPO 10 Jamaica Plain Site Plan

Figure 18: A Diagram of the Projected BPO 10 West Roxbury Site Plan



- Building Color Code: Similar to the Existing Current Stage Site Plan, the building color indicates the Departmental Group (Zone) of the **primary** occupants for each building. Matching the building color key used for the Existing Current State Site Plan, the proposed building color indicates the predominant occupancy of the building. Refer to the Legend regarding the Departmental Group (Zone) contained therein.

- Site Impact during Construction: Site area calculations for cost estimating purposes are identified in the table below. New surface and structured parking and repaving of existing parking areas demand the greatest area and associated costs. Maintenance of the existing recreation fields is assumed.

- Campus Area and uses: The BPO 10 campus configuration as indicated on the site plan for each site is summarized in the following table. The area totals for primary activities on the portions of the site to be retained exclusively for VA-related functions are indicated in the Campus Area Total below.

Table 67: Campus Area Total Acreage – BPO 10

Bedford Campus Total	**Acres**
Buildings and Landscaping	0
Recreation	0
Parking	0
BPO Total (total of above)	0
Existing Campus Total	~183
Brockton Campus Total	**Acres**
Buildings and Landscaping	~131
Recreation	~0
Parking	~15
BPO Total (total of above)	~146
Existing Campus Total	~146
Jamaica Plain Campus Total	**Acres**
Buildings and Landscaping	~8.5
Recreation	~0
Parking	~5
BPO Total (total of above)	~13.5
Existing Campus Total	~16
West Roxbury Campus Total	**Acres**
Buildings and Landscaping	0
Recreation	0
Parking	0
BPO Total (total of above)	0
Existing Campus Total	~30

- Land Parcels Available for Reuse: The configuration of land parcels for reuse varies with BPO. However, due to the configuration of proposed BPO 10, the Bedford and West Roxbury campuses, along with a portion of the Jamaica Plain campus are available for reuse. The amount of land that is available for reuse is outlined in the table below. Reuse will not occur at Brockton.

Table 68: Land Parcels Designated for Reuse – BPO 10

Reuse Parcels	Acres
Bedford Parcel 1	~183
Jamaica Plain Parcel 1	~2.5
West Roxbury Parcel 1	~30
Total	**~215.5**

- Buildings Available for Reuse: Where buildings are not required to accommodate the projected area need, they are marked for reuse or demolition and may be considered for reuse prior to the targeted demolition date. In this BPO the buildings that provide the greatest potential for reuse are Building 9 on the Jamaica Plain campus, all buildings on the Bedford and West Roxbury campuses, and Buildings 1, 5, 7, and 23 on the Brockton campus.

- Relocation of Functions: In BPO 10, the functions have been re-organized on each campus as follows:

    - Bedford: The campus is being consolidated into the Brockton campus and therefore all functions will be moved off site.

    - Brockton: The majority of outpatient functions will be maintained at the front of the campus at the entrance from Belmont Street in Building 3. A portion of the additional outpatient services will be provided in the new buildings being constructed on site. Inpatient functions are to be housed in renovated Buildings 2 and 4 and in the newly constructed buildings at the east of the site along Pilgrim Avenue. Logistical and administrative functions will be incorporated into Building 20 and in the renovated and newly constructed buildings.

    - Jamaica Plain: New construction will replace the existing Building 1 and its subsequent additions leaving only Building 1F to be renovated. The new building will allow for outpatient services to reside at the base, linking with Building 1F. A new tower will be constructed on top of the platform to house inpatient services. Logistical, administrative, and research functions will wrap the base of the new construction.

    - West Roxbury: The campus is being consolidated into the Jamaica Plain campus and therefore all functions will be moved off site.

- Optimal Use of Existing Buildings: The buildings at the four sites vary in age and appropriateness for optimal use in providing healthcare. A majority of the structures at Bedford were constructed more than 70 years ago and are not compatible with modern standards of design for health care. The floor plates are too small (resulting in poor functional adjacencies); the floor to floor heights are too low (resulting in mechanical systems with insufficient air volume); with a few exceptions, the bedrooms share toilets between rooms; and some bedrooms have more than 2 occupants. The conditions at the other sites are more suitable for healthcare since the buildings were constructed more recently and have undergone renovations over the years. However a portion of the

buildings on both Brockton and West Roxbury are more then 50 years old and contain small floor plates resulting in buildings not compatible with modern standards of design for health care and low floor to floor heights (resulting in mechanical systems with insufficient air volume). All sites will need significant renovations to allow for the buildings to be suitable for modern healthcare.

- Projected Workload Volumes for 2023: The projected square foot areas, as derived from workload volumes (see Stage II Assumptions) indicates that the Brockton site will require additional square footage compared to the existing conditions which will be provided through new construction because of the increased workloads. Bedford is being consolidated into Brockton so it will no longer need any area to provide services. The same is true for West Roxbury as it is being consolidated into Jamaica Plain. The Jamaica Plain campus will see a large increase in required square footage because of the additional workload absorbed from West Roxbury. See the tables below. The changes can be attributed to the amount of vacant space on each campus and the change in workload volumes.

- Parking: Portions of the existing surface parking will be repaved and expanded to provide parking in the most convenient locations adjacent to building entries at each campus. Distribution of parking by departmental group is indicated in the following tables. Since there is a large demand for parking at both Brockton and Jamaica Plain, new structured parking will be constructed to meet the demand. Public transportation also services the Jamaica Plain campus reducing the total demand on parking.

Table 69: Parking Distribution – Bedford BPO 10

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	0	0	0
Nursing Home	0	0	0	0
Domiciliary	0	0	0	0
Behavioral Health	0	0	0	0
Ambulatory Services	0	0	0	0
Research	0	0	0	0
Administration	0	0	0	0
Logistics	0	0	0	0
Total	**0**	**0**	**0**	**0**

Table 70: Parking Distribution – Brockton BPO 10

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	762	0	304,800
Nursing Home	0	439	0	175,602
Domiciliary	0	207	0	82,800
Behavioral Health	42	0	16,800	0
Ambulatory Services	0	766	0	306,402
Research	67	0	26,800	0
Administration	345	0	138,000	0
Logistics	15	0	6,000	0
Total	**469**	**2,174**	**187,600**	**869,604**

Table 71: Parking Distribution – Jamaica Plain BPO 10

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	180	0	72,000
Nursing Home	0	0	0	0
Domiciliary	0	0	0	0
Behavioral Health	20	0	8,000	0
Ambulatory Services	160	640	64,000	256,000
Research	0	75	0	30,000
Administration	0	85	0	34,000
Logistics	10	0	4,000	0
Total	**190**	**980**	**76,000**	**392,000**

Note: An additional 241 parking spaces totaling 96,272 sf of structured parking will be included at Jamaica Plain as the VISN and VA national offices are relocated to the campus.

Note: Parking demand for Jamaica Plain is decreased based upon the urban setting and accessibility of the campus to public transportation. Parking totals for the campus represent the total parking required for the campus however distribution between departments may vary depending upon specific demand by department.

Table 72: Parking Distribution – West Roxbury BPO 10

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	0	0	0
Nursing Home	0	0	0	0
Domiciliary	0	0	0	0
Behavioral Health	0	0	0	0
Ambulatory Services	0	0	0	0
Research	0	0	0	0
Administration	0	0	0	0
Logistics	0	0	0	0
Total	**0**	**0**	**0**	**0**

- Construction Phasing: Construction on each campus will occur in multiple phases to allow for the numerous buildings on each campus to be renovated and new construction to occur in order to provide for a modern, safe, and secure healthcare environment.

- Bedford: The campus is being consolidated to Brockton and therefore phasing is not required as patients and services will be relocated at one time when the Brockton campus is finished with renovations and construction.

- Brockton: The demolition of Buildings 22 and 25 early in the project will facilitate the construction of one of the new inpatient facilities, specifically designed to house the SCI&D (Spinal Cord Injury and Disorder) currently located in Building 8. Once construction of the first building is completed, demolition can occur on Building 8, allowing for the construction of the second new building on the campus. While the new construction is occurring, Buildings 2, 3, 4, and 20 will be renovated allowing for the services to be consolidated on the campus. Utilization of vacant space and buildings designated for reuse as swing space during construction allows for timely and efficient phasing.

- Jamaica Plain: Construction for Jamaica Plain can be carried out in one large construction project as all of Building 1 will be demolished to allow for the construction of a new state of art tower. A second phase will follow this construction to renovate existing Building 1F.

- West Roxbury: The campus is being consolidated to Jamaica Plain and therefore phasing is not required as patients and services will be relocated at one time when the Jamaica Plain campus is finished with renovations and construction.

- Construction Schedule: Schedules for construction activities are intended to identify relative duration of new construction or renovated work in order to calculate occupancy date for utilization of space and escalation costs. These schedules provide a base on which the implementation plan activities will be incorporated. The Schedule as provided indicates a brief description of the individual building construction projects and indicates the construction sequence and duration for this option. Commissioning of engineering systems will occur the last 20% of each project's duration.

- Existing Building Maintenance Costs: Existing unaltered buildings retained on the campus for the Baseline require ongoing and periodic maintenance costs including buildings that are scheduled for demolition to the point where demolition begins.

- Capital Cost Estimate: An estimate of projected new construction and renovation costs is indicated in The BPO Capital Cost Estimate. The Capital costs are based on campus-wide area projections by Departmental Group (Zone) as indicated in the Projected BPO areas by Departmental Group (Zone).

- Construction Cost depends on Function: Construction costs are derived from projected area requirements by Building and non-Building Departmental Groups (Zones).

- Soft Costs Standardized: Approved factors as stated in the assumptions for soft costs (such as professional fees, furnishings, and equipment) are based on consultant experience and VA standards.

Evaluation of Baseline using Capital Criteria:

- Consolidation of Vacated Space: The area totals of existing vacant space compared to the vacant space in BPO 10 for each campus is outlined in the tables below. All four sites see a decrease or no change in vacant space. This can be attributed to the consolidation of Bedford and West Roxbury, eliminating the vacant space on the sites, and the new construction occurring at Jamaica Plain and Brockton, allowing for more efficient use of square footage.

Table 73: Percentage of Vacant Space – Bedford BPO 10

Title	Vacant BGSF
Existing Vacant	47,644
Vacant BPO	0
Variance	-47,644
Variance Percent	-100%

Table 74: Percentage of Vacant Space – Brockton BPO 10

Title	Vacant BGSF
Existing Vacant	123,117
Vacant BPO	0
Variance	-123,117
Variance Percent	-100%

Table 75: Percentage of Vacant Space – Jamaica Plain BPO 10

Title	Vacant BGSF
Existing Vacant	11,679
Vacant BPO	0
Variance	-11,679
Variance Percent	-100%

Table 76: Percentage of Vacant Space – West Roxbury BPO 10

Title	Vacant BGSF
Existing Vacant	0
Vacant BPO	0
Variance	0
Variance Percent	0

- Consolidation of Underutilized Space: The tables below compare the total BGSF for BPO 10 to the projected ideal BGSF for the option based upon the workload. BPO 10 requires a substantial amount of renovation at Brockton where there is an increase of square footage needed to achieve a modern, safe, and secure environment. Brockton and Jamaica Plain also have significant new construction; therefore these sites are able to meet the projected ideal BGSF with a better efficiency. Brockton actually shows a decrease in BGSF based upon assumptions of how programs such as pathology and

research and their associated square footage were re-distributed as Bedford and West Roxbury were consolidated.

Table 77: Percentage of Underutilized Space – Bedford BPO 10

Title	Total
Projected Ideal BGSF Based on In-House Workload	0
Proposed BPO BGSF	0
Underutilized Space	0
Variance by Percentage	0%

Note: There is no projected workload for the Bedford campus in BPO 10, however, the projected square footage results from a mathematical functional distribution of projected existing functions to Departmental Groups (Zone). Since the campus is being consolidated, this square footage has been re-assigned to the proper sites.

Table 78: Percentage of Underutilized Space – Brockton BPO 10

Title	Total
Projected Ideal BGSF Based on In-House Workload	1,706,818
Proposed BPO BGSF	1,209,196
Underutilized Space	-497,622
Variance by Percentage	-41%

Note: The projected ideal area need (primarily for Laboratory and Pathology Services) was reduced based on a discussion of assumptions with the local VA representatives. The implication of this area reduction is indicated as the values for the proposed area need in the table above. Even with considerations of additional area required for renovations of existing buildings, the proposed BPO area need is less than the projected ideal need. The result indicates a 41% overall reduction in campus area for this option.

Table 79: Percentage of Underutilized Space – Jamaica Plain BPO 10

Title	Total
Projected Ideal BGSF Based on In-House Workload	1,078,985
Proposed BPO BGSF	1,105,558
Underutilized Space	26,573
Variance by Percentage	2%

Table 80: Percentage of Underutilized Space – West Roxbury BPO 10

Title	Total
Projected Ideal BGSF Based on In-House Workload	0
Proposed BPO BGSF	0
Underutilized Space	0
Variance by Percentage	0%

Note: There is no projected workload for the West Roxbury campus in BPO 10, however, the projected square footage results from a mathematical functional distribution of projected existing functions to Departmental Groups (Zone). Since the campus is being consolidated, this square footage has been re-assigned to the proper sites.

- Timeliness of Completion: The proposed time for completion of work at each campus in BPO 10 is outlined in the following table from project initiation in January 2009 at all four sites to the completion of the multi-phased projects at each site.

Table 81: Total Construction Duration – BPO 10

Site	Start	Complete	Months
Bedford	01/01/09	01/01/2019	120
Brockton	01/01/09	01/01/2019	120
Jamaica Plain	01/01/09	07/01/2017	102
West Roxbury	01/01/09	07/01/2016	90

- Timeliness of Urgent Seismic Corrections: There are multiple buildings that are classified as "Seismic Non-exempt" on each campus. These buildings which are to be incorporated into this BPO will be renovated to rectify the seismic deficiencies as part of the implementation plan. The urgency to correct seismic deficiencies in existing buildings that will be renovated in this BPO was also factored into the proposed phasing sequence. BPO 10 achieves completion of renovations to all buildings that will be retained with seismic non-exempt status by 2018. All seismic corrections at Brockton will occur in 2016 for renovated buildings and patients will move out of the last "Seismic Non-exempt" building in 2018. West Roxbury will have the last patients moved from the "Seismic Non-exempt" buildings by 2016. Jamaica Plain will correct all "Seismic Non-exempt" buildings by 2010, since they are being demolished to facilitate new construction. "Seismic Non-exempt" buildings on the Bedford campus will not be renovated since the campus is being consolidated, so last time patients will be in "Seismic Non-exempt" buildings will be 2019 as they move off of the Bedford campus. Buildings with seismic deficient status that are not projected for VA occupancy will be demolished as they become eligible for demolition based on the implementation schedule.

- Size and Complexity of Capital Plan: Projected areas (BGSF) based on 2023 workload volumes indicates a changes to the four campuses as indicated in the following tables.

    - Bedford: The Bedford campus is closing as it is consolidated into the Brockton campus; therefore the table below indicates that all projected square footage will be zero.

    - Brockton: The most noteworthy change to the Brockton campus is the large increase in inpatient services, mainly Acute, Nursing Home, and Domiciliary services. This is attributed to the fact that Brockton will be absorbing a majority of the workload from the Bedford campus.

    - Jamaica Plain: It is important to note that the campus is projecting a significant increase in Acute Care and Research. This is attributed to the increased workload associated with the consolidation of West Roxbury to the campus. New construction helps maintain more efficient use of space, so the net increases are not as large compared to the square footage that would be required for renovation of existing buildings to meet the required workloads.

- West Roxbury: The West Roxbury campus is being consolidated into the Jamaica Plain campus; therefore the following table indicates that all projected square footage will be zero.

Table 82: Campus Area Change – Bedford BPO 10

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	82,098	160,954	84,063	74,956	189,323	86,766	178,014	172,543	127,628	**1,156,345**
Projected (BGSF)	0	0	0	0	0	0	0	0	0	**0**
Variance (BGSF)	-82,098	-160,954	-84,063	-74,956	-189,323	-86,766	-178,014	-172,543	-127,628	**-1,156,354**
Variance	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100.00%	**-100%**

Table 83: Campus Area Change – Brockton BPO 10

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	170,700	89,465	83,467	94,656	245,517	13,700	165,282	169,834	114,160	**1,146,781**
Projected (BGSF)	351,388	162,269	124,176	28,928	203,856	15,113	152,537	170,929	0	**1,209,196**
Variance (BGSF)	180,688	72,804	40,709	-65,728	-41,661	1,413	-12,745	1,095	-114,160	**62,415**
Variance	105.85%	81.38%	48.77%	-69.44%	-16.97%	10.31%	-7.71%	.64%	-100.00%	**5.44%**

Table 84: Campus Area Change – Jamaica Plain BPO 10

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	64,447	16,915	43,730	75,623	387,821	108,495	84,788	132,411	39,730	**953,960**
Projected (BGSF)	188,137	7,095	3,476	41,467	399,848	212,835	111,233	141,467	120,340	**1,225,898**
Variance (BGSF)	123,690	-9,820	-40,254	-34,156	12,027	104,340	26,445	9,056	80,610	**271,938**
Variance	191.93%	-58.05%	-92.05%	-45.17%	3.10%	96.17%	31.19%	6.84%	202.90%	**28.51%**

Note: An additional 120,340 BGSF of administrative function will be included at Jamaica Plain in new construction as the VISN and VA national offices are relocated to the campus. This BGSF was derived from existing outlease square footage numbers.

Table 85: Campus Area Change – West Roxbury BPO 10

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	146,680	11,900	9,686	12,536	193,784	41,140	33,709	76,523	728	**526,686**
Projected (BGSF)	0	0	0	0	0	0	0	0	0	**0**
Variance (BGSF)	-146,680	-11,900	-9,686	-12,536	-193,784	-41,140	-33,709	-76,523	-728	**-526,686**
Variance	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	**-100.00%**

- Patient Moves: In BPO 10, multiple buildings on each campus will be renovated to some extent over multiple phases requiring disruption of services. Each site will need to be phased properly to minimize the amount of patients moves required to carry out critical renovations.

    - Bedford: Patient moves will be minimal, as the campus is being consolidated into Brockton. Patients will be moved one time as they are relocated from Bedford to newly renovated space on other campuses, specifically Brockton.

    - Brockton: The construction of two new buildings on campus allows for a minimum of patient moves because of the additional square footage provided enabling services from existing buildings into new construction in one move. Renovation to existing buildings can occur by utilizing vacant space created by patients moving to the new construction.

    - Jamaica Plain: The demolition of Building 1 on the site will require the functions currently housed within to be temporarily relocated as the construction occurs. Bedford and West Roxbury, which are being consolidated, will continue to provide services until construction is completed at Jamaica Plain. Space may need to be leased to accommodate all the programs which will be moved off campus during construction. Once construction is complete, all patients will be able to move back to the newly built tower from their temporary locations.

    - West Roxbury: Patient moves will be minimal, as the campus is being consolidated into Jamaica Plain. Patients will be moved one time as they are relocated from West Roxbury to newly renovated space on other campuses, specifically Jamaica Plain.

- Historic Buildings Altered: There are 91 total buildings identified as historic in the CAI across all four campuses. The breakdown is outlined in the table below. For this BPO, all will be renovated or demolished.

Table 86: Historic Buildings Altered – Bedford BPO 10

Bedford	**Quantity**
Total Historic or Historically Eligible	52
Altered Historic Buildings	52
Brockton	**Quantity**
Total Historic or Historically Eligible	27
Altered Historic Buildings	27
Jamaica Plain	**Quantity**
Total Historic or Historically Eligible	6
Altered Historic Buildings	6
West Roxbury	**Quantity**
Total Historic or Historically Eligible	6
Altered Historic Buildings	6

Note: Historically eligible buildings are classified as any building that is more then 50 years old.

BPO 11

The Bedford campus will be consolidated to Brockton while a new CBOC will be established in the Bedford area and in an urban setting in downtown Boston. The Jamaica Plain campus will be consolidated into West Roxbury.

The inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure while retaining newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI&D unit, and returning veterans' services.

Services currently located at Jamaica Plain will be consolidated onto the West Roxbury campus. Primary care, some specialized ambulatory services, and outpatient mental health may be relocated to BHS CBOCs, as appropriate. The consolidation will be accomplished through the renovation of Buildings 1, 2, and 3 along with the construction of two new multi-story additions behind Building 1, allowing for its historic façade to remain. Special needs programs of educational and research programs along with additional parking as needed will be incorporated. An urban CBOC in the downtown Boston area will provide methadone treatment in addition to primary care and ambulatory mental health.

Note: As a result, all of the Bedford campus and Jamaica Plain campus will be made available for reuse.

Analysis of Capital Planning Outputs

- Site Plan: The Projected BPO 11 Site Plans (see the following figures) illustrate the proposed campus configuration and locations of buildings for all four sites in the Boston study for BPO 11.

Figure 19: A Diagram of the Projected BPO 11 Bedford Site Plan

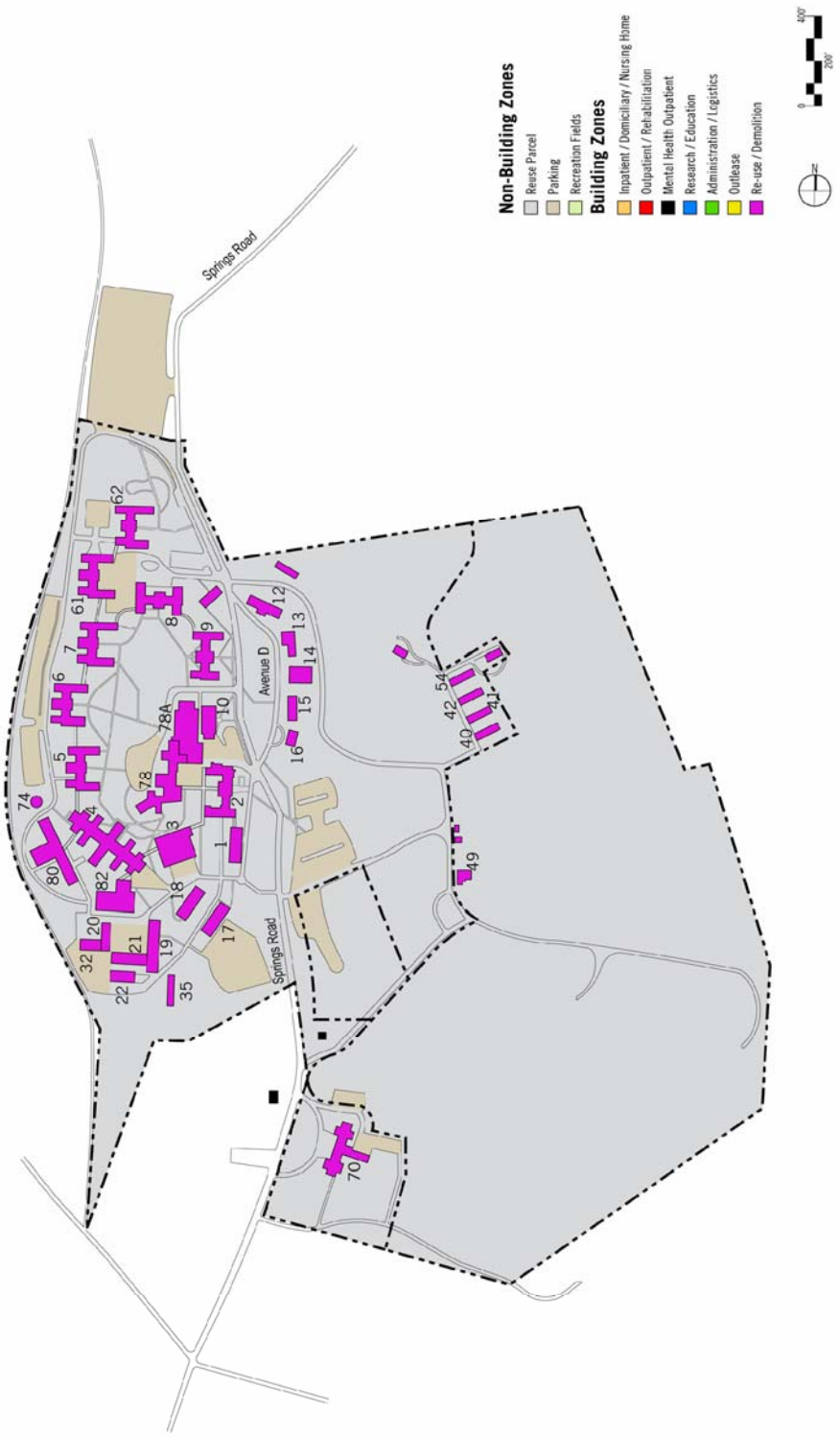


Figure 20: A Diagram of the Projected BPO 11 Brockton Site Plan

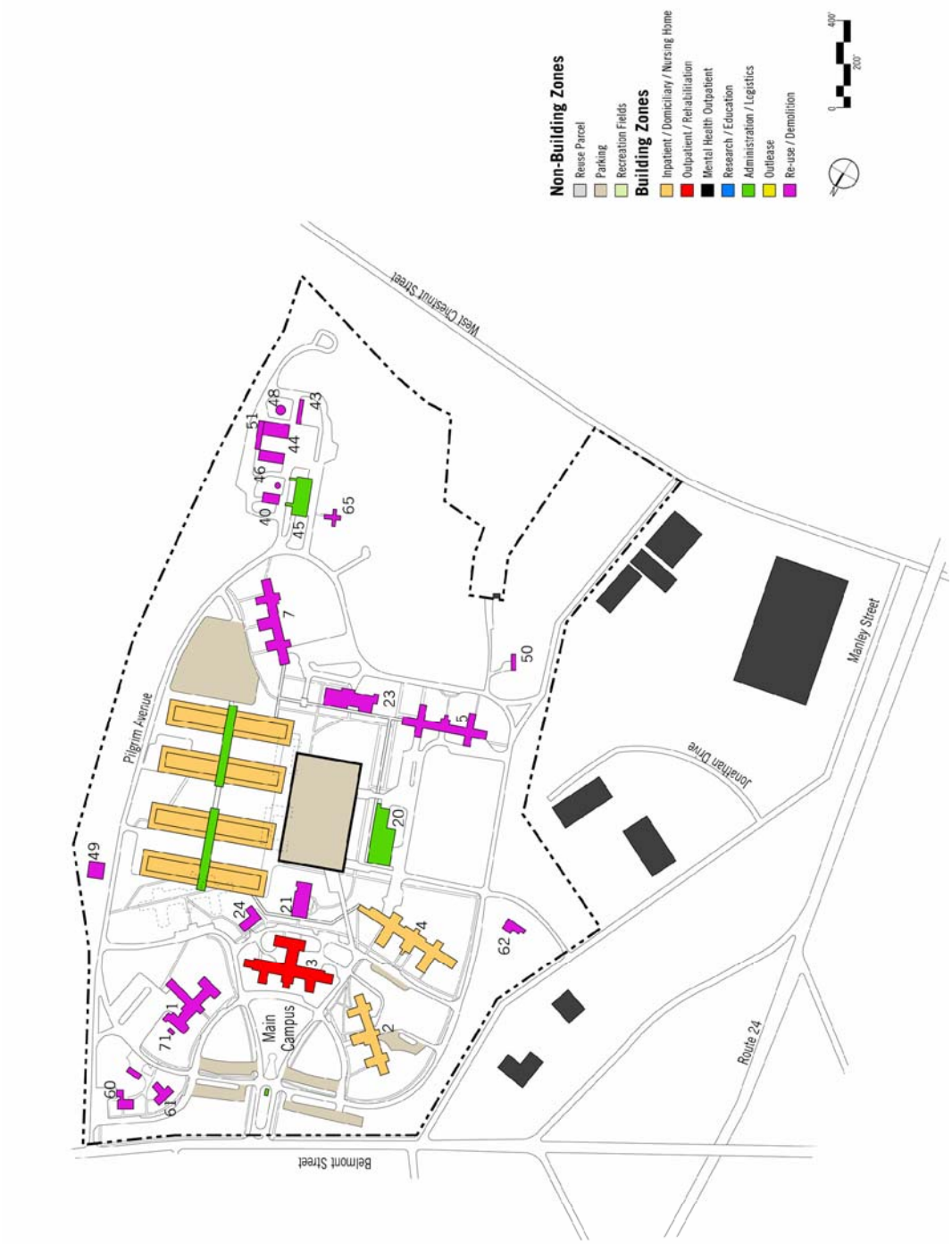


Figure 21: A Diagram of the Projected BPO 11 Jamaica Plain Site Plan

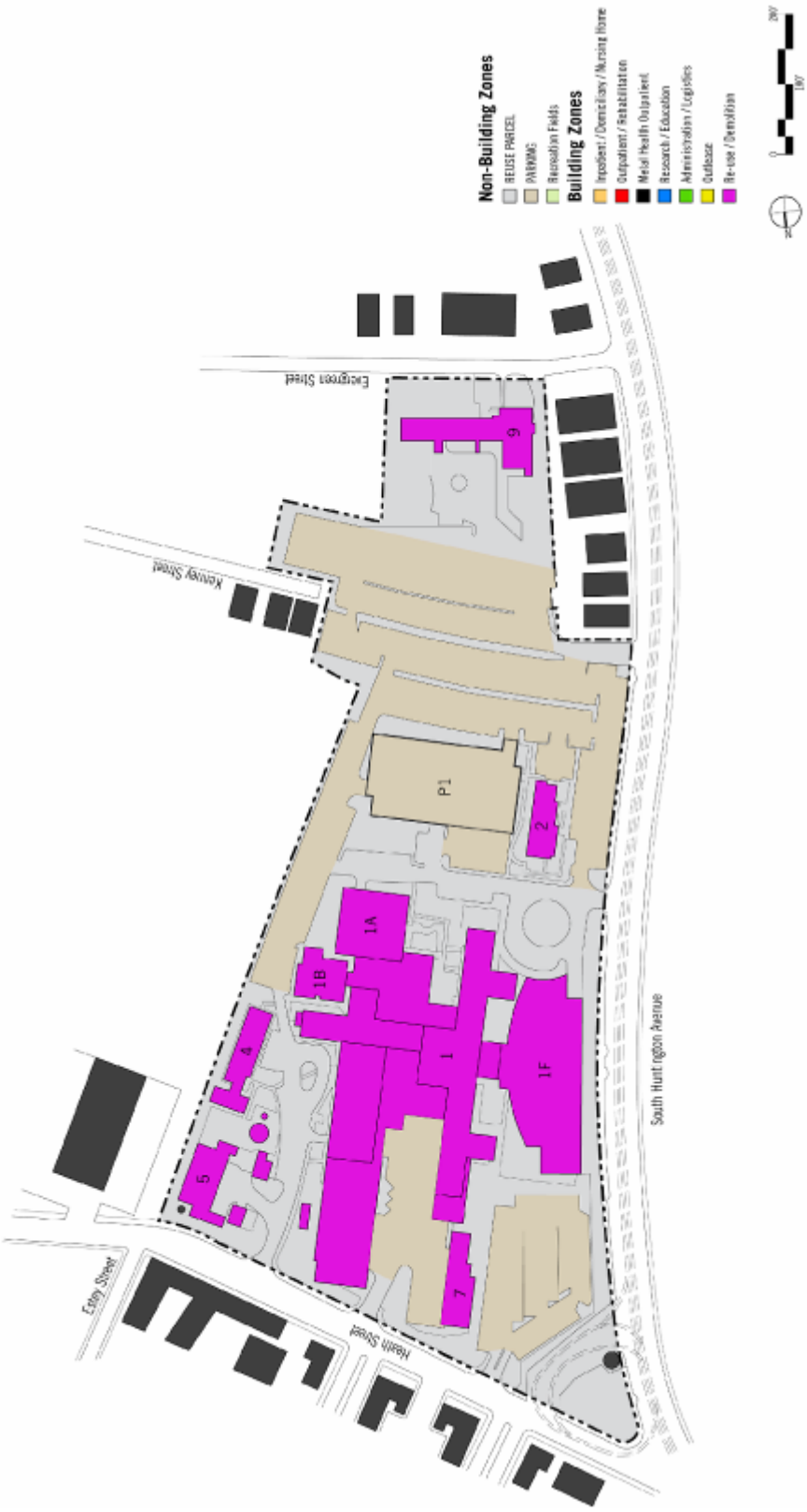
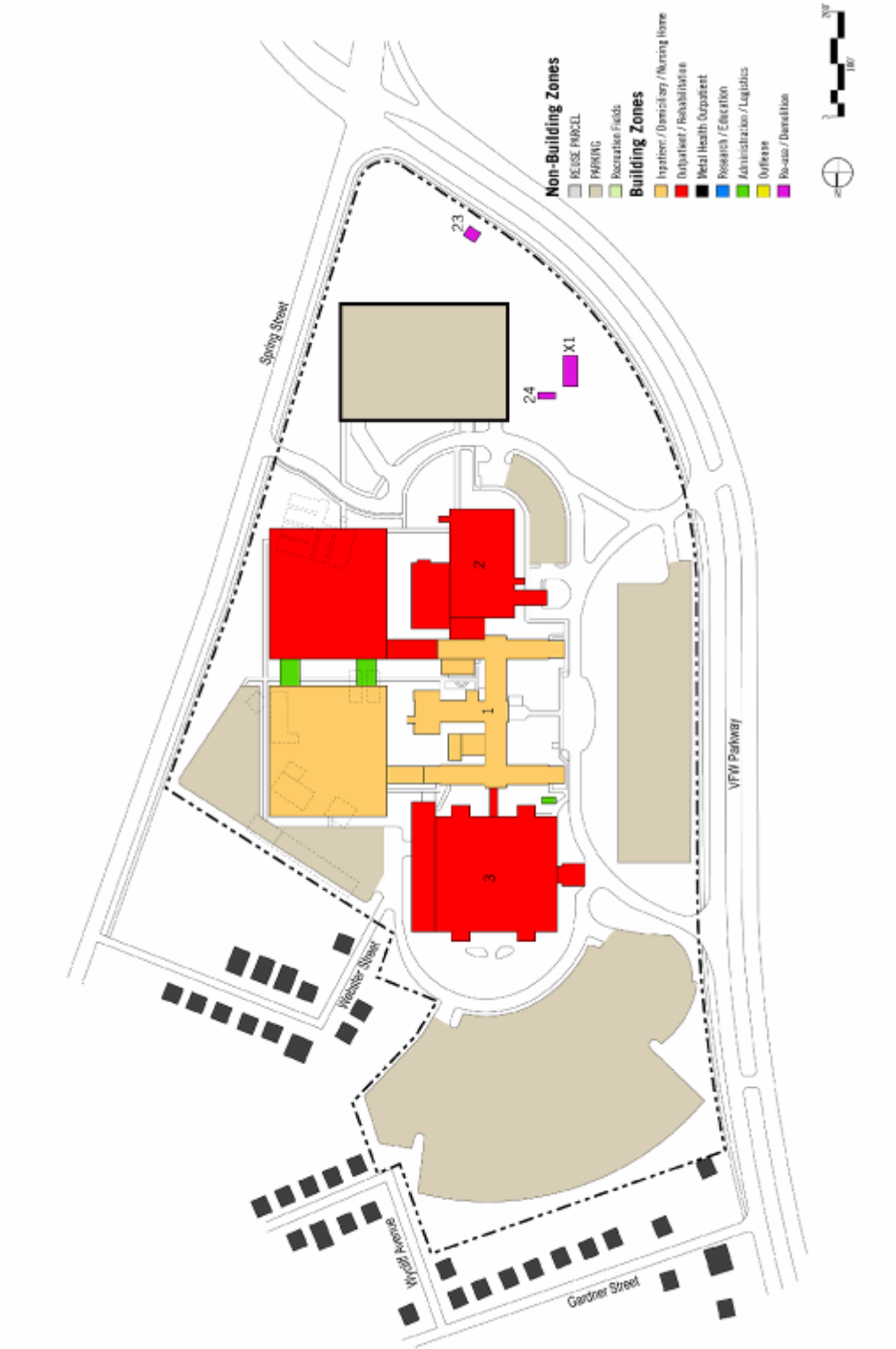


Figure 22: A Diagram of the Projected BPO 11 West Roxbury Site Plan



- Building Color Code: Similar to the Existing Current Stage Site Plan, the building color indicates the Departmental Group (Zone) of the **primary** occupants for each building. Matching the building color key used for the Existing Current State Site Plan, the proposed building color indicates the predominant occupancy of the building. Refer to the Legend regarding the Departmental Group (Zone) contained therein.

- Site Impact during Construction: Site area calculations for cost estimating purposes are identified in the following table. New surface and structured parking and repaving of existing parking areas demand the greatest area and associated costs. Maintenance of the existing recreation fields is assumed.

- Campus Area and uses: The BPO 11 campus configuration as indicated on the site plan for each site is summarized in the table below. The area totals for primary activities on the portions of the site to be retained exclusively for VA-related functions are indicated in the Campus Area Total below.

Table 87: Campus Area Total Acreage – BPO 11

Bedford Campus Total	**Acres**
Buildings and Landscaping	0
Recreation	0
Parking	0
BPO Total (total of above)	0
Existing Campus Total	~183
Brockton Campus Total	**Acres**
Buildings and Landscaping	~131
Recreation	~0
Parking	~15
BPO Total (total of above)	~146
Existing Campus Total	~146
Jamaica Plain Campus Total	**Acres**
Buildings and Landscaping	0
Recreation	0
Parking	0
BPO Total (total of above)	0
Existing Campus Total	~16
West Roxbury Campus Total	**Acres**
Buildings and Landscaping	~22
Recreation	0
Parking	~8
BPO Total (total of above)	~30
Existing Campus Total	~30

- Land Parcels Available for Reuse: The configuration of land parcels for reuse varies with BPO. However, due to the configuration of proposed BPO 11 the Bedford and Jamaica Plain campuses will be available for reuse. The amount of land that is available for reuse is outlined in the table below. Reuse will not occur at Brockton or West Roxbury.

Table 88: Land Parcels Designated for Reuse – BPO 11

Reuse Parcels	Acres
Bedford Parcel 1	~183
Jamaica Plain Parcel 1	~16
Total	**~199**

- Buildings Available for Reuse: Where buildings are not required to accommodate the projected area need, they are marked for reuse or demolition and may be considered for reuse prior to the targeted demolition date. In this BPO the buildings that provide the greatest potential for reuse are all buildings on the Bedford and Jamaica Plain campuses along with Buildings 1, 5, 7, and 23 on the Brockton campus.

- Relocation of Functions: In BPO 11 the functions have been re-organized on each campus as follows:

    - Bedford: The campus is being consolidated into the Brockton campus and therefore all functions will be moved off site.

    - Brockton: The majority of outpatient functions will be maintained at the front of the campus at the entrance from Belmont Street in Building 3. A portion of the additional outpatient services will be provided in the new buildings being constructed on site. Inpatient functions are to be housed in renovated Buildings 2 and 4 and in the newly constructed buildings at the east of the site along Pilgrim Avenue. Logistical and administrative functions will be incorporated into Building 20 and in the renovated and newly constructed buildings.

    - Jamaica Plain: The campus is being consolidated into the West Roxbury campus and therefore all functions will be moved off site.

    - West Roxbury: The site will not see a significant change in the distribution of functions on the campus. Building 1 will be renovated and continue to serve primarily inpatient services. Building 2 and 3 are to remain servicing outpatient functions after renovations. The major adjustment to the site is the construction of two additions behind the existing buildings to accommodate the additional workload. One addition will be dedicated to outpatient services while the other will be committed to inpatient functions. Administrative and logistical functions will be incorporated into both the renovated and new construction.

- Optimal Use of Existing Buildings: The buildings at the four sites vary in age and appropriateness for optimal use in providing healthcare. A majority of the structures at Bedford were constructed more than 70 years ago and are not compatible with modern standards of design for health care. The floor plates are too small (resulting in poor functional adjacencies); the floor to floor heights are too low (resulting in mechanical systems with insufficient air volume); with a few exceptions, the bedrooms share toilets between rooms; and some bedrooms have more than 2 occupants. The conditions at the other sites are more suitable for healthcare since the buildings were constructed more recently and have undergone renovations over the years. However a portion of the

buildings on both Brockton and West Roxbury are more then 50 years old and contain small floor plates resulting in buildings not compatible with modern standards of design for health care and low floor to floor heights (resulting in mechanical systems with insufficient air volume). All sites will need significant renovations to allow for the buildings to be suitable for modern healthcare.

- Projected Workload Volumes for 2023: The projected square foot areas, as derived from workload volumes (see Stage II Assumptions) indicates that the Brockton and West Roxbury sites will require additional square footage compared to the existing conditions which will be provided through new construction because of the increased workloads. Bedford is being consolidated into Brockton so it will no longer need any area to provide services. The same is true for Jamaica Plain as it is being consolidated into West Roxbury. The West Roxbury campus will see a large increase in required square footage because of the additional workload absorbed from Jamaica Plain. See the following tables below. The changes can be attributed to the amount of vacant space on each campus and the change in workload volumes.

- Parking: Portions of the existing surface parking will be repaved and expanded to provide parking in the most convenient locations adjacent to building entries at each campus. Distribution of parking by departmental group is indicated in the following tables. Since there is a large demand for parking at both Brockton and West Roxbury, new structured parking will be constructed to meet the demand.

Table 89: Parking Distribution – Bedford BPO 11

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	0	0	0
Nursing Home	0	0	0	0
Domiciliary	0	0	0	0
Behavioral Health	0	0	0	0
Ambulatory Services	0	0	0	0
Research	0	0	0	0
Administration	0	0	0	0
Logistics	0	0	0	0
Total	**0**	**0**	**0**	**0**

Table 90: Parking Distribution – Brockton BPO 11

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	762	0	304,800
Nursing Home	0	439	0	175,602
Domiciliary	0	207	0	82,800
Behavioral Health	42	0	16,800	0
Ambulatory Services	0	766	0	306,402
Research	67	0	26,800	0
Administration	345	0	138,000	0
Logistics	15	0	6,000	0
Total	**469**	**2,174**	**187,600**	**869,604**

Table 91: Parking Distribution – Jamaica Plain BPO 11

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	0	0	0	0
Nursing Home	0	0	0	0
Domiciliary	0	0	0	0
Behavioral Health	0	0	0	0
Ambulatory Services	0	0	0	0
Research	0	0	0	0
Administration	0	0	0	0
Logistics	10	0	0	0
Total	**0**	**0**	**0**	**0**

Table 92: Parking Distribution – West Roxbury BPO 11

Parking Area	Total Surface Spaces	Total Structured Spaces	Surface Area (SF)	Structured Area (SF)
Acute Care	300	0	120,000	0
Nursing Home	0	0	0	0
Domiciliary	0	0	0	0
Behavioral Health	30	0	12,000	0
Ambulatory Services	300	700	120,001	280,000
Research	50	0	20,000	0
Administration	130	0	52,000	0
Logistics	10	0	4,000	0
Total	**820**	**700**	**328,001**	**280,000**

Note: An additional 241 parking spaces totaling 96,272 sf of structured parking will be included at West Roxbury as the VISN and VA national offices are relocated to the campus.

Note: Parking totals for the campus represent the total parking required for the campus however distribution between departments may vary depending upon specific demand by department.

- Construction Phasing: Phasing for each campus will be in multiple phases to allow for the numerous buildings on each campus to be renovated and new construction to occur in order to provide for a modern, safe, and secure healthcare environment.

- Bedford: The campus is being consolidated to Brockton and therefore phasing is not required as patients and services will be relocated at one time when the Brockton campus is finished with renovations and construction.

- Brockton: The demolition of Buildings 22 and 25 early in the project will facilitate the construction of one of the new inpatient facilities, specifically designed to house the SCI&D (Spinal Cord Injury and Disorder) currently located in Building 8. Once construction of the first building is completed, demolition can occur on Building 8, allowing for the construction of the second new building on the campus. While the new construction is occurring, Buildings 2, 3, 4, and 20 will be renovated allowing for the services to be consolidated on the campus. Utilization of vacant space and buildings designated for reuse as swing space during construction allows for timely and efficient phasing.

- Jamaica Plain: The campus is being consolidated to West Roxbury and therefore phasing is not required as patients and services will be relocated at one time when the West Roxbury campus is finished with renovations and construction.

- West Roxbury: Phasing at West Roxbury will need to occur at the department level as various services will need to be relocated throughout the buildings to free up square footage to allow for the renovation of the 3 main buildings; Buildings 1, 2, and 3. After the first new building is constructed, demolition of Buildings 7, 20, 22, and 30 will facilitate the construction of the second building. The construction of a new parking structure will occur early in the phasing to provide for the increase in parking demand.

- Construction Schedule: Schedules for construction activities are intended to identify relative duration of new construction or renovated work in order to calculate occupancy date for utilization of space and escalation costs. These schedules provide a base on which the implementation plan activities will be incorporated. The Schedule as provided indicates a brief description of the individual building construction projects and indicates the construction sequence and duration for this option. Commissioning of engineering systems will occur the last 20% of each project's duration.

- Existing Building Maintenance Costs: Existing unaltered buildings retained on the campus for the Baseline require ongoing and periodic maintenance costs including buildings that are scheduled for demolition to the point where demolition begins.

- Capital Cost Estimate: An estimate of projected new construction and renovation costs is indicated in The BPO Capital Cost Estimate. The Capital costs are based on campus-wide area projections by Departmental Group (Zone) as indicated in the Projected BPO areas by Departmental Group (Zone).

- Construction Cost depends on Function: Construction costs are derived from projected area requirements by Building and non-Building Departmental Groups (Zones).

- Soft Costs Standardized: Approved factors as stated in the assumptions for soft costs (such as professional fees, furnishings, and equipment) are based on consultant experience and VA standards.

Evaluation of Baseline using Capital Criteria:

- Consolidation of Vacated Space: The area totals of existing vacant space compared to the vacant space in BPO 11 for each campus is outlined in the following tables. All sites except for West Roxbury see a decrease in vacant space as the campus is either consolidated (Bedford and Jamaica Plain), or designed to eliminate existing vacant space as renovation and new construction (Brockton) allows for more efficient use of square footage. West Roxbury will see an increase in vacant space as some residual square footage will be left in the existing Buildings 1, 2, and 3 after renovations and new construction occurs.

Table 93: Percentage of Vacant Space – Bedford BPO 11

Title	Vacant BGSF
Existing Vacant	47,644
Vacant BPO	0
Variance	-47,644
Variance Percent	-100%

Table 94: Percentage of Vacant Space – Brockton BPO 11

Title	Vacant BGSF
Existing Vacant	123,117
Vacant BPO	0
Variance	-123,117
Variance Percent	-100%

Table 95: Percentage of Vacant Space – Jamaica Plain BPO 11

Title	Vacant BGSF
Existing Vacant	11,679
Vacant BPO	0
Variance	-11,679
Variance Percent	-100%

Table 96: Percentage of Vacant Space – West Roxbury BPO 11

Title	Vacant BGSF
Existing Vacant	0
Vacant BPO	18,799
Variance	18,799
Variance Percent	0

- Consolidation of Underutilized Space: The tables below compare the total BGSF for BPO 11 to the projected ideal BGSF for the option based upon the workload. BPO 11 requires a substantial amount of renovation at Brockton as more square footage is required in the renovations to achieve a modern, safe, and secure environment. Brockton and West Roxbury also have significant new construction; therefore these sites are able to meet the projected ideal BGSF with a better efficiency since the design will be for the projected workload. The following table for Brockton indicates a decrease in BGSF compared to the ideal BGSF. This is attributed to assumptions of where various programs such as pathology and research and their associated square footage were re-distributed as Bedford and Jamaica Plain are consolidated.

Table 97: Percentage of Underutilized Space – Bedford BPO 11

Title	Total
Projected Ideal BGSF Based on In-House Workload	0
Proposed BPO BGSF	0
Underutilized Space	0
Variance by Percentage	0%

Note: There is no projected workload for the Bedford campus in BPO 11, however, the projected square footage results from a mathematical functional distribution of projected existing functions to Departmental Groups (Zone). Since the campus is being consolidated, this square footage has been re-assigned to the proper sites.

Table 98: Percentage of Underutilized Space – Brockton BPO 11

Title	Total
Projected Ideal BGSF Based on In-House Workload	1,706,818
Proposed BPO BGSF	1,209,196
Underutilized Space	-497,622
Variance by Percentage	-41%

Note: The projected ideal area need (primarily for Laboratory and Pathology Services) was reduced based on a discussion of assumptions with the local VA representatives. The implication of this area reduction is indicated as the values for the proposed area need in the table above. Even with considerations of additional area required for renovations of existing buildings, the proposed BPO area need is less than the projected ideal need. The result indicates a 41% overall reduction in campus area for this option.

Table 99: Percentage of Underutilized Space – Jamaica Plain BPO 11

Title	Total
Projected Ideal BGSF Based on In-House Workload	0
Proposed BPO BGSF	0
Underutilized Space	0
Variance by Percentage	0%

Note: There is no projected workload for the West Roxbury campus in BPO 11, however, the projected square footage results from a mathematical functional distribution of projected existing functions to Departmental Groups (Zone). Since the campus is being consolidated, this square footage has been re-assigned to the proper sites.

Table 100: Percentage of Underutilized Space – West Roxbury BPO 11

Title	Total
Projected Ideal BGSF Based on In-House Workload	923,066
Proposed BPO BGSF	1,043,103
Underutilized Space	120,037
Variance by Percentage	12%

- Timeliness of Completion: The proposed time for completion of work at each campus in BPO 11 is outlined in the following table from project initiation in January 2009 at all four sites to the completion of the multi-phased projects at each site.

Table 101: Total Construction Duration – BPO 11

Site	Start	Complete	Months
Bedford	01/01/09	01/01/2019	120
Brockton	01/01/09	01/01/2019	120
Jamaica Plain	01/01/09	07/01/2018	114
West Roxbury	01/01/09	07/01/2019	126

- Timeliness of Urgent Seismic Corrections: There are multiple buildings that are classified as "Seismic Non-exempt" on each campus. These buildings which are to be incorporated into this BPO will be renovated to rectify the seismic deficiencies as part of the implementation plan. The urgency to correct seismic deficiencies in existing buildings that will be renovated in this BPO was also factored into the proposed phasing sequence. BPO 11 achieves completion of renovations to all buildings that will be retained with seismic non-exempt status by 2018. All seismic corrections at Brockton will occur in 2016 for renovated buildings and patients will move out of the last "Seismic Non-exempt" building in 2018. West Roxbury will have corrected or demolished all "Seismic Non-exempt" buildings by 2016. Jamaica Plain will leave all "Seismic Non-exempt" buildings by 2018, when the services are consolidated to West Roxbury. "Seismic Non-exempt" buildings on the Bedford will not be renovated since the campus is being consolidated, so last time patients will be in "Seismic Non-exempt" buildings will be 2019 as they move off of the Bedford campus. Buildings with seismic deficient status that are not projected for VA occupancy will be demolished as they become eligible for demolition based on the implementation schedule.

- Size and Complexity of Capital Plan: Projected areas (BGSF) based on 2023 workload volumes indicates a changes to the four campuses as indicated in the following tables.

    - Bedford: The Bedford campus is closing as it is consolidated into the Brockton campus; therefore the table below indicates that all projected square footage will be zero.

    - Brockton: The most noteworthy change to the Brockton campus is the large increase in inpatient services, mainly Acute, Nursing Home, and Domiciliary services. This is attributed to the fact that Brockton will be absorbing a majority of the workload from the Bedford campus.

    - Jamaica Plain: The Jamaica Plain campus is being consolidated into the West Roxbury campus; therefore the table below indicates that all projected square footage will be zero.

    - West Roxbury: The most notable change on the campus in terms of clinical care is in the increase of Acute Care, Ambulatory services, and Behavioral Health. All programs are seeing an increase in required BGSF, with Ambulatory close to doubling in size. Administrative, Logistical, and Research functions are also seeing a large increase in required square footage. A portion of the increased square footage can be attributed to the fact that more square footage is required to renovate the program into the existing Buildings 1, 2, and 3. The increase in workload as Jamaica Plain is consolidated also requires that West Roxbury increase in BGSF.

Table 102: Campus Area Change – Bedford BPO 11

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	82,098	160,954	84,063	74,956	189,323	86,766	178,014	172,543	127,628	**1,156,345**
Projected (BGSF)	0	0	0	0	0	0	0	0	0	**0**
Variance (BGSF)	-82,098	-160,954	-84,063	-74,956	-189,323	-86,766	-178,014	-172,543	-127,628	**-1,156,354**
Variance	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100.00%	**-100%**

Table 103: Campus Area Change – Brockton BPO 11

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	170,700	89,465	83,467	94,656	245,517	13,700	165,282	169,834	114,160	**1,146,781**
Projected (BGSF)	351,388	162,269	124,176	28,928	203,856	15,113	152,537	170,929	0	**1,209,196**
Variance (BGSF)	180,688	72,804	40,709	-65,728	-41,661	1,413	-12,745	1,095	-114,160	**62,415**
Variance	105.85%	81.38%	48.77%	-69.44%	-16.97%	10.31%	-7.71%	.64%	-100.00%	**5.44%**

Table 104: Campus Area Change – Jamaica Plain BPO 11

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	64,447	16,915	43,730	75,623	387,821	108,495	84,788	132,411	39,730	**953,960**
Projected (BGSF)	0	0	0	0	0	0	0	0	0	**0**
Variance (BGSF)	-64,447	-16,915	-43,730	-75,623	-387,821	-108,495	-84,788	-132,411	-39,730	**-953,960**
Variance	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	**-100.00%**

Table 105: Campus Area Change – West Roxbury BPO 11

Distributions	Acute	Nursing Home	Domiciliary	Behav. Health	Amb Services	Research	Admin	Logistics	Out Lease	Total
Existing (BGSF)	146,680	11,900	9,686	12,536	193,784	41,140	33,709	76,523	728	**526,686**
Projected (BGSF)	192,376	6,182	2,815	30,928	356,652	212,828	108,848	132,474	120,340	**1,163,443**
Variance (BGSF)	45,696	-5,718	-6,871	18,392	162,868	171,688	75.139	55,951	119,612	**636,757**
Variance	31.15%	-48.05%	-70.94%	146.71%	84.05%	417.33%	222.90%	73.12%	16430.21%	**120.90%**

Note: An additional 120,340 BGSF of administrative function will be included at West Roxbury in new construction as the VISN and VA national offices are relocated to the campus. This BGSF was derived from existing outlease square footage numbers.

- Patient Moves: In BPO 11, multiple buildings on each campus will be renovated to some extent over multiple phases requiring disruption of services. Each site will need to be phased properly to minimize the amount of patients moves required to carry out critical renovations.

    - Bedford: Patient moves will be minimal, as the campus is being consolidated into Brockton. Patients will be moved one time as they are relocated from Bedford to newly renovated space on other campuses, specifically Brockton.

    - Brockton: The construction of 2 new buildings on campus allows for a minimum of patient moves because of the additional square footage provided enabling services from existing buildings into new construction in one move. Renovation to existing buildings can occur by utilizing vacant space created by patients moving to the new construction.

    - Jamaica Plain: Patient moves will be minimal, as the campus is being consolidated into West Roxbury. Patients will be moved one time as they are relocated from Jamaica Plain to newly renovated space on other campuses, specifically West Roxbury.

    - West Roxbury: Patient moves on the West Roxbury campus will need to occur within the main buildings on campus to let a series of renovations to occur. This allows for the campus to remain functioning while portions of the buildings are renovated. The construction of the new additions will limit the number of patient

moves as the additional square footage will allow more area to be temporarily vacant allowing for the renovations to occur.

- Historic Buildings Altered: There are 91 total buildings identified as historic in the CAI across all four campuses. The breakdown is outlined in the following table below. For this BPO, all will be renovated or demolished.

Table 106: Historic Buildings Altered – Bedford BPO 11

Bedford	**Quantity**
Total Historic or Historically Eligible	52
Altered Historic Buildings	52
Brockton	**Quantity**
Total Historic or Historically Eligible	27
Altered Historic Buildings	27
Jamaica Plain	**Quantity**
Total Historic or Historically Eligible	6
Altered Historic Buildings	6
West Roxbury	**Quantity**
Total Historic or Historically Eligible	6
Altered Historic Buildings	6

Note: Historically eligible buildings are classified as any building that is more then 50 years old.

6.0 Reuse Analysis

Reuse Stage II BPO Assessment and Evaluation Process

The Reuse studies in Stage II determined the market value of campus properties by combining the highest and best use analysis determined in Stage I with legal and regulatory constraints that were clarified during Stage II. In Stage I, the Reuse Team determined market-supportable uses for each BPO, based on an analysis of local rents, sales prices, absorption, changes to supply, and forecasted changes in demand drivers, such as projected employment growth and increase in households, for the markets surrounding each of the hospital sites in consideration. In Stage II, the Reuse team supplemented quantitative data gathered in Stage I with more qualitative and site-specific information provided by leading practitioners in the local markets.

The Reuse team worked collaboratively with the Capital Planning team to identify the optimal site configuration for each BPO that balanced the desirability for reuse with capital planning goals. They also provided information to the financial analysis team regarding projected reuse proceeds resulting from each BPO. All reuse recommendations were informed by the information produced in the initial market assessment and data updates collected during the Stage II analysis.

Inputs and Assumptions

The Reuse Team collected qualitative and quantitative data from local authorities, which, together with the Stage I market assessment, informed the Stage II analysis of reuse potential for the hospital sites. The Reuse Team interviewed local planning officials, developers, brokers, and other real estate professionals and collected the following information that informed the analysis:

- Physical conditions of the site, including total developable area, environmentally sensitive zones, adjacent uses, and access
- Demographic and economic market conditions – local growth patterns, income levels, age distribution, housing market conditions
- Yield assumptions – Financial model assumes a required return of 12 percent
- Evaluation of local political and regulatory climates

The Reuse Team performed a financial analysis for each of the Stage II BPOs for the Boston-area VAMCs. The following financial assumptions were used for each site across all BPOs:

Reuse Assumptions

- Industry standards were utilized for estimating demolition or clean-up requirements as applicable
- "Non-significant" historic buildings were assumed eligible for demolition as opposed to reuse
- At sites where demolition is required to accommodate the reuse options, the Reuse Team has assumed that the costs would be undertaken by the developer entity. Typical ground lease agreements would be signed for the entire site, including existing buildings, and a developer agreement could indicate that engagement in an enhanced use lease would entail financial responsibility for the cost of maintenance and / or demolition of abandoned space.

Financial Assumption

- Revenue assumptions were based on current market sale and lease rates, which were identified in the Stage I market assessment and updated as necessary for Stage II
- All financing assumptions, including interest rates, capitalization rates, and discount rates, among others, were based on current market conditions
- Non-market users were considered to be revenue-neutral
- Land acquisition costs are based on average current market rates for commercial and institutional property.
- Demolition costs were based on market averages

Outputs

The Reuse Team engaged in a collaborative process with the Capital Planning team to identify the optimal site configuration for each BPO that balanced the desirability for reuse with the project goals. A comprehensive study of local market conditions and space opportunities and constraints produced the following outputs to help guide VA:

- *Refined Market Assessment:* The market assessment builds upon the analysis produced for the Stage I report and provides a comprehensive outlook of the real estate markets surrounding each site. The market assessment was produced through a careful and balanced consideration of quantitative market indicators and qualitative data provided by local real estate and planning professionals. The assessment provides market assessment of area, real estate market trends, range of market values and returns, and development risks given market trends.

- *Reuse Revenues:* The Stage I market analysis studied the highest and best uses for newly available land at each of the hospital sites, under each of the BPOs. In Stage II, the analysis incorporated updated market conditions and all applicable legal and regulatory constraints, including enhanced use lease restrictions, to create reuse scenarios that produced the highest and best use under existing constraints. As discussed later in the report, certain market-supported uses that were recommended in Stage I, such as for-sale single- and multi-family housing, are not permitted under enhanced use leasing, which reduces overall reuse revenues. Revenues projected from the reuse options proposed in Stage II were incorporated into the overall financial analysis for each BPO; proceeds from reuse offset investment costs and are factored into the overall net present value calculations for the project.

- *Political and Regulatory Assessment:* The Reuse team conducted an assessment of the political and regulatory conditions, including the political climate, existing and proposed zoning, and other development regulations, that could impact the reuse opportunities on the site.

- *Non-market users:* Non-market users identified through stakeholder and LAP meetings will be noted and addressed in narrative form.

Evaluation Scale

The Reuse Assessment involves four evaluation criteria that are measured according to the following criteria:

Table 107: Reuse Evaluation Scale

Indicator	Description	Evaluation Scale
Market Potential for Reuse	Reflects the strength of the local real estate market. Gauges the market appeal of each BPO as well as the overall market appetite for similar projects.	Each BPO was evaluated on a scale of 1 (low) to 5 (high) to determine the degree of market support for the project. The following evaluation scale was applied to each BPO to determine the viability of each reuse scenario: 1 = Reuse would not be well received by the market 2 = Market is weak for reuse 3 = Market is adequate for reuse 4 = Market exhibits strength 5 = Market is very strong for reuse
Financial feasibility	Total cash flows each BPO will yield to VA. Reuse value reflects a range of financial factors, including demolition costs, capital market conditions, required VA investments, etc.	The financial feasibility of each BPO was evaluated and scored according to a scale of 1 (low) to 5 (high), in which a 1 indicated a reuse expense to VA and an assessment of "5" represented significant positive cash flows. Each BPO was scored according to the following evaluation scale in order to assess financial viability of reuse 1 = Transaction expected to result in negative cash flow 2 = Transaction will generate less than satisfactory cash flows 3 = Transaction will generate marginal cash flows 4 = Transaction will generate material cash flows 5 = Transaction will generate significant cash flows

VA mission enhancement:	Qualitative assessment of how the overall reuse solution may support VA mission. The assessment includes the degree of compatibility that the reuse option has with the existing Medical Center activities, the existence of synergies that benefit both parties, and other potential complimentary elements of the BPO.	An assessment of "1" represents a reuse plan that is not compatible with VA's mission, which is least preferred since this would not enhance and could possibly hinder the goals of VA. An assessment of "5" represents a reuse plan that is most compatible with VA's mission, which is most preferred since this would enhance the ability of VA to meet its goals 1 = Least compatible with / provides least enhancement of VA mission 2 = Less compatible with / provides less enhancement of VA mission 3 = Similar compatibility / enhancement of VA mission as other BPOs 4 = More compatible with / provides more enhancement of VA mission 5 = Most compatible with / provides best enhancement of VA mission
Execution Risk	Qualitative assessment of the level of complexity and risk required from a real estate perspective to accomplish the deal and deliver the cash flows presented in the highest and best use and financial feasibility option analysis. Execution risk assessment considers risk factors associated with both market and financial issues, taking into account the local context. Reuse execution risk measures market risk and does not include operational risk associated with relocating hospital functions.	An assessment of "1" represents significant obstacles to the successful implementation of the reuse plan, which is least preferred since this could indicate inability to realize reuse proceeds in a timely manner. An assessment of "5" represents no obstacles to a successful implementation plan, which is most preferred since this would indicate that VA would realize expected reuse proceeds in a timely manner. 1 = Option presents barriers that cannot be resolved 2 = Option presents significant obstacles that may not be resolvable 3 = Option may present obstacles that are resolvable with some difficulty 4 = Option may have some obstacles, but they should be reasonably resolvable 5 = Option presents no significant obstacles or barriers to execution

Analysis

Market Assessment

As part of the Stage I analysis, the Reuse team performed a comprehensive real estate market assessment in order to understand local market conditions and demands. The market assessment addressed demographic trends and an evaluation of the local housing, commercial and industrial markets, which provided the inputs for the financial and qualitative assessment of each BPO. Growth and sustainability in the markets for each of the land uses considered as reuse options are driven by demographic and economic factors (e.g. employment growth drives demand for office space).

The following section provides a summary of the market assessment for the region as a whole and for each site. The Reuse team cautions that the real estate market is volatile and changes in the current market conditions would affect potential reuse opportunities at each site.

Boston Region[9] Overview

Projected trends in population, employment, and real estate markets informed the reuse study by indicating areas of potential demand for reuse scenarios. The paragraphs below highlight key demographic[10] and market trends have been identified for the region.

- *Population Growth* – The total population of the region in 2005 was 6.2 million, and the region is expected to gain 167,000 (0.5 percent annual growth) by 2010.

- *Labor Market* - As of year-end 2004, the Boston region's labor force was close to 3.3 million, with a 5 percent rate of unemployment. The labor force in the region is shrinking – between 1999 and year-end 2004, the number of employed people declined and there number of job-seekers doubled.

- *Market Rate Residential* - According to The Greater Boston Housing Report Card 2005-06[11], in spite of the downturn in the national housing market and rising interest rates, the housing market in the Boston area has remained stable. House prices dropped slightly for the first time in a decade in early 2006, however rents increased and the number of housing permits rose to 16,000 housing units in 2005.

- *Senior Housing* - According to national real estate research firm Marcus & Millichap, occupancy rates for independent senior housing in the Northeast reached 96 percent in 2004,

9 For the purpose of the market analysis, the Boston region was defined as the Boston New England County Metropolitan Area (NECMA), which the US Census Bureau defines as the following counties: Bristol County, Essex County, Middlesex County, Norfolk County, Plymouth County, Suffolk County, Hillsborough County, Rocking ham County, and Strafford County.

10 Demographic trends were compiled using projections from ESRI GIS and Claritas. The two data providers are the nation's leading sources for demographic data, and projections are provided for the current year and five years into the future.

11 The Greater Boston Housing Report Card 2005-06 was prepared by Northeastern University Center for Urban and Regional Policy for Citizens' Housing and Planning Association (CHAPA) and The Boston Foundation.

the highest in the nation. In the Boston area, urban market rate senior housing developments have fared poorly, and urban affordable housing developments face a competitive financing market.

- *Retail* – Since 2000, close to 11.8 million SF of retail space has been added or renovated in the Boston NECMA, of which nearly 22 percent is attributable to retail projects in Middlesex County. Retail centers in the Greater Brockton Area (Bristol, Norfolk, and Plymouth Counties) account for an additional 4.5 million SF (38 percent) of the supply.

- *Commercial Office* – The Boston office market (defined as the NECMA region excluding Strafford County) is comprised of 292 million SF of space and over 6,800 buildings, with 45 percent of the office space is classified as Class A. As of Q2 2005, vacancy rates were stable at 13.2 percent, and average asking rents were $10 below the peak asking rent in 2000 of over $33 per SF.

- *Light Industrial* – The light industrial market analysis focused on flex space and warehousing and distribution facilities. The Boston area flex market comprises approximately 115.4 million SF in 2,125 buildings. Overall vacancy in 2005 was high at 18.6 percent, a positive net absorption of 1.4 million SF in 2004 indicated the beginnings of a recovery. Triple net asking rents average $9 per SF, with locations north of Boston commanding a significant premium. Asking rent for warehouse space is significantly lower than flex space, as are vacancy rates.

- *Hospitality* – The hotel market in the Boston region consists of 63,498 rooms in 226 properties, with 71 percent of the rooms located in full-service hotels. Visitation data from the Greater Boston Convention and Visitors Bureau indicates that travel to the region has been steadily increasing since 1999, and in 2005, visitation levels to Boston were expected to reach 16.7 million.

Bedford

The Town of Bedford, located in Middlesex County, was home to 13,000 residents and offered 23,000 jobs in 2000. An average of 200 housing units is sold each year in Bedford. The majority of the housing stock built in the last five years were Colonial-style, single-family detached homes ranging in size from 2,600 SF to 3,900 SF. The senior population in Middlesex County is expected to grow by 23,000 between 2000 and 2010, and if Middlesex County seniors choose to live in senior housing at the national average rate, the region will require 99 new senior units annually. According to the Department of Housing and Community Development, as of January 18, 2007, 14.3 percent of Bedford's housing stock qualified as affordable under Chapter 40B.

Due to current zoning and the character of the surrounding neighborhoods (wetlands and low density single family residential) low-density residential development is the most viable reuse option, and other reuse options such as light and heavy industrial uses, and commercial uses such as retail and office space, as well as any hospitality use, are not viable on the site, therefore were not considered in the market analysis.

Hearthstone Associates proposes to develop and operate an 80-bed Alzheimer's Assisted Living Community on VA owned land. The terms of the ground lease have not been decided, but it is likely that the VA will be compensated through a mix of annual ground rent payments and in-kind services.

Brockton

The Town of Brockton is located 20 miles south of Boston and, in 2000, was home to 93,000 residents. An average of 2,000 housing units are sold each year in Brockton, with single-family detached homes accounting for slightly more than half of total sales volume. Approximately 75 percent of the housing stock built and sold in the last five years was single-family detached homes ranging in size from 980 SF to 2,300 SF. According to the Department of Housing and Community Development, as of January 18, 2007, 12.8 percent of Brockton's housing stock qualifies as affordable under Chapter 40B.

The Brockton VAMC is located in the Route 24 retail submarket, which consists of over 5.6 million SF of retail space, ranging from small (under 30,000 SF) convenience centers to regional malls, such as the 713,000 SF Westgate Mall in Brockton. The Greater Brockton Area experienced real growth in sales of 3.2 percent between 1997 and 2002 (from $19.1 billion to $24.6 billion). This level of growth could sustain between 1.5 and 2.2 million SF of retail space per year, which is slightly higher than the 2005 annual retail growth of 1.1 million SF per year.

The Brockton campus is within the CoStar-defined Route 24 office market, which is comprised of 3.1 million SF of office space (slightly more than 1 percent of the total Boston Area office inventory). The market is comprised primarily of Class B (41 percent) and Class C (50 percent) office space.

Jamaica Plain

Jamaica Plain is a diverse and dynamic neighborhood, and its proximity to downtown Boston, public transportation, parks, bikeways, and rich neighborhood community have made it an increasingly desirable neighborhood in which to live. According to Census 2000 estimates, 38,000 people live in Jamaica Plain, and the neighborhood is home to a diverse community of Latino immigrants from Cuba and the Dominican Republic. Townhouses and condos account for nearly 90 percent of the housing stock built and sold in Jamaica Plain over the last five years. 70 percent of the 16,117 housing units in Jamaica Plain in 2005 were renter occupied. Since 2000, median home sales prices in Jamaica Plain have increased at an average annual rate of 13.1 percent.

The Jamaica Plain campus is located in the CoStar-defined Roxbury/Dorchester retail submarket, which includes 33 shopping centers comprising a total of 1.2 million SF of space, including the 450,500 SF South Bay Center in Dorchester.

Most of the retail within immediate proximity to the VA hospital is located to the south on Centre Street. Much of the vacancy in the retail submarket is concentrated in convenience oriented centers that are 75 percent dark. Vacancy in the Roxbury/Dorchester submarket is estimated at 3.7 percent, which indicates a healthy retail market.

Supply within the Jamaica Plain office market (defined as the Roxbury/Dorchester submarket) is tight. Vacancy has remained below 5 percent and net absorption has remained positive since the end of 2000. The Roxbury/Dorchester office submarket consists of 60 buildings containing a total of over 2.6 million SF. Office space is divided evenly between Class A,B, and C buildings. The Roxbury/Dorchester submarket has been averaging 117,000 SF of net new demand annually since 2000.

West Roxbury

According to Census 2000 estimates, 27,000 people live in West Roxbury. Since the mid-1990's, between 500 to 600 homes per year were sold in West Roxbury. Approximately half of the units sold were single-family homes, one-third were condo units, and the balance were other unit types (e.g. townhouses and row homes). As of the 2000 Census, only 30 percent of the 11,925 housing units in West Roxbury were rented. Home sale prices in West Roxbury increased 12.5 percent annually between 2000 and 2005. Multifamily condos have led pricing growth, with median sales value increasing at an average annual rate of 14.6 percent. Given the general softness in the Boston rental market, it is unlikely that a private developer would consider a major rental residential project in a neighborhood that is predominantly owner occupied.

The West Roxbury campus is located in the CoStar-defined South Suffolk retail submarket, which contains 33 shopping centers and closet to 605,000 SF of store space. Convenience centers are the predominant type of shopping center, representing 27 of the total centers. Most of the establishments located on Spring Street and the VFW Parkway are food and convenience oriented retail, indicating limited co-tenancy potential with comparison retail (i.e., apparel, home furnishings, etc.). Relative to other Boston-area submarkets, South Suffolk reports a high vacancy rate of 14.3 percent, with convenience-oriented centers reporting a vacancy rate of 28.3 percent.

Financial Feasibility

The financial feasibly of each reuse strategy was informed by the market analysis, conversations with local real estate professionals and public officials, and capital strategy. The market analysis and local interviews helped determine the type and extent of uses that have market support at each site. The capital plan established the parameters of land available for reuse at each site. A financial model was then created to calculate the revenue potential associated with ground leasing newly available space to private developers. Ground lease revenues were incorporated into the overall financial assessment of each BPO. The table below summarizes the reuse plan for each BPO and the associated ground lease revenues.

The Reuse Team evaluated the full spectrum of market-supportable uses for each hospital site, including single family, multi-family, and elderly housing; retail; commercial office; light industrial; and hotel development. The Stage I report recommended reuse opportunities at all four sites that utilized all or a significant portion of the land and facilities. However, due to the limitation of enhanced use leasing, some of the reuse opportunities (such as for-sale residential) are no longer viable, thereby reducing the scale of the revenue-generating reuse options at each site.

Table 108: Reuse Valuation

BPO	Reuse Option	Program	Financial Feasibility
Baseline	Status Quo	There is no reuse component in the baseline scenario.	NA
BPO 8	Bedford – Complete Reuse	Bedford hospital functions are consolidated at Brockton. 12 acres of the Bedford site are reused for an 80-bed assisted living facility; a 100-unit senior housing development is built on 13 acres of the site. New development will all occur on currently undeveloped land.	Transaction will generate material cash flows
	Jamaica Plain – Partial Reuse	Due to regulatory constraints, there is no reuse program that is viable for the partial reuse of the Jamaica Plain campus.	
BPO 10	Bedford – Complete Reuse	Bedford hospital functions are consolidated at Brockton. 12 acres of the Bedford site are reused for an 80-bed assisted living facility; a 100-unit senior housing development is built on 13 acres of the site. New development will all occur on currently undeveloped land.	Transaction will generate material cash flows
	West Roxbury – Complete Reuse	West Roxbury hospital functions are consolidated at Jamaica Plain. Campus reuse program includes a 35,000 SF shopping center located at the intersection of VFW Parkway and Spring Street.	
BPO 11	Bedford – Complete Reuse	Bedford hospital functions are consolidated at Brockton. 12 acres of the Bedford site are reused for an 80-bed assisted living facility; a 100-unit senior housing development is built on 13 acres of the site. New development will all occur on currently undeveloped land.	Transaction will generate material cash flows
	Jamaica Plain – Complete Reuse	Jamaica Plain hospital functions are consolidated at West Roxbury. 15,000 SF of retail space are developed at the ground floor of Building 1.	

Regulatory Assessment

Federal, State, and Local land use regulations set the parameters for the reuse strategy for each BPO. The following section provides an overview of the regulations that informed the reuse recommendations. Each of these regulatory issues will need to be revisited as plans for each campus are further developed.

Long term ground leasing

The enhanced use lease restriction precludes the VA from land disposition, and the highest and best use options that were recommended for each site in Stage I were not allowable reuse alternatives. While outright sale and disposition could lead to higher reuse revenues, ERA analyzed reuse revenues assuming a long term ground leasing model for the following reasons:

- *Revenue Recognition* – Conversations with the Department of Veterans Affairs revealed that any proceeds from land sale will go to the Treasury, not the Office of Veterans Affairs, negating any financial gain associated with selling land. In order to capture revenues associated with developing land and facilities, all of the reuse scenarios assume that the VA will enter into long-term (49-year) ground leases with private developers.

- *Brockton Deed Restrictions* - On July 7, 1949, the City of Brockton entered into a land agreement with the United States government that granted title to the federal government of the hospital property for use by the office of Veterans Affairs (Deed Number 33-22-504-1). Section Four of the land deed states that the jurisdiction over the hospital site will revert to the Commonwealth if the land ceases to be used by the US government for hospital purposes. This land deed makes any reuse scenario unviable at the Bedford site, and all BPOs assume that hospital services will continue to be provided at Bedford.

Affordable Housing

Any new housing developments associated with hospital reuse will have to conform to the affordable housing goals and regulations for the municipality in which the development is proposed. Each of the VA hospital sites (Bedford, Brockton, and Boston) are committed to sustaining their local stock of affordable housing, and any new housing development will need to contain and affordable component in order to maintain the local subsidized housing inventory ratio. Conversations with brokers and local planning officials indicated that within Jamaica Plain, at least 15 percent of the proposed new housing units would need to be affordable in order to receive local approval. For the other three hospital sites, at lease ten percent of new housing development will need to qualify as affordable in order to be permitted.

The Commonwealth of Massachusetts enacted Chapter 40B in 1969 in order to achieve a minimum level of affordable housing across all of its towns and cities. Where less than ten percent of the housing stock in a town or city qualifies as affordable, a developer with plans for new housing in which at least 20 percent of the units are affordable can use Chapter 40B to circumvent the local approvals processes and receive development permits from local zoning board of appeals. According to the Citizens Housing and Planning Association (CHAPA), approximately 43,000 units in 736 developments have been created under Chapter 40B statewide since the early 1970s. More than 10 percent of the housing stock in Bedford, Brockton, and Boston is classified as affordable, therefore Chapter 40B regulations would not apply to proposed new development.

Zoning

Local zoning regulations that apply to the hospital site and to the land adjacent to the property will influence the reuse potential for the campus. Any proposed use that does not comply with local zoning codes will need to apply for a zoning variance, which is granted on a case-by-case basis by the local zoning aboard of appeals. The reuse component of each BPO conforms to current local zoning regulations, which are defined below:

Bedford – The VA property in Bedford and its surrounding parcels are currently zoned Residence-A, which permits single-family and two-family housing; churches, schools, and

related institutions; and agriculture, forestry, and land conservation. Uses not allowed in the Residence-A district include commercial activities (retail, office uses, hotels, motels) and industrial activity. The hospital campus is a legally non-conforming use.

Brockton – The VA property in Brockton and its surrounding parcels are currently zoned R-1-B-Single Family Residential, which allows as-of-right single-family homes on 30,000SF lots, all type of schools, churches, museums, libraries, public parks, municipal buildings, public utility installations, philanthropic institutions, private nursery schools, and mobile home senior communities. Uses not allowed in the R-1-B district include most type of service, retail, wholesale, recreation, and light industrial use. The hospital campus is a legally non-conforming use.

Jamaica Plain – The VA property in Jamaica Plain is currently zoned Neighborhood Institution (NI), which allows as-of-right or conditionally any type of community use, most types of cultural uses, most types of schools, fitness centers, funeral homes, all types of medical uses, a bed and breakfast open space, research labs, all types of residential uses, and animal hospitals. Uses not allowed in the NI district include commercial and industrial uses. The hospital campus is a legally conforming use.

Parcels adjacent to the Jamaica Plain VA property are zoned either 2F-Two-family residential, 3F-Three-family Residential, or as Open Space.

West Roxbury – Like the Jamaica Plain site, the VA property in West Roxbury is zoned Neighborhood Institution (NI). Adjacent parcels are zoned either 1F-One-family Residential or as Open Space. The hospital campus is a legally conforming use.

Evaluation of reuse options using reuse criteria

Team PwC's approach to reuse assumes that the four hospital campuses are programmed with the land uses that maximize combined reuse value potential for all locations and conform to legal and regulatory constraints, VA goals, and forecasted market conditions. The following section evaluates each reuse options for each BPO according to the evaluation criteria described in the Stage II Methodology.

BPO 8 Reuse Evaluation

BPO 8 proposes a complete reuse of the Bedford campus and a partial reuse of the campus facilities at Jamaica Plain. The reuse option for the Bedford campus entails moving existing hospital functions into the Brockton VA facilities, leaving 183 acres available for reuse. Plans for reuse include an 80-bed assisted living facility that will be built on 12 acres and a 100-unit senior housing development that will be built on 13 acres of the site. New development will all occur on currently undeveloped land.

The PwC team recommends that elderly housing development in Bedford follow a master lease model that has proven successful in Boston in which residents pay an entry fee to join the community (the entry fee is estimated to equal roughly $200 thousand per unit), then pay monthly cost that covers operating expenses. Residents can generate the entry fee through sale of their existing house, and can recoup the entry fee when they leave the elderly community.

This option is attractive to elderly residents who are interested in paying low monthly fees and maintaining the value of their investment.

Economies of scale are important in making elderly housing affordable, however projects that are too large become difficult to maintain. Local developers estimated that 100 units was the ideal size for elderly housing development in suburban Boston. Conversations with local real estate developers and planning officials revealed that an elderly housing should take the form of clustered town house units that are single-storied and attached.

The highest and best use for the partial reuse of the Jamaica Plain campus would convert the 51,000 SF of vacated space in building 9 into a market-supportable use, such as condominiums. However, land sale restrictions imposed upon the VA make this reuse option unviable. Apartment leasing is not tenable for the site because current market rents cannot support the development costs associated with rehabilitation of Building 9, and other market uses, including retail, office, or hotel, are not viable in the site. Therefore, there is no viable reuse scenario for the partial use of the Jamaica Plain campus.

The evaluation of the reuse program proposed for BPO 8 focuses on the reuse planned for the Bedford campus, since a partial reuse of the Jamaica Plain site is not tenable.

- *Market potential for reuse* – The reuse scenario proposed for the Bedford campus is directly in line with the market potential for development at the hospital site. Reuse at the Bedford site is limited by restricted access, poor street visibility, and environmental constraints imposed by the surrounding wetlands. Zoning and site constraints eliminates reuse options such as light and heavy industrial uses, and commercial uses such as retail and office space, as well as any type of hospitality use. Given the existing constraints, the primary reuse potential for the Bedford campus is for low-density, residential development.

- *Financial feasibility* – The PWC team understands that the VA office is limited to long term ground leasing for new development on hospital property, and, given this constraint, elderly housing provides the highest and best reuse option for the VA campus. The proposed master lease model for provides developers with up-front equity and makes elderly housing the most financially viable form of housing development. Market economics suggest that the proposed elderly housing development and assisted living center could generate material cash flows.

- *VA Mission Enhancement* – Both the proposed elderly housing development and the tabled deal with Hearthstone Associates to develop and operate an 80-bed Alzheimer's Assisted Living Community are consistent with VA's mission and would also help fulfill an increasing need for these type of facility in the Boston Metro Area. These developments maximize the value of the reused land on the Bedford site and are compatible with future operational requirements at the facility.

- *Execution Risk* – Developing elderly housing in the Boston area is challenging and requires specialized expertise in housing needs for elderly residents, affordable housing financing,

deal structuring, and the local development climate. Market-rate elderly housing is not financially viable in Boston, and funding that is available for affordable elderly housing development is limited. Developers compete aggressively to attain tax credits and HUD funds earmarked for affordable elderly housing development. However, once funding is obtained, then the master lease model for elderly housing development buffers execution risk by collecting equity investment from residents up-front. The VA will minimize its execution risk in this venture by working with an experienced local developer and soliciting community input to create redevelopment plans.

BPO 10 Reuse Evaluation

BPO 10 proposes a complete reuse of the Bedford campus and a complete reuse of the campus facilities at West Roxbury. As in BPO 8, above, the reuse option for the Bedford campus entails moving existing hospital functions into the Brockton VA facilities, leaving 183 acres available for reuse. Plans for reuse include an 80-bed assisted living facility that will be built on 12 acres and a 100-unit senior housing development that will be built on 13 acres of the site. The reuse program for the West Roxbury campus entails moving existing hospital functions into the Jamaica Plain VA facilities, leaving 30 acres available for reuse. Plans for reuse include a 35,000 SF shopping center located at the intersection of VFW Parkway and Spring Street. New development will all occur on currently undeveloped land.

The market analysis conducted by the PwC team suggested that the highest and best use for the reuse of the West Roxbury campus was 410 units of for-sale townhouses combined with a 35,000 SF retail shopping center. However enhanced lease restrictions of the VA prevents the sale of land for residential development, and current market conditions do not support the development of rental housing on the site. Retail remains a viable reuse alternative and is the only use that is currently supportable on the West Roxbury campus.

The evaluation of the Bedford reuse component of BPO 10 can be found in the reuse evaluation for BPO 8 (above). The section below evaluates the program for the complete reuse of the West Roxbury campus based on the reuse evaluation criteria.

- *Market potential for reuse* – While the retail market in West Roxbury soft, convenience-based retail that is anchored by a drugstore or similar tenant could complement the recent housing growth in the area. Of the two VA hospitals located in the City of Boston, West Roxbury's campus configuration is more appropriate for a neighborhood-level retail package of approximately 35,000 SF.

- *Financial feasibility* – Local market economics suggest that a retail ground lease at the West Roxbury site could generate material cash flows.

- *VA Mission Enhancement* – Retail redevelopment at the West Roxbury campus may not be consistent with the mission of the VA although it provides revenue through the one of the site's highest and best uses. Due to the restrictions of enhanced use leasing there is not market support for the reuse of much of the campus.

- *Execution Risk* – Softness in the West Roxbury retail market suggests a developer might have to consider offering rent concessions in order to attract a suitable tenant for convenience-oriented retail uses. Additionally, because the area is currently zoned N1, which does not permit commercial use, development could require a special permit or variance to be granted by the local zoning board of appeals.

BPO 11 Reuse Evaluation

BPO 11 proposes a complete reuse of the Bedford campus and a complete reuse of the campus facilities at Jamaica Plain. As in BPO 8 (above) the reuse option for the Bedford campus entails moving existing hospital functions into the Brockton VA facilities, leaving 183 acres available for reuse. Plans for reuse include an 80-bed assisted living facility that will be built on 12 acres and a 100-unit senior housing development that will be built on 13 acres of the site. The reuse option for the Jamaica Plain campus entails moving existing hospital functions into the West Roxbury VA facilities, leaving 16 acres available for reuse. Plans for reuse at Jamaica Plain include 15,000 SF of retail space to be developed at the ground floor of Building 1.

The evaluation of the Bedford reuse component of BPO 11 can be found in the reuse evaluation for BPO 8 (above). The section below applies the reuse evaluation criteria to the program planned for the complete reuse of the Jamaica Plain campus.

- *Market potential for reuse* – Market fundamentals suggest that the greatest reuse opportunity for the Jamaica Plain campus is the redevelopment of the main hospital (Building1) as either commercial or residential. However, because the Office of Veterans Affairs is restricted to long term ground leasing and cannot sell its properties, the full revenue potential associated with residential development cannot be achieved. Current market rent levels do not support a ground lease option for apartment housing.

  Given restrictions on land sale, the highest and best market use for the Jamaica Plain campus is to develop retail space on the ground floor of Building 1 that will serve the surrounding community. Team PwC envisions a minor retail component where one or two convenience-oriented retail tenants occupy ground floor space in a redeveloped Building 1.

- *Financial Feasibility* - Local market economics suggest that a retail ground lease at the Jamaica Plain campus could generate marginal cash flows. While this is the lowest revenue generating redevelopment option, a positive return suggests that this scenario should be pursued nonetheless.

- *VA Mission Enhancement* - Retail development at the Jamaica Plain campus may not be consistent with the mission of the VA although it provides revenue through the site's highest and best use (assuming certain legal and regulatory constraints). Due to the restrictions of enhanced use leasing there is not market support for the reuse of much of the campus.

- *Execution Risk* – High vacancy rates in the convenience-oriented retail market in the Roxbury/Dorchester area indicate that there is substantial market risk associated with the proposed new retail development at the Jamaica Plain campus. Moreover, regulatory restrictions prevent the development of other market-supportable uses on the site, such as retail and commercial office space, which limits the demand for convenience-oriented retail.

Recommendations

Evaluation of reuse options using reuse criteria

The PwC team has carefully assessed the value, risk, and desirability of the reuse scenario associated with each BPO. Based on the reuse evaluation criteria, BPO 10 yields the highest reuse revenue, lowest development risk, and is most in line with the mission of the VA. Each BPO includes re-development on the Bedford campus, which produces the highest revenue, captures the greatest market share, and yields the lowest market risk of all the reuse options. Additionally, BPO 10 captures the revenue potential associated with retail development on the West Roxbury site. BPO 8 includes the partial reuse of Jamaica Plain campus, which does not carry any reuse potential. BPO 11 includes retail development on the Jamaica Plain campus that carries substantial execution risk and low revenue yields. An evaluation of each reuse option is summarized below.

Table 109: Reuse Evaluation Table

Indicator	BPO / Reuse Options	Evaluation Score
Market Potential for Reuse 1 = Reuse would not be well received by the market 2 = Market is weak for reuse 3 = Market is adequate for reuse 4 = Market exhibits strength 5 = Market is very strong for reuse	BPO 8 / Bedford – Complete Reuse Jamaica Plain – Partial Reuse	**4** – There is growing demand for elderly housing in suburban areas of Boston, and both the 100-unit senior housing development and assisted living facility have strong market support and revenue generating potential.
	BPO 10 / Bedford – Complete Reuse West Roxbury – Complete Reuse	**4** – Elderly housing development on the Bedford site has strong market support. While the retail market in West Roxbury is soft, existing market demand, combined with projected steady growth in housing, can support the proposed convenience retail center.
	BPO 11 / Bedford – Complete Reuse Jamaica Plain – Complete Reuse	**4** – Elderly housing development on the Bedford site has strong market support. Enhanced lease restrictions of the VA preclude land sale for housing development and prevent the redevelopment program for the Jamaica Plain campus from capturing the full market demand. The high vacancy rate for convenience-oriented retail, combined with the limited surrounding uses, creates limited market support for the proposed 15,000 SF retail development.

Financial feasibility 1 = Transaction expected to result in negative cash flow 2 = Transaction will generate less than satisfactory cash flows 3 = Transaction will generate marginal cash flows 4 = Transaction will generate material cash flows 5 = Transaction will generate significant cash flows	BPO 8 / Bedford – Complete Reuse Jamaica Plain – Partial Reuse	**4** – The proposed elderly housing development at the Bedford campus creates a large up-front injection of equity that generates material cash flows to the project.
	BPO 10 / Bedford – Complete Reuse West Roxbury – Complete Reuse	**4** – The proposed elderly housing development at the Bedford campus creates a large up-front injection of equity that generates material cash flows to the project. The PwC Team estimates that the proposed 35,000 SF retail development on the West Roxbury campus will generate minimal annual revenues.
	BPO 11 / Bedford – Complete Reuse Jamaica Plain – Complete Reuse	**3** – The proposed elderly housing development at the Bedford campus creates a large up-front injection of equity that generates material cash flows to the project. The PwC Team estimates that the proposed 15,000 SF retail development on the Jamaica Plain campus will generate insignificant annual revenues.
VA mission enhancement 1 = Least compatible with / provides least enhancement of VA mission 2 = Less compatible with / provides less enhancement of VA mission 3 = Similar compatibility / enhancement of VA mission as other BPOs 4 = More compatible with / provides more enhancement of VA mission 5 = Most compatible with / provides best enhancement of VA mission	BPO 8 / Bedford – Complete Reuse Jamaica Plain – Partial Reuse	**4** – Elderly housing and an assisted living conform directly to the mission of the VA. This reuse option efficiently reuses the greatest amount of reclaimed campus land while providing a new development that serves a market need and generates material revenue.
	BPO 10 / Bedford – Complete Reuse West Roxbury – Complete Reuse	**2** – Elderly housing and an assisted living conform directly to the mission of the VA by efficiently re-using reclaimed campus land, serving a market need, and generating material revenue. Retail program may not be consistent with the mission of the VA although it provides revenue through the site's most viable use, however much of the campus is left unused.
	BPO 11 / Bedford – Complete Reuse Jamaica Plain – Complete Reuse	**2** – Elderly housing and an assisted living conform directly to the mission of the VA by efficiently re-using reclaimed campus land, serving a market need, and generating material revenue. Retail program may not be consistent with the mission of the VA although it provides revenue through the site's most viable use, however much of the campus is left unused.

Execution Risk 1 = Option presents barriers that cannot be resolved 2 = Option presents significant obstacles that may not be resolvable 3 = Option may present obstacles that are resolvable with some difficulty 4 = Option may have some obstacles, but they should be reasonably resolvable 5 = Option presents no significant obstacles or barriers to execution *For all scenarios, execution risk measures market risk and does not include operational risk associated with relocating hospital functions.*	BPO 8 / Bedford – Complete Reuse Jamaica Plain – Partial Reuse	**4 –** The complexity of the elderly housing development project carries several obstacles to successful implementation, however by working with an experienced local developer and the community, execution risk can be minimized.
	BPO 10 / Bedford – Complete Reuse West Roxbury – Complete Reuse	**3 –** Softness in the West Roxbury convenience retail market suggests that a developer might need to offer rent concessions in order to attract suitable tenants.
	BPO 11 / Bedford – Complete Reuse Jamaica Plain – Complete Reuse	**2 –** High vacancy rates in the convenience-oriented retail market in the Roxbury/Dorchester area indicate that there is substantial market risk associated with the proposed new retail development.

7.0 Financial Analysis

A financial analysis, based on the requirements of the VA's cost effectiveness analysis (CEA) tool, was performed for each of the Stage II BPOs for the Boston study site. The chapter first describes key assumptions of the financial analysis for Boston, followed by a high level comparison of the BPOs. The remainder of the chapter describes the detailed financial outputs associated with each BPO and the primary factors influencing those outputs.

Key Assumptions for Boston

The following key assumptions were considered to support performance of the financial analysis for each Boston site BPO. A comprehensive description of financial assumptions can be found in a separate document entitled Stage II Assumptions, Inputs and Outputs.

- For each BPO, VA estimated annual workload is the same across the planning horizon of 2003 to 2033.
- A nominal amount of workload is assumed to be contracted out for the short term due to capacity constraint issues based on the assumptions in the workload methodology. This short term contracting occurs until 2023. The renovated and/or new facilities are sized to meet the forecasted workload in 2023. Inpatient capacity is assumed at 85% of available beds for acute care and 95% of available beds for nursing home and domiciliary care. Outpatient capacity is assumed to be 110% of FY 2003 stops for each service or a maximum of 20,000 additional stops which is assumed to be absorbed on a short term basis through operating efficiencies.
- Changes in the way healthcare is provided each year, e.g., provided in-house in the same, renovated or newly constructed facilities; timing of occupying renovated or new facilities; modified square feet both in building or land; and other factors result in impacts to the operating costs.
- Healthcare workload is performed at different locations once renovation or new construction is complete. The options, as described, dictate these movements. The capital planning assumptions identify the year in which these changes occur. Operating costs may vary once these moves occur. Generally, the workload takes on the cost characteristics of the new and/or renovated facility to which the workload is transferred.
- Capital plan assumptions, e.g., renovated or new construction, modified square feet requirements, timing of occupying new space, etc. affect the capital investment costs.
- Reuse assumptions regarding the type of reuse, availability of land and buildings, etc. affect the financial assumptions pertaining to reuse considerations.
- Capital investment costs (for options other than the baseline) include reuse revenues and savings.

BPO Comparison

The Boston financial analysis considers the four VAMCs and the CBOCs which constitute the Boston study site. The workload currently performed at the VAMCs is summarized as follows:

- The Brockton VAMC provides inpatient nursing home, psychiatric and substance abuse, and domiciliary services, along with a full range of ambulatory and outpatient mental health services. In addition, inpatient chronic spinal cord injury services are provided at Brockton.
- Similar to the Brockton VAMC, the Bedford VAMC provides inpatient nursing home, psychiatric and substance abuse, and domiciliary services, along with a full range of ambulatory and outpatient mental health services.
- The West Roxbury campus provides a full range of acute inpatient and outpatient services and a limited amount of ambulatory behavioral health services.
- The Jamaica Plain VAMC provides a full range of acute outpatient services, which includes work therapy services.

Depending on the BPO, workload remains at the VAMC or may move to another VAMC or CBOC. Until the facilities are activated, the workload remains at the facility that currently provides it or it may be contracted out for the short term. Contracting outside of VA occurs when a short term capacity issue exists or to provide transition space during renovation or construction. A summary of the BPOs follows:

- BPO 1 updates the four existing facilities to modern, safe and secure standards, where conditions allow.
- BPO 8 is the option where the Bedford campus will be consolidated to the Brockton campuswhile a new CBOC will be established in the Bedford area. The Jamaica Plain and West Roxbury campuses will be re-sized for the projected workloads.
- BPO 10 is the option where the Bedford campus will be consolidated to the Brockton campus while a new CBOC will be established in the Bedford area. The West Roxbury campus will be consolidated into the Jamaica Plain campus.
- BPO 11 is the option where the Bedford campus will be consolidated to the Brockton campus while a new CBOC will be established in the Bedford area. The Jamaica Plain campus will be consolidated into the West Roxbury campus. A new CBOC will also be established in downtown Boston.
- The following CBOCs were all considered in the financial model; Causeway Street, Lowell-BHS, Lynn North Shore, Haverhill, Lowell-Bedford, Winchendon, Gloucester, Fitchburg, Framingham, Quincy, Dorchester, and Worcester. Causeway Street and Lowell-BHS are the largest CBOCs and are the only CBOCs with workload changing in options 8, 10, and 11. Workload is transferred from Causeway Street to other facilities in BPOs 8, 10 and 11.

The table below presents a comparison of the key financial outputs for each BPO. Three primary components are considered in this analysis: recurring operating costs, non-recurring capital costs and non-recurring considerations (costs/revenues). Recurring operating costs include direct

variable, indirect fixed and direct fixed costs. All of the costs are discussed in terms of net present dollars. This term refers to the process of discounting the dollars from each year over the study period (2003 to 2033) to year 2003 dollars. The intent is to allow for the costs to be compared across BPOs independent of the year when the expense or revenue occurs.

Table 110: BPO Comparison ($ in millions) 2003 Net Present Dollars

BPO Comparison				
	BPO 1	**BPO 8**	**BPO 10**	**BPO 11**
Recurring Operating Cost	$10,956	$10,700	$10,188	$10,257
Non-recurring Capital Investment Offset by Re-use	$1,503	$1,384	$1,384	$1,272
Non-recurring Periodic Maintenance	$96	$49	$44	$42
Total Net Present Cost	**$12,555**	**$12,134**	**$11,616**	**$11,571**
Operating Cost Efficiencies Compared to BPO 1	N/A	$255	$768	$699
Total NPC Savings As Compared to BPO 1	N/A	$421	$938	$984

The Net Present Cost (NPC) is the sum of the annual discounted expense for each BPO over the study period. Discounting allows the NPC for each BPO to be compared to the other BPOs for the study site. The NPC is the sum of the operating costs, the capital costs (both capital investments and periodic maintenance/replacement costs), and the considerations in discounted dollars. A 5.2% Treasury nominal discount rate is assumed to derive the NPCs in FY2003 dollars. BPO 1 (Baseline) does not include reuse.

In terms of the Net Present Cost (NPC), BPO 1, which maintains all four campuses, is the most expensive option, with a NPC of $12.6 billion over the 2003 to 2033 planning horizon. BPOs 10 and 11, which consolidate the four campuses to two campuses, are the least expensive options, with a NPC of approximately $11.6 billion. BPO 8, which maintains three of the four campuses, has an NPC between BPO 1 and BPOs 10 and 11. The underlying cost drivers affecting the NPC of each BPO are described later in this chapter.

The recurring operating costs, which include salaries incurred with patient care, etc., represent the majority of the NPC for each of the BPOs - between 87 and 89 percent. The baseline option (BPO 1) has the highest operating cost, at about $11.0 billion over the study period. BPO 10 has the lowest operating cost, at about $10.2 billion, which is about $0.8 billion lower than the baseline. BPO 11 is about $0.1 billion more than BPO 10 at $10.3 billion. BPO 8 is about $0.3 billion less than BPO 1 at $10.7 billion. These operating costs vary across the BPOs primarily as a result of gross building square feet, retained land and the cost characteristics of the facilities providing the care.

Non-recurring capital costs include non-recurring investment costs, such as major renovation and/or new construction and non-recurring periodic maintenance /replacement costs. The timing of capital costs is based on the year in which obligations occur and therefore may differ from the capital plan which is based on schedule and construction duration. Non-recurring considerations (reuse, in-kind) include costs and/or revenues associated with the reuse of part of the facilities.

With respect to the non-recurring capital investments, BPO 1 has the highest cost at $1.5 billion. Reuse is not considered in the baseline. BPO 11 has the lowest capital investment cost at $1.3 billion. BPOs 8 and 10 are about equal, at $1.4 billion. The capital investment costs for BPOs 8, 10 and 11 include reuse and other considerations which have a minimal impact.. Non-recurring periodic maintenance / replacement costs are highest for BPO 1 at $96 million, while these costs range from $42 to $49 million for the other three BPOs.

The table below presents a breakdown of the operating costs for each BPO categorized by direct variable, indirect fixed and direct fixed costs. Changes in costs related to consolidations, etc., are not realized until the year in which the facility is activated. Therefore, changes in costs, e.g., consolidation of workload to the Brockton facility from the Bedford facility, generally occur between 2014 and 2018.

Table 111: Operating Cost Breakdown by BPO ($ in millions)

	BPO 1		BPO 8		BPO 10		BPO 11	
	$000	%	$000	%	$000	%	$000	%
Direct Variable	$6,321	58%	$6,355	59%	$5,938	58%	$6,085	59%
Indirect Fixed	$4,086	37%	$3,802	36%	$3,615	35%	$3,679	36%
Direct Fixed	$548	5%	$544	5%	$634	6%	$493	5%
Total Operating Costs	$10,956	100%	$10,700	100%	$10,188	100%	$10,257	100%

Direct variable costs, (i.e., costs of direct patient care that vary directly and proportionately with fluctuations in workload such as salaries of providers and nurses) account for a large portion (58% to 59%) of total operating costs. These costs fluctuate proportionately as the forecasted workload demand changes. When services move to different sites, weighted averages were used

to adjust the direct variable costs in an effort to consider varying levels of acuity. As agreed in the assumptions, direct variable costs are not affected by efficiencies per study methodology. The impact of generally accepted healthcare industry efficiencies are discussed in the sensitivity analysis section of the report

Indirect fixed costs also account for a large portion of total operating costs, about 35% to 37%. These represent costs not directly related to patient care such as utilities and maintenance and administration and overhead. Indirect fixed costs are adjusted during the study period based on changes in building square footage across all of the campuses and changes in the overall size (acreage) of the campuses.

Direct fixed costs represent a smaller proportion (about 5% to 6%) of the total operating costs. These are costs of direct patient care that do not vary in direct proportion to the volume of patient activity such as depreciation of medical equipment and salaries of nursing administrative personnel. Although direct fixed costs do not fluctuate in direct proportion, this does not mean that they do not change. Adjustments to direct fixed costs occur during the study period as workload changes and sites change (not in direct proportion).

BPO 1

BPO 1 is the option under which there would not be significant changes in either the location or type of services provided in the study site, other than those described in the Secretary's Decision. BPO 1 updates the existing facilities to modern, safe and secure standards, where conditions allow. The Bedford, Jamaica Plain, and West Roxbury campuses will be renovated in existing buildings for projected workloads. The Brockton VAMC will construct a new inpatient building to house the chronic spinal cord injury program while renovating existing structures. The baseline does not allow for reuse. However, due to the configuration of BPO 1, portions of the Bedford and Jamaica Plain campuses have been designated for potential reuse at a later date.

Inputs and Assumptions

The workload for BPO 1 is performed at the Bedford, Jamaica Plain, Brockton and West Roxbury VAMCs, along with several CBOCs. The newly renovated VAMCs are sized to meet the workload demand projection for 2023. Workload is not transferred or consolidated among the VAMCs for BPO 1.

Outputs

Net Present Cost (NPC)

The table below summarizes NPC, total operating costs, non-recurring capital investment costs (baseline option does not include reuse considerations), and non-recurring periodic maintenance costs for BPO 1.

Table 112: BPO 1 Financial Summary Outputs ($ in millions)

Costs	BPO 1	
Total Recurring Operating Costs	$10,956	87%
Non-recurring Capital Investment	$1,503	12%
Non-Recurring Periodic Maintenance	$96	1%
Total Net Present Costs	**$12,555**	**100%**

The Net Present Cost (NPC) is the sum of the annual discounted expense for each BPO over the study period. Discounting allows the NPC for each BPO to be compared to the other BPOs for the study site. The NPC is the sum of the operating costs, the capital costs (both capital investments and periodic maintenance/replacement costs), and the considerations in discounted dollars. A 5.2% Treasury nominal discount rate is assumed to derive the NPCs in FY2003 dollars.

The NPC for BPO 1 is estimated at $12.6 billion for the 30 year period. Operating costs ($11.0 billion, 87% of NPC) and capital investment ($1.5 billion, 12% of NPC) are the two primary factors driving the NPC for BPO 1.

Operating costs comprise 87% of NPC. Adjustments to the operating costs associated with providing healthcare (e.g., nursing salaries, utilities, etc.) over the study period have a much greater impact on NPC than any changes to capital expenditures. BPO 1 does not involve any significant changes in either the location or type of services provided in the study site. Operating efficiencies from consolidation of services that are present in the BPOs 8, 10 and 11 are not realized in BPO 1. This results in the higher operating costs as compared to the other BPOs.

BPO 1's capital investment costs of $1.5 billion are the highest among the four BPOs. The Bedford, Brockton, Jamaica Plain and West Roxbury VAMCs all require extensive renovations in BPO 1. BPO 1 also requires the use of existing buildings for services for which they were not designed. As a result, BPO 1 requires more space to be renovated than the other BPOs.

The baseline assumption does not consider reuse of land or buildings. However, due to the configuration of the proposed BPO, portions of the Bedford and Jamaica Plain campuses could be designated for potential reuse as an Alternate BPO 1 (Baseline).

Total Operating Costs

BPO 1's total operating costs of $11.0 billion are the largest cost component within the overall NPC, accounting for approximately 87% of the NPC. As a percent of total operating costs for the study period, direct variable, indirect fixed, and direct fixed costs account for 58% ($6.0 billion), 37% ($4.0 billion), and 5% ($1.0 billion), respectively. In BPO 1, the facilities represent the following percentages and dollars of the operating costs:

- Bedford VAMC represents 19% ($2.1 billion)
- Jamaica Plain VAMC represents 22% ($2.4 billion)
- West Roxbury VAMC represents 25% ($2.7 billion)
- Brockton VAMC represents 19% ($2.0 billion)
- CBOCs represent 9% ($1.0 billion)
- Contracted and short-term contracted care represents 7% ($0.8 billion).

The direct variable, direct fixed and indirect fixed costs vary among the four VAMCs and the CBOCs. As previously stated, BPO 1 does not involve any significant changes in either the location or type of services provided in the study site. Direct variable costs fluctuate proportionately as the forecasted workload demand changes. Indirect fixed costs are adjusted in BPO 1 as the building square footage and acreage changes among the four VAMCs. Direct fixed costs are adjusted annually as workload changes. The campus and buildings are changed the least in BPO 1, therefore, the cost savings due to operating efficiencies (reflected in indirect fixed costs) of right-sized and consolidated campuses that are realized in BPOs 8, 10 and 11 are not reflected in BPO 1.

As a percentage of operating costs by year over the study period, direct variable costs range from 57% to 58% of total operating costs per year. The percentage changes due to changes in indirect fixed costs and changes due to short-term contracting. As indirect fixed costs change and direct variable costs remain constant, direct variable costs change as a percentage of total operating costs. Short-term contracting costs due to capacity constraints over the study period are reflected in direct variable costs. The need for short-term contracting at the Bedford, Brockton, West Roxbury and Jamaica Plain campuses is anticipated to be minimal over the study period in BPO 1.

Indirect fixed costs, i.e., costs not directly related to patient care, account for about 36% to 38% of total operating costs each year over the study period. Upon completion of the renovation in 2018, indirect fixed costs are adjusted to consider the change in costs that result from the change in the Bedford, Brockton, West Roxbury and Jamaica Plain campus design. Indirect fixed cost adjustments are based on the overall change in utilization, change in building square footage, and campus acreage at the four VAMCs. Changes to building square footage have the greatest impact on the adjustments to indirect fixed costs. Square footage changes at the Bedford VAMC from 1.2 to 1.1 million square feet, at the West Roxbury VAMC from 527 to 533 thousand square feet, and at the Jamaica Plain VAMC from 954 to 873 thousand square feet. Indirect fixed cost adjustments are less than 5% for each one of the campuses.

Direct fixed costs are costs of direct patient care that do not vary in direct proportion to the volume of patient activity. Direct fixed cost adjustments are incorporated each year based on changes in utilization. These costs account for about 5% of total operating costs for the study year period.

Capital Costs

The total capital costs of $1.5 billion account for approximately 12% of the NPC. The non-recurring capital investment costs for BPO 1 are associated with updates to the existing facilities to modern, safe and secure standards, where conditions allow. The Bedford, Jamaica Plain, and West Roxbury campuses will be renovated in existing buildings for projected workloads. The Brockton VAMC will construct a new inpatient building to house the chronic spinal cord injury program while renovating existing structures for projected workloads. Reuse revenues and savings are not considered under the baseline to offset the capital investment costs.

The non-recurring capital investment costs are incurred between 2009 and 2017. Capital investment costs are incurred at the beginning of the construction phases. Activation costs (start-up equipment, furnishings, moving, etc.) equal 20% of new construction and renovation costs and are assumed to occur in the last year of construction. The renovation at the four campuses and the use of existing buildings for services, for which they were not designed, results in more space being required and subsequently more space being renovated/constructed than in BPOs 8, 10 and 11.

There are periodic maintenance/replacement costs of $96 million beginning in FY2026 through FY2032 at Bedford, Brockton, Jamaica Plain, and West Roxbury campuses. These costs do not include maintenance/replacement costs for buildings that are not planned for use. Periodic maintenance and replacement costs are driven by the maintenance/replacement schedule (15, 25, 30 years) of major items and/or projects.

BPO 8

BPO 8 is the option where the Bedford campus will be consolidated with the Brockton VAMC and a new CBOC will be established in the Bedford area. The Jamaica Plain and West Roxbury campuses will be re-sized for the projected workloads. Inpatient and residential clinical care currently located at the Bedford VAMC will be consolidated onto the Brockton campus. Two new multi-story buildings and a new parking structure will be constructed at the Brockton VAMC along with newly renovated buildings. Ambulatory surgical services and related specialties will be relocated from the Jamaica Plain VAMC to the West Roxbury VAMC. The West Roxbury VAMC will be right-sized by renovating existing buildings and constructing a multi-story addition and a new parking structure. The Jamaica Plain VAMC will be right-sized by incorporating campus functions into existing buildings and constructing additional parking. Services provided at the Causeway CBOC will be provided at Jamaica Plain.

Inputs and Assumptions

BPO 8 involves consolidating the four VAMCs into three. The consolidations and shifts in workload result in lower operating and capital costs than BPO 1. The operating costs at the campuses receiving the transfer of workload are adjusted to consider the workload being transferred. Adjustments are made based on the changes in workload, building square footage, and campus acreage.

Outputs

Net Present Cost (NPC)

BPO 8's NPC of $12.1 billion is about $421 million less than BPO 1's NPC of $12.6 billion, or a 4% savings. All of the cost categories for BPO 8 are less than the cost categories for BPO 1. Operating costs for BPO 8 are $255 million less than the operating costs of BPO 1. The lower operating costs of BPO 8 as compared to BPO 1 are due to operating efficiencies that are reflected in lower indirect fixed costs (maintenance, utilities, etc.) due to the consolidated

Brockton campus, the right-sized campuses at West Roxbury and Jamaica Plain and the relocation of Jamaica Plain to West Roxbury. BPO 8's capital investment expense of $1.4 billion, including reuse, is lower than BPO 1's due to three right-sized VAMCs requiring construction and renovation compared to all four VAMCs receiving renovations in BPO 1. The new construction in BPO 8, along with the three VAMCs instead of four results in BPO 8's periodic maintenance costs being nearly half as much as the periodic maintenance costs in BPO 1. The entire Bedford campus and a portion of the Jamaica Plain campus will be made available for reuse.

The table below summarizes NPC, total operating costs, non-recurring capital investment costs including reuse considerations, and non-recurring periodic maintenance costs for BPO 8.

Table 113: BPO 8 Financial Summary Outputs ($ in millions)

Costs	BPO 8	
Total Recurring Operating Costs	$10,700	88%
Non-recurring Capital Investment Offset by Re-use	$1,384	11%
Non-Recurring Periodic Maintenance	$49	1%
Total Net Present Costs	**$12,134**	**100%**
Operating Cost Efficiencies Compared to BPO 1	$255	

The Net Present Cost (NPC) is the sum of the annual discounted expense for each BPO over the study period. Discounting allows the NPC for each BPO to be compared to the other BPOs for the study site. The NPC is the sum of the operating costs, the capital costs (both capital investments and periodic maintenance/replacement costs), and the considerations in discounted dollars. A 5.2% Treasury nominal discount rate is assumed to derive the NPCs in FY2003 dollars.

The NPC for BPO 8 is estimated at $12.1 billion for the study period. The primary factors driving the lower NPC are lower operating costs, lower capital investment costs which are offset by reuse revenue, and lower periodic maintenance. Approximately $10.7 billion or 88% of the NPC are operating costs. Operating costs for BPO 8 are $255 million less than the operating costs of BPO 1. As stated, the lower operating costs compared to BPO 1 are due to operating efficiencies.

Beginning in 2010, capital investment costs of $1.4 billion (offset by reuse revenues) are incurred. BPO 8's capital investment expense is approximately $119 million less than BPO 1's capital investment costs of $1.5 billion. Starting in 2020 through 2033, a total of $49 million will be incurred for non-recurring periodic maintenance/replacement costs. The maintenance of the facilities includes the maintenance of buildings that are anticipated to be reused. Capital investment and periodic maintenance costs combined represent about 8% of the NPC.

Total Operating Costs

BPO 8's total operating costs of $10.7 billion is the largest cost component within the overall NPC, accounting for about 88% of the NPC. As a percent of total operating costs for the study period, direct variable, indirect fixed, and direct fixed costs account for 59% ($6.3 billion), 36% ($3.9 billion), and 5% ($0.5 billion), respectively. In BPO 8, the facilities represent the following percents and dollars of the operating costs over the 2003 to 2033 period:

- Bedford VAMC represents 9% ($1.0 billion)
- Jamaica Plain VAMC represents 21% ($2.3 billion)
- West Roxbury VAMC represents 29% ($3.2 billion)
- Brockton VAMC represents 23% ($2.5 billion)
- CBOCs account for 10% ($1.0 billion)
- Contracted and short-term contracted care accounts for 7% ($0.7 billion)

Direct variable costs fluctuate proportionately as the forecasted workload demand changes. As a percentage of total operating costs by year over the study period, direct variable costs range from 56% to 61% of total operating costs per year. The percentage is impacted primarily by a reduction in indirect fixed costs, and changes due to short-term contracting. As indirect fixed costs are reduced and direct variable costs remain constant, direct variable costs become a greater portion of total operating costs. Short-term contracting costs due to capacity constraints over the study period are reflected in direct variable costs. Short-term contracting is anticipated to be needed until the completion of construction. It generally occurs during peak workload periods. This need is minimal over the study period. As services move to different campuses, weighted averages were used to adjust the direct variable costs for acuity. The majority of the shifts in workload occur in 2018.

Indirect fixed costs, i.e., costs not directly related to patient care, account for about 34 to 37% of total operating costs each year over the study period. Upon completion of the construction and renovation, indirect fixed costs are adjusted to consider the change in costs that result from the consolidated campus design. This is the primary driver of the operating costs savings. Indirect fixed costs are adjusted based on overall change (2003-2033) in workload, changes to building square footage and changes in the overall campus size. Indirect fixed cost adjustments are based on the combined change in workload, building square feet, and campus acreage at the four VAMCs. Changes to building square feet have the greatest impact on the adjustments to indirect fixed costs for the Boston study. Some of the ambulatory workload from the Bedford VAMC is transferred to the Lowell-BHS and new Bedford CBOCs.

The Bedford VAMC campus is closed in 2018, at which time the operating costs follow the workload to other facilities. The square footage at the Brockton VAMC changes from 1.1 to 1.2 million square feet and the Bedford VAMC's workload is absorbed by the Brockton VAMC. The changes at the Brockton VAMC result in the indirect fixed costs increasing 13% beginning in 2018. West Roxbury will be right-sized and will absorb ambulatory surgical services and related specialties from the Jamaica Plain VAMC. The West Roxbury building square feet changes from 527 to 828 thousand square feet. This results in indirect fixed costs increasing 27% beginning in 2018. The Jamaica Plain campus is reduced from 954 to 865 thousand square feet. The Jamaica Plain right-sizing results in a slight reduction in indirect fixed costs starting in 2018 (two percent).

Direct fixed cost adjustments are incorporated each year based on changes in patient workload. The West Roxbury VAMC and the Brockton VAMC incur the largest increases in direct fixed costs due to the consolidations at those campuses. The Bedford VAMC direct fixed costs no

longer occur as of 2018 and the Jamaica Plain VAMC realizes a reduction in fixed costs. These costs account for about 5% of total operating costs for the study period.

Capital Costs

The non-recurring capital investment costs are estimated to be $1.4 billion for construction and $49 million for periodic maintenance/ replacement. These costs represent about 11% of the NPC. These costs are offset by reuse revenues. Reuse revenues do not have a material impact on the NPC of BPO 8.

The capital investment costs are incurred at the beginning of each construction phase. Capital investment costs begin in 2010. Activation costs (start-up equipment, furnishings, moving, etc.) are assumed at 20% of new construction and renovation costs and occur in the last year of construction. The periodic maintenance/replacement costs of $49 million are incurred beginning in FY2020 through FY2033. The periodic maintenance costs are significantly lower than BPO 1 due to the amount of new construction rather than renovation and the smaller square feet of space that needs to be maintained. Periodic maintenance and replacement costs are driven by the maintenance/replacement schedule (15, 25, 30 years) of major items and/or projects.

BPO 10

The Bedford campus will be consolidated at the Brockton VAMC while a new CBOC will be established in the Bedford area. The West Roxbury campus will be consolidated into Jamaica Plain VAMC. Services provided at the Causeway clinic will be provided at Jamaica Plain.

Inputs and Assumptions

The newly constructed and renovated facilities are planned to be completed in 2019 and sized to meet the workload demand projection for 2023. Two new multi-story buildings and a new parking structure will be constructed at the Brockton VAMC while retaining several newly renovated buildings.

The inpatient services performed at the West Roxbury VAMC will be consolidated at the Jamaica Plain VAMC in this BPO. The consolidation will be accomplished through renovation and new construction on the Jamaica Plain campus. Primary care and some specialized ambulatory services will be relocated to the local CBOCs and remaining VAMCs. Special needs of educational and research programs along with additional parking, will be incorporated.

Outputs

Net Present Cost "NPC"

The table below summarizes NPC, total operating costs, non-recurring capital investment costs including reuse considerations, and non-recurring periodic maintenance costs for BPO 10.

Table 114: BPO 10 Financial Summary Outputs ($ in millions)

Costs	BPO 10	
Total Recurring Operating Costs	$10,188	88%
Non-Recurring Capital Investment Offset by Re-use	$1,384	12%
Non-Recurring Periodic Maintenance	$44	0%
Total Net Present Costs	**$11,616**	**100%**
Operating Cost Efficiencies Compared to BPO 1	$768	

The Net Present Cost (NPC) is the sum of the annual discounted expense for each BPO over the study period. Discounting allows the NPC for each BPO to be compared to the other BPOs for the study site. The NPC is the sum of the operating costs, the capital costs (both capital investments and periodic maintenance/replacement costs), and the considerations in discounted dollars. A 5.2% Treasury nominal discount rate is assumed to derive the NPCs in FY2003 dollars.

The NPC for BPO 10 is $11.6 billion for the study period. BPO 10's NPC is about $0.9 billion less than BPO 1. All of the cost categories for BPO 10 are less than the cost categories for BPO 1. There are two primary factors driving the lower NPC of BPO 10, lower operating costs ($10.2 billion, 88% of NPC) and lower capital investment costs ($1.4 billion, 12 % of NPC) offset by reuse revenues.

BPO 10 involves the Bedford campus being consolidated to Brockton VAMC with a new CBOC established in the Bedford area. The West Roxbury campus will be consolidated into the Jamaica Plain VAMC. The redesigned campus results in operating cost efficiencies. Operating costs for BPO 10 are $10.2, and $0.8 billion less than the operating costs of BPO 1. The lower operating costs of BPO 10 as compared to BPO 1 are due to operating efficiencies that are reflected in lower indirect fixed costs (maintenance, utilities, etc.) due to the consolidation at the right-sized Brockton and Jamaica Plain campuses. Causeway Street and Lowell-BHS CBOCs both experience changes in workload. The Causeway Street CBOC is closed in 2014, with the Jamaica Plain VAMC receiving its workload. Lowell-BHS and the new Bedford area CBOC receive portions of the ambulatory workload from the closed Bedford VAMC.

The total capital costs, including reuse and periodic maintenance, of $1.3 billion account for about 12% of the NPC. BPO 10 combines renovations and new construction to meet campus demands at the Brockton and Jamaica Plain VAMCs. The replacement/maintenance costs of $44 million are lower than BPO 1 by about $50 million.

Total Operating Costs

BPO 10's total operating costs of $10.2 billion are the largest cost component within the overall NPC, accounting for about 88% of the NPC. As a percentage of total operating costs for the study year period, direct variable, indirect fixed, and direct fixed costs account for 59% ($6.0 billion), 35% ($3.6 billion), and 6% ($0.6 million), respectively. In BPO 10, the facilities represent the following percentages and dollars of the operating costs:

- Bedford VAMC represents 6% ($0.7 billion)
- Jamaica Plain VAMC represents 41% ($4.1 billion)
- West Roxbury VAMC represents 14% ($1.4 billion)
- Brockton VAMC represents 25% ($2.5 billion)
- CBOCs account for 9% ($1.0 billion)
- Contracted and short-term contracted care accounts for 4% ($0.5 billion)

Direct variable costs fluctuate proportionately as the forecasted workload demand changes. As a percentage of total operating costs by year over the study period, direct variable costs range from 52% to 61% of total operating costs per year. The percentage is impacted primarily by a reduction in indirect fixed costs and changes due to short-term contracting. As indirect fixed costs are reduced and direct variable costs remain constant, direct variable costs become a greater portion of total operating costs. Short-term contracting costs due to capacity constraints over the study period are reflected in direct variable costs. Short-term contracting is required to address workload requirements until the completion of construction. Contracting is anticipated to occur during peak workload periods. This need is minimal over the study period. As services move to different campuses, weighted averages were used to adjust the direct variable costs for acuity. The majority of the shifts in workload occur in 2018 when construction is complete (shift at Causeway Street Clinic occurs in 2014).

Indirect fixed costs, i.e., costs not directly related to patient care, account for about 33% to 37% of total operating costs each year over the study period. Upon completion of the construction, indirect fixed costs are adjusted to consider the change in costs that result from the smaller campus design. This is the primary driver of the operating costs savings. Indirect fixed costs are adjusted based on overall change (2003-2033) in workload, changes to building square footage and changes in the overall campus size. Indirect fixed cost adjustments are based on the overall change in utilization, change in building square footage, and campus acreage. Changes to building square footage have the greatest impact on the adjustments to indirect fixed costs.

The Bedford campus is closed in 2018. The square footage in Brockton changes from 1.1 to 1.2 million and portions of the Bedford workload is moved to the Brockton VAMC. The workload changes at the Brockton VAMC result in the indirect fixed costs at Brockton increasing 13 percent as of 2018. The Jamaica Plain VAMC will be right-sized and will absorb ambulatory surgical services and related specialties from the West Roxbury VAMC. The Jamaica Plain building square footage increases from 954 thousand to 1.1 million square feet. The West Roxbury campus is closed in 2018.

Direct fixed costs account for about 6% of total operating costs for the study period for BPO 10. Adjustments to these costs are made each year based on changes in workload. The Jamaica Plain and Brockton VAMCs incur the significant changes in direct fixed costs due to the consolidations at those campuses. The Bedford and West Roxbury VAMC's direct fixed costs are zeroed out in 2018.

Capital Costs

The non-recurring capital investment costs are estimated to be $1.4 billion for construction and $44 million for periodic maintenance/ replacement. These costs represent about 12% of the NPC. These costs are offset by reuse revenues. Reuse revenues do not have a material impact on the NPC of BPO 10.

The capital investment costs are incurred at the beginning of each construction phase. Capital investment costs begin in 2010. Activation costs (start-up equipment, furnishings, moving, etc.) equal 20% of new construction and renovation costs and are assumed in the last year of construction. The periodic maintenance/replacement costs of $44 million are incurred in FY2029. The periodic maintenance costs are significantly lower than BPO 1 due to the amount of new construction and the reduced number of buildings. Periodic maintenance and replacement costs are driven by the maintenance/ replacement schedule (15, 25, 30 years) of major items and/or projects.

BPO 11

The Bedford campus will be consolidated at the Brockton VAMC while a new CBOC will be established in the Bedford area. The Jamaica Plain campus will be consolidated at the West Roxbury VAMC. A new urban CBOC will be located in downtown Boston.

Inputs and Assumptions

The newly constructed and renovated facilities are planned to be completed in 2018 and sized to meet the workload demand projection for 2023. Two new multi-story buildings and a new parking structure will be constructed at the Brockton VAMC and building renovation will also occur.

The services performed at the Jamaica Plain VAMC will be consolidated at the West Roxbury VAMC and Boston area CBOCs. The consolidation will be accomplished through renovation and new construction on the West Roxbury campus. The Causeway Street CBOC is closed in 2019, with the West Roxbury VAMC and the new Bedford CBOC receiving the workload. The Lowell-BHS and new Bedford area CBOC receive portions of the ambulatory workload from the closed Bedford campus. Special needs of educational and research programs and additional parking will be incorporated.

Outputs

Net Present Cost "NPC"

The table below summarizes NPC, total operating costs, non-recurring capital investment costs including reuse considerations, and non-recurring periodic maintenance costs for BPO 11.

Table 115: BPO 11 Financial Summary Outputs ($ in millions)

Costs	BPO 11	
Total Recurring Operating Costs	$10,257	89%
Non-Recurring Capital Investment Offset by Re-use	$1,272	11%
Non-Recurring Periodic Maintenance	$42	0%
Total Net Present Costs	**$11,571**	**100%**
Operating Cost Efficiencies Compared to BPO 1	$699	

The Net Present Cost (NPC) is the sum of the annual discounted expense for each BPO over the study period. Discounting allows the NPC for each BPO to be compared to the other BPOs for the study site. The NPC is the sum of the operating costs, the capital costs (both capital investments and periodic maintenance/ replacement costs), and the considerations in discounted dollars. A 5.2% Treasury nominal discount rate is assumed to derive the NPCs in FY2003 dollars.

The NPC for BPO 11 is $11.6 billion for the study period. BPO 11's NPC is about $1.0 billion less than BPO 1. All of the cost categories for BPO 11 are less than the cost categories for BPO 1. There are two primary factors driving the lower NPC of BPO 11, lower operating costs ($0.7 billion) and lower capital investment costs ($0.2 billion). The lower operating costs of BPO 11

as compared to BPO 1 are due to operating efficiencies that are reflected in lower indirect fixed costs (maintenance, utilities, etc.) due to consolidations of the Bedford and Brockton campuses and consolidations of the Jamaica Plain and West Roxbury campuses. BPO 11's capital investment expense of $1.3 billion, including reuse, is lower than BPO 1's due to the amount of new construction and renovation required.

BPO 11 involves the Bedford campus being consolidated to the Brockton VAMC with a new CBOC established in the Bedford area. The Jamaica Plain campus will be consolidated with the West Roxbury VAMC. The redesigned campuses result in operating cost efficiencies that are reflected in the NPC. Operating costs for BPO 10 are $0.7 billion less than the operating costs of BPO 1. These lower costs are due to operating efficiencies realized in lower indirect fixed costs (maintenance, utilities, etc.)

Capital investment costs offset by reuse and periodic maintenance, of $1.3 billion and $42 million respectively, account for about 11% of the NPC. BPO 11 combines renovations and new construction to meet campus demands at the Brockton and West Roxbury VAMCs. The capital investment costs including reuse are approximately $231 million less than BPO 1's capital investment costs. The replacement/maintenance costs are lower than BPO 1 by about $54 million.

Total Operating Costs

BPO 11's total operating costs of $10.3 billion are the largest cost component, accounting for about 89% of the NPC. As a percentage of total operating costs for the study period, direct variable, indirect fixed, and direct fixed costs account for 59% ($6.1 billion), 36% ($3.7 billion), and 5% ($0.5 billion), respectively. In BPO 11, the facilities represent the following percentages and dollars of the operating costs for the years 2003 through 2033:

- Bedford represents 1% ($0.2 billion)
- Jamaica Plain represents 17% ($1.7 billion
- West Roxbury represents 39% ($4.1 billion)
- Brockton represents 24% ($2.5 billion)
- CBOCs represent 10% ($1.0 billion)
- Contracted and short-term contracted care represents 8% ($0.8 billion)

Direct variable costs fluctuate proportionately as the forecasted workload demand changes. As a percentage of total operating costs by year over the study period, direct variable costs range from 54% to 62% of total operating costs per year. The percentage is impacted primarily by a reduction in indirect fixed costs and changes in short-term contracting. As indirect fixed costs are reduced and direct variable costs remain constant, direct variable costs become a greater portion of total operating costs. Short-term contracting is anticipated to occur during peak workload periods and before the new facilities are activated.

Indirect fixed costs, i.e., costs not directly related to patient care, account for about 33% to 42% of total operating costs each year. Upon completion of the construction, indirect fixed costs are

adjusted to consider the change in costs that result from the smaller campus design. This is the primary driver of the operating costs savings. Indirect fixed costs are adjusted based on overall change (2003-2033) in workload, changes to building square footage and changes in the campus size. Indirect fixed cost adjustments are based on the overall change in workload, change in building square footage, and campus acreage. Changes to building square footage have the greatest impact on indirect fixed costs.

The Bedford campus is closed in 2018. The square footage at the Brockton VAMC changes from 1.1 to 1.2 million with the Bedford VAMC's workload absorbed by the Brockton VAMC. The workload changes at the Brockton VAMC result in the indirect fixed costs at the Brockton VAMC increasing 13 percent as of 2018. The West Roxbury VAMC will be right-sized and absorb ambulatory surgical services and related specialties from the Jamaica Plain VAMC. This results in indirect fixed costs increasing an additional 105% as of 2018. The building square footage at the West Roxbury VAMC increases from 527 thousand to 1.1 million square feet. The Jamaica Plain campus is closed in 2018.

Direct fixed costs account for about 5% of total operating costs for the study period. Adjustments to these costs are made each year based on changes in workload. The West Roxbury and Brockton VAMCs incur significant changes in direct fixed costs due to the consolidations at those campuses. As of 2018, the Bedford and Jamaica Plain VAMC no longer incur direct fixed costs in BPO 11.

Capital Costs

The non-recurring capital investment costs are estimated to be $1.3 billion for construction and $42 million for periodic maintenance/ replacement. These costs represent about 11% of the NPC. These costs are offset by reuse revenues. Reuse revenues do not have a material impact on the NPC of BPO 11.

The capital investment costs are incurred at the beginning of each construction phase. Capital investment costs begin in 2010. Activation costs (start-up equipment, furnishings, moving, etc.) equal 20% of new construction and renovation costs and are assumed in the last year of construction. The periodic maintenance/replacement costs of $42 million are incurred from FY2029 through 2031. The periodic maintenance costs are significantly lower than BPO 1 due to the amount of new construction and the reduced number of buildings. Periodic maintenance and replacement costs are driven by the maintenance/ replacement schedule (15, 25, 30 years) of major items and/or projects.

8.0 Ease of Implementation

The purpose of the Ease of Implementation assessment is to determine the likelihood and potential severity of various risks that could impede the successful and timely implementation of the BPO. Several of the capital planning and reuse criteria studied in their respective assessments also indicate specific factors that could impede successful implementation. These additional criteria discussed in this section consider the research and education programs as well as human resources and staffing environments that could be impacted by the moving of VAMC campuses in the Boston study site. The specific criteria to be studied include the following:

- Number of research programs impacted
- Percentage of annual research budget impacted
- Number of residency programs and residents impacted
- Number of faculty with dual appointments impacted
- Change in staff (measured in FTEEs)
- Number of staff required to change job site (measured in FTEEs)

This assessment also allows for the development of mitigation strategies that can be considered during implementation planning that will be discussed in the implementation plan. The data used for the Ease of Implementation assessment was retrieved through data requests, interviews and conference calls with the VA. The majority of the analytical data was gathered through database reports that were generated and submitted by the VA.

Current State

Research Programs

Biomedical research is part of the mission of the Boston study site and each of the four VAMC's currently house research programs. These research programs are some of the largest programs of any site in the system strengthened by collaboration efforts between the Boston study site and numerous area partners in conducting research. The research programs are comprised of clinical, basic science (wet lab), and animal related research across a number of disease areas. Research interests cross a variety of fields including mental illnesses, alcoholism, gastrointestinal disorders, cardiology and cardiovascular diseases, hematology, pulmonary medicine, urology, neurology, spinal cord injury, hemostasis, aphasia, language and memory disorders, post traumatic stress disorder (PTSD), and infectious diseases.

A concentration of major programs are at the Jamaica Plain campus, which also houses three national research programs including the Massachusetts Veterans Epidemiology Research and Information Center (MAVERIC), National Center for Post traumatic Stress Disorder (PTSD), and Center for Organization, Leadership and Management Research (COLMR). As of 2006, MAVERIC had over 30 ongoing projects in chronic disease epidemiology focused on mental health, aging, and pharmacoepidemiology. The National Center for PTSD focuses on PTSD research, education and training, pertaining specifically to Behavioral Sciences and Women's

Health Sciences. COLMR is a Center of Excellence of the VA Health Services Research and Development (HSR&D) Service that focuses on innovative management practices and quality of care, management practices and effective implementation of change, and the development and role of leadership in healthcare organizations.

There are 31 unique research programs located at 47 research program sites throughout the four VAMCs. These current programs and their respective locations were identified through data provided by the VA and supplemented by numerous interviews with individuals responsible for research at the Bedford and Boston Healthcare System (BHS) VAMCs. Changes to the configuration of VAMCs and hence the location of services could impact the research programs. Negative impacts associated with changes in location could include disruption to research projects due to relocation, lengthier travel times between clinical and research sites, dispersion of complementary services and departments, or increased distance to affiliates who may be collaborating on research projects The table below lists the major research programs conducted at the Boston study site and their respective VAMC locations.

Table 116: Assignment of Research Protocols for each of the Boston Study Site VAMCs[12]

Research Programs	Jamaica Plain	West Roxbury	Brockton	Bedford
Massachusetts Veterans Epidemiology Research and Information Center (MAVERIC)	X			
Normative Aging Study	X			X
Dental Longitudinal Study	X			
NIDA/VA Medication Development Center	X			
National Center for PTSD	X			
Rehabilitation Research and Development	X	X		X
Health Services Research and Development	X	X		X
Boston Environmental Hazards Center	X			
Women's Health Science Center	X		X	
Center for Innovative Visual Rehabilitation Research	X			
Memory Disorders Research Center	X			X
Aphasia Research Center	X			
Addictions Research	X		X	X
A Multi-disciplinary Study of Chronic Obstructive Pulmonary Disease and its Treatment (VA REAP)	X			
Tissue Engineering-Based Rehabilitation (VA REAP)	X			
Center for Organization, Leadership and Management Research (COLMR)	X			
Sleep Disorders Research		X	X	
Hematology/Oncology Research	X	X		
Neural Imaging Studies of Schizophrenia (VA REAP)			X	
Urology Research	X	X		
Spinal Cord Injury Research		X	X	
Endocrinology Research	X			
Surgical Risk Coordination/Surgical Research Program		X		
Gastroenterology Research	X	X		

[12] Data provided by VA

Research Programs	Jamaica Plain	West Roxbury	Brockton	Bedford
Management Decision and Research Center (MDRC)	X			
New England Geriatric Research, Education and Clinical Center - (GRECC) - Bedford Division	X			X
Cardiology Research	X	X		
Mental Illness Research Education and Clinical Center (MIRECC)				X
National VA Amytrophic Lateral Sclerosis (ALS) Consortium				X
Systems Biochemical Research				X
Center for Health Quality Outcomes and Economics Research (CHQOER)				X

Research Budget

In addition to the number of research programs impacted, the assessment also indicates the proportion of the research budget that would be impacted, based on FY05 research expenditures. The FY05 expenditures for active research protocols for each of the VAMCs were analyzed to determine the impact caused under each BPO. Jamaica Plain supports three research programs, two of which are national research program, with FY05 expenditures in excess of $500,000 and Bedford supports four research programs with significant level of expenditure, which are listed in the table below.

Table 117: Research Programs with Highest Research Expenditures in FY05[13]

VAMC	Research Program	FY05 Expenditures
Jamaica Plain	Center for Organization, Leadership and Management Research	$708,000
Jamaica Plain	Center for Innovative Visual Rehabilitation Research	$843,000
Jamaica Plain	Massachusetts Veterans Epidemiology Research and Information Center	$1,986,501
Bedford	Hypertension Control: Therapy and Adherence	$735,175
Bedford	Center for Health Quality Outcomes and Economic Research	$879,200
Bedford	Boston University Alzheimer's Disease Core Center	$924,089
Bedford	National VA Amyotrophic Lateral Sclerosis Research Consortium	$1,042,000

These three research programs at Jamaica Plain comprise 11% of the total Boston Healthcare System (BHS) research expenditures in FY05, and the four programs at Bedford account for 36% of the total Bedford research expenditures in FY05. The total FY05 expenditure amounts for each of the campuses are shown in the table below.

Table 118: FY05 Total Research Expenditures by VAMC Campus

Campus	Total Research Expenditures
Jamaica Plain	$23,429,834
West Roxbury	$4,092,007
Brockton	$5,008,742
BHS Subtotal	$32,530,583
Bedford	$10,050,714
Total	$42,581,297

[13] Data provided by VA through reports generated from the Research and Development Information System

Residency Programs and Residents Trained

In addition to the vast research portfolio, the Boston study site also has a strong academic mission characterized by residency programs across a number of specialties. The VAMCs depend on their residency training programs to attract and retain clinicians interested in training programs and the quality of care which is customary to teaching hospitals. The number of residents in the BHS VAMCs and Bedford VAMC were determined through data provided by the VA in conjunction with interviews with individuals responsible for education. The two primary affiliates for residency training programs are Harvard Medical School (HMS) and Boston Medical College (BMC). BHS supports 28 residency programs that train a total of 249 residents, while the Bedford VAMC supports six residency programs that train 15 residents on stipend[14]. The Bedford VAMC supports an additional residency program that trains 12 short-term, residents on rotation from the Lahey Clinic; however these residents are not on stipends as typical of the other residents. It should also be noted there is an allied health training program that trains approximately 100-125 allied health professionals at the Bedford VA. The table below indicates the residency programs and associated residency training positions for each for the four VAMCs.

Table 119: Number of Residency Programs and Residency Positions by VAMC Campus[15]

VAMC	# of Residency Programs[16]	# of Residents
Bedford	6	15
Brockton	28	30
Jamaica Plain		73
West Roxbury		146
Total		264

Faculty with Dual Appointments

The Boston VAMCs' on-going involvement and proximity to several of the neighboring medical schools has fostered medical faculty who hold multiple appointments. All four VAMCs house faculty with appointments at medical schools. The total faculty with multiple appointments are higher for Jamaica Plain and West Roxbury which may be due to their proximity to the schools in downtown Boston relative to other VAMCs. The majority of faculty have dual appointments with HMS and/or BMC; however there are a few faculty members who hold appointments at other institutions, including, but not limited to, Tufts University School of Medicine and University of Massachusetts. The faculty with multiple appointments for Bedford VAMC and each of the BHS VAMCs were analyzed from documentation provided by the VA for FY05 and FY06, respectively. The table below indicates the number of faculty with an appointment at a VAMC as well as at least one other appointment at an institution.

[14] The Bedford VA amount reflects the in stipend residents only.

[15] Data provided by VA

[16] The number of residency programs for the three BHS VAMCs are provided in total, as was communicated in the documentation received by VA for analysis.

Table 120: Number of Faculty with Dual(+) Appointments[17]

VAMC	Faculty with Dual Appointments	Faculty with Three or More Appointments	Total Faculty with Dual(+) Appointments
Jamaica Plain	120	3	123
West Roxbury	110	0	110
Brockton	30	1	31
Bedford	38	4	42
Total	298	8	306

Proximity to Affiliates

As previously noted, the four current VAMC campuses in Boston have strong academic affiliations with local medical schools and serve as training facilities for medical residents. The Boston VAMCs have multiple affiliation arrangements with these schools, including training programs for medical students, interns, and allied health trainees, however, the majority of academic affiliations for residency programs reside with the HMS and BMC. It is presumed that many of the residents live near the medical schools; therefore a change in the distance from the affiliate may impact the ability of the VAMC to serve as the training facility. In addition, many of the faculty have dual appointments with the medical schools which may require travel between the VAMC campus and the medical schools. Additionally, the physicians may collaborate with the scientists at universities in Boston, which may be strained if programs are moved further away from these collaborative institutions. Therefore, the distance from the VAMC campuses to the two aforementioned primary affiliates will be a considerable area of potential impact due to VAMC reconfigurations in each BPO.

HMS and BMC, as well as many other local colleges and universities reside in the downtown Boston area, in or near to the Longwood Medical Community. The area is assumed to be the epicenter of academic affiliates due to the volume of VA residency programs and appointments associated with HMS and BMC. Jamaica Plain is located in the Longwood Medical Community in close proximity to HMS and BMC and the average distance from various VAMCs to the medical schools increases for West Roxbury (7.5 miles), Bedford (23.2 miles), and ultimately Brockton (23.9 miles). The average distances to HMS and BMC were determined by averaging the driving distance from each medical school to a VAMC. The table below indicates the average driving distance from each medical school to the VAMCs. This analysis was considered when determining the impact on several of the ease of implementation criteria. Specifically the relative impact, on research programs, residents, or faculty with dual appointments was determined based upon the transit distances of the moved services to the major affiliates.

[17] Staff affiliation listed as "not available" in the documentation provided by VA were considered to have no other affiliations outside of the VAMC.

Data provided by VA

Table 121: Driving Distances from Affiliates to VAMC Campuses[18]

Affiliate	VAMC Campus	Driving Distance (Miles)
Harvard Medical School	Jamaica Plain	1.2
Harvard Medical School	West Roxbury	7.1
Harvard Medical School	Bedford	22.3
Harvard Medical School	Brockton	24.9
Boston Medical College	Jamaica Plain	2.5
Boston Medical College	West Roxbury	7.9
Boston Medical College	Bedford	24
Boston Medical College	Brockton	22.9

Staff Employed by VAMCs

The four VAMC campuses employed approximately 3,665 full time employee equivalents (FTEEs) in FY06. The table below indicates the distribution of these FTEEs by VAMC as well as staff classification by administrative services, clinical services (i.e., nursing), and MD services (i.e., physician). Although it was noted that staff may travel between VAMCs and CBOCs, this allocation identifies the primary locations of employment for employees in the Boston study site.

Table 122: FY06 Full Time Employee Equivalent (FTEE) Allocations[19]

Campus	Administrative Services	Clinical Services	MD Services	Total
Jamaica Plain	470	330	137	938
West Roxbury	278	653	99	1,029
Brockton	373	446	90	909
Bedford	417	319	52	789
Total	1,538	1,748	378	3,665

Work Locations

The potential change in work location, caused by the BPOs, could impact the staff due to increased commute time caused by driving distance as well as traffic implications. It has been identified that the traffic in, and around, the city of Boston can be extremely heavy particularly during the summer months. It has also been identified that individuals living north of the city are resistant to travel south of the city for work and vice versa.

[18] Reference: http://www.mapquest.com

[19] Data provided by VA

BPO 1

The baseline is current state projected out to 2013 and 2023 without any changes to program except as indicated in the Secretary's 2004 Decision Document. Renovation and maintenance of existing buildings will occur to provide for a modern, safe, and secure healthcare environment, where conditions allow. The Bedford, Jamaica Plain and West Roxbury campuses will be renovated in existing buildings for projected workloads. Brockton will construct a new inpatient building to house the Spinal Cord Injury & Disorders (SCI&D) program while renovating existing structures.

In BPO1, all four VAMC campuses remain operational with no change in the location of healthcare services or research programs across the Boston study site. Therefore, there was no impact identified on any of the Ease of Implementation criteria. We assume the FTEEs, under this option, would change based on the fluctuation in utilization; however, there would not be any change in the number of FTEEs due to elimination of services.

BPO 8

In BPO 8, the Bedford campus will be consolidated to Brockton while a new CBOC will be established in the Bedford area. The Jamaica Plain and West Roxbury campuses will be right-sized for the projected workloads.

Inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure along with retaining the newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI&D unit, and returning veterans' services.

Services currently located at the Jamaica Plain and West Roxbury campuses will remain within BHS. Ambulatory surgical services and related specialties will be relocated from Jamaica Plain to West Roxbury. West Roxbury will be right-sized by renovating existing buildings and constructing a multi-story addition to Building 2 as well as a new parking structure. Jamaica Plain will be right-sized by incorporating campus functions into existing buildings and constructing additional parking. Services currently provided at the Causeway CBOC will be provided at Jamaica Plain.

- Number of research programs impacted: In BPO 8, all research program space at Brockton, West Roxbury, and Jamaica Plain campuses will remain in its current locations. Research program space at Bedford, with the exception of HSR&D and the Normative Aging Study, will be transferred to the Brockton campus. HSR&D and the Normative Aging Study will be transferred from Bedford to the Jamaica Plain campus. Therefore, basic science research and animal research facilities will be located at all three remaining campuses – Brockton, West Roxbury, and Jamaica Plain. Health Services

Research and Development Service (HSR&D) and Normative Aging Study will both be consolidated at Jamaica Plain.

All ten of the major research programs at Bedford will be impacted due to their relocation to another campus. It should be noted that two of the programs will move to the Jamaica Plain campus and therefore will be in closer proximity to the two major affiliates, HMC and BMC. The other eight programs will be moved to the Brockton campus and will remain approximately equal distance to the affiliates as they are currently in Bedford (see the table below).

Table 123: Research Programs Impacted in BPO 8

VAMC of Research Programs	# of Major Programs Impacted
Jamaica Plain	0
West Roxbury	0
Brockton	0
Bedford	10
Total	10

- Percentage of annual research budget impacted: In BPO 8, all research program space from Bedford will be transferred to the Brockton and Jamaica Plain campuses. The FY05 expenditure for active research protocols at Bedford was $10,050,714 or 24% of the total annual research budget across the four VAMCs. Since all of the research would be relocated to either Jamaica Plain or Brockton, the percentage of the annual budget impacted would be the total research budget for Bedford as quantified by FY05 research expenditures.

Table 124: Percentage of Annual Budget Impacted in BPO 8

VAMC of Research Budget	Annual Research Budget Impacted[20]
Jamaica Plain	$0
West Roxbury	$0
Brockton	$0
Bedford	$10,050,714
Total of Budget Impacted	$10,050,714
Total Research Budget	$42,581,297
% of Annual Research Budget Impacted	24%

- Number of residency programs and residents impacted: In BPO 8, it is assumed that the residency programs and residents will move from Bedford to the VAMCs receiving the healthcare service. This move will impact all six of the major residency programs and 15 residents on the Bedford campus. Furthermore the Eye Clinic, Orthopedics, Surgical and Related Specialties and Urology at Jamaica Plain will be moved to West Roxbury, impacting seven residency programs and 19 residents.

[20] The annual research budget impacted at Jamaica Plain does not consider any budget changes incurred from the move of the eye clinic, orthopedics, surgical and related specialties, and urology from Jamaica Plain to West Roxbury.

Table 125: Number of Residents Impacted in BPO 8

VAMC of Residency Program	# of Residents Impacted[21]
Jamaica Plain	19
West Roxbury	0
Brockton	0
Bedford	15
Total	34

- Number of faculty with dual appointments impacted: Similar to residents, all faculty will move with their associated healthcare services from the original facility. This move will include faculty who have two or more appointments, including their appointment at the VAMC. In BPO 8, it is assumed that faculty will move from Bedford to the VAMC facilities identified to receive the healthcare service they provide. Therefore the move will impact the 38 faculty with dual appointments as well as the four faculty members who hold more than two appointments located at Bedford.

  Furthermore the Eye Clinic, Orthopaedics, Surgical and Related Specialties and Urology at Jamaica Plain will be moved to West Roxbury, which will impact the 61 faculty with dual appointments, related to these services, located at Jamaica Plain.

Table 126: Number of Faculty with Dual Appointments Impacted in BPO 8

VAMC of Faculty with Dual(+) Appointment	# of Faculty Impacted[22]
Jamaica Plain	61
West Roxbury	0
Brockton	0
Bedford	42
Total	103

- Change in staff (measured in FTEEs): Although services are reconfigured across the VAMCs and CBOCs in the study site, there are no changes in healthcare services. Therefore, it is assumed that there would be no change in the number of FTEEs required for this option, other than the changes made in staffing to support fluctuations in total utilization.

[21] The Jamaica Plain residency programs were established by looking at the DSS crosswalk to identify specific services of the residency programs provided in a list by the VA. Once the Jamaica Plain programs were identified it was determined, per VA guidance, that there would be seven programs and approximately 19 residents moving to West Roxbury from Jamaica Plain.

[22] The number of Jamaica Plain faculty with dual appointments impacted was determined by analyzing the listing of academic appointments provided by the VA to identify faculty providing services impacted in the option. It was determined that 61 faculty members, totaling 29 FTEE, would be impacted.

Table 127: Change in Number of FTEEs in BPO 8

Original VAMC for FTEEs	Change in FTEEs
Jamaica Plain	0
West Roxbury	0
Brockton	0
Bedford	0
Total	0

- Number of staff required to change job site (measured in FTEEs): In BPO 8, all healthcare services are moved from the Bedford campus to receiving facilities, with the exception of those services being located at a Bedford CBOC. It is assumed that the Bedford CBOC will be in close enough proximity to the current campus that staff providing these services would not be required to change job site. These services include portions of Behavioral Health, Primary Care & Related Specialities and Work Therapy at Bedford being provided by 106 FTEEs (FY06).

  Furthermore the 96 FTEEs (FY06) at Jamaica Plain supporting the Eye Clinic, Orthopaedics, Surgical and Related Specialties and Urology will be moved, along with those services, to West Roxbury. The number of FTEEs changing job sites therefore is 779, which is comprised of the FTEEs moving from Jamaica Plain to West Roxbury and the total Bedford FTEEs, less those relocating to the Bedford CBOC.

Table 128: Number of Staff Required to Change Job Site in BPO 8

Original VAMC for FTEEs	Change in FTEEs	% Change in FTEEs
Jamaica Plain	96	10%
West Roxbury	0	0%
Brockton	0	0%
Bedford	683	87%
VAMC Total	779	21%

BPO 10

In BPO 10, the Bedford campus will be consolidated to Brockton while a new CBOC will be established in the Bedford area. The West Roxbury campus will be consolidated to Jamaica Plain.

Inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure along with retaining the newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI&D unit, and returning veterans' services.

Services currently located at the West Roxbury campus will be consolidated onto the Jamaica Plain campus. Primary care and ambulatory behavioral health services, as well as some specialized ambulatory services may be relocated to BHS CBOCs and the remaining VAMCs, as appropriate. Building 1 on the Jamaica Plain campus will be replaced with new construction. The construction period for this four-year effort will occur between 2010 and 2014, during which time a portion of the primary care and behavioral health services will be provided for in leased space in the nearby community. Additionally some of the ambulatory specialty services will be temporarily contracted out in the community. The remaining ambulatory services will be provided in Building 1F during construction. During the four-year construction period at the Jamaica Plain campus, the VA research programs at Jamaica Plain will be maintained on the campus in available space. The majority of this available space is expected to be provided in Building 9. Special needs of educational and research programs along with additional parking as needed, will be incorporated. Additionally, services currently provided at the Causeway CBOC will be provided at Jamaica Plain.

- Number of research programs impacted: In BPO 10, all research program space at Brockton will remain in its current locations. All research program space at Jamaica Plain will remain in its current location; however during the four-year construction effort some of the programs will have to be contracted off-campus. All research program space from Bedford will be transferred to the Brockton campus. Most of the research space from Bedford will be transferred to the Brockton campus, with the exception of HSR&D and the Normative Aging Study which will be consolidated at Jamaica Plain.

  All ten of the major research programs at Bedford will be impacted by their relocation to another facility. It should be noted that the HSR&D at Bedford will move to the Jamaica Plain campus and therefore will be in closer proximity to the two major affiliates, HMS and BMC. The other nine programs will be moved to the Brockton campus and will remain approximately equal distance to the affiliates as they are currently (see the table below).

  Furthermore all nine of the major research programs at West Roxbury will be impacted by their relocation to Jamaica Plain; however the increase in distance from the two major affiliates would be minimal (see the table below).

Table 129: Research Programs Impacted in BPO 10

VAMC of Research Programs	# of Major Programs Impacted
Jamaica Plain	23 (temporary)[23]
West Roxbury	9
Brockton	0
Bedford	10
Total	42 total (19 permanent/ 23 temporary)

[23] All 23 of the research programs currently at Jamaica Plain are shown to be temporarily impacted during the four-year new construction effort on the campus. This however is a conservative estimate, as it is anticipated that many of the research programs will not move off the campus and will remain in available space, thus decreasing the number impacted.

- Percentage of annual research budget impacted: In BPO 10, all research program space from Bedford will be transferred to the Brockton and Jamaica Plain campuses and all research program space from West Roxbury will be transferred to the Jamaica Plain campus. The FY05 expenditure for active research protocols was $10,050,714 at Bedford and $4,092,007 at West Roxbury or 24% and 10% of the total annual research budget across the four VAMCs, respectively. Since all of the research would be relocated to either Jamaica Plain or Brockton, the percentage of the annual budget impacted would be the total research budget for Bedford and West Roxbury as quantified by FY05 research expenditures.

Table 130: Percentage of Annual Budget Impacted in BPO 10

VAMC of Research Budget	Annual Research Budget Impacted
Jamaica Plain	$0
West Roxbury	$4,092,007
Brockton	$0
Bedford	$10,050,714
Total of Budget Impacted	$14,142,721
Total Research Budget	$42,581,297
% of Annual Research Budget Impacted	34%

- Number of residency programs and residents impacted: In BPO 10, it is assumed that the residency programs and residents will move from Bedford and West Roxbury to the VAMCs receiving the healthcare service. This move will impact all six of the major residency programs and 15 residents on the Bedford campus. Furthermore all of the residency programs from West Roxbury will be moved, impacting 146 residents. Additionally, 38 residents at Jamaica Plain would be temporarily impacted during the construction period of a new tower from 2010 - 2014.

Table 131: Number of Residents Impacted in BPO 10

VAMC of Residency Program	# of Residents Impacted[24]
Jamaica Plain	38 (temporary)
West Roxbury	146
Brockton	0
Bedford	15
Total	199 total (161 permanent/ 38 temporary)

- Number of faculty with dual appointments impacted: Similar to residents, all faculty will move with their associated healthcare services from the original facility. This move will include faculty who have two or more appointments, including their appointment at a VAMC. In BPO 10, it is assumed that faculty will move from Bedford and West Roxbury to the VAMC facilities identified to receive the healthcare service they provide. Therefore the move will impact the 38 faculty with dual appointments as well as the four

24 The number of residency programs for the three BHS VAMCs are provided in total, as was communicated in the documentation received by VA for analysis. The number of residents for BHS VAMCs was determined based on fractional allocations, provided by the VA, of the total number of BHS residents for each of the three VAMCs.

faculty members who hold more than two appointments located at Bedford and the 110 faculty with dual appointments at West Roxbury. Additionally, 44 faculty with dual appointments at Jamaica Plain would be temporarily impacted during the construction period of a new tower from 2010 - 2014.

Table 132: Number of Faculty with Dual Appointments Impacted in BPO 10

VAMC of Faculty with Dual(+) Appointment	# of Faculty Impacted
Jamaica Plain	44 (temporary)
West Roxbury	110
Brockton	0
Bedford	42
Total	196 total (152 permanent/ 44 temporary)

- Change in staff (measured in FTEEs): Due to the construction of a new tower at Jamaica Plain from 2010 through 2014, some of the ambulatory specialty care will need to be temporarily contracted out to the community. As a result the Jamaica Plain staff will temporarily decrease by approximately 335 FTEEs for this four-year period. Irrespective of this temporary change in staff at Jamaica Plain, there is no permanent change in healthcare services across the VAMCs and CBOCs in the study site. Consequently, it is assumed that there would be no permanent change in the number of FTEEs required for this option, other than the changes made in staffing to support fluctuations in total utilization from the reconfiguration of services

Table 133: Change in Number of FTEEs in BPO 10

Original VAMC for FTEEs	Change in FTEEs
Jamaica Plain	335 (temporary)
West Roxbury	0
Brockton	0
Bedford	0
Total	335 total (0 permanent) / 335 (temporary)

- Number of staff required to change job site (measured in FTEEs): In BPO 10, all healthcare services are moved from the Bedford campus to receiving facilities, with the exception of those services being located at a Bedford CBOC. It is assumed that the Bedford CBOC will be in close enough proximity to the current campus that staff providing these services would not be required to change job site. These services include portions of Behavioral Health, Primary Care & Related Specialities and Work Therapy at Bedford being provided by 106 FTEEs (FY06).

  Furthermore all services provided at West Roxbury will be relocated, impacting 1,029 FTEEs. The total number of FTEEs permanently changing job sites therefore is 1,712, which is comprised of all West Roxbury FTEEs and the total Bedford FTEEs, less those relocating to the Bedford CBOC.

Additionally, at Jamaica Plain would it is assumed that the contracted or leased space will be in close enough proximity to the current campus that staff providing these services would not be required to change job site.

Table 134: Number of Staff Required to Change Job Site in BPO 10

Original VAMC for FTEEs	Change in FTEEs	% Change in FTEEs
Jamaica Plain	0	0%
West Roxbury	1,029	100%
Brockton	0	0%
Bedford	683	87%
VAMC Total	1,712	47%

BPO 11

In BPO 11, the Bedford campus will be consolidated to Brockton while new CBOCs will be established in the Bedford area and in an urban setting (downtown Boston). The Jamaica Plain campus will be consolidated to West Roxbury.

Inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure along with retaining the newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI&D unit, and returning veterans' services.

Services currently located at Jamaica Plain will be consolidated onto the West Roxbury campus. The consolidation at West Roxbury will be accomplished through the renovation of Buildings 1, 2, and 3 along with the construction of two new multi-story additions behind Building 1, allowing for its historic façade to remain. Primary care, some specialized ambulatory services, and outpatient mental health may be relocated to BHS CBOCs, as appropriate. An urban CBOC in the downtown Boston area will provide methadone treatment in addition to primary care and ambulatory behavioral health. Special needs of educational and research programs as well as parking will be incorporated.

- Number of research programs impacted: In BPO 11, all research program space at Brockton and West Roxbury will remain in its current locations. All research program space from Bedford, excluding space for HSR&D and the Normative Aging Study, will be transferred to the Brockton campus. HSR&D and the Normative Aging Study programs at the Bedford campus will be transferred to West Roxbury. All research program space at Jamaica Plain will be transferred to West Roxbury. HSR&D will be consolidated at West Roxbury. The three research protocols that were identified as National Programs, currently at Jamaica Plain, including the Massachusetts Veterans Epidemiology Research and Information Center (MAVERIC), National Center for Post traumatic Stress Disorder (PTSD), and Center for Organization, Leadership and Management Research (COLMR) will follow the outpatients, clinical research labs and HSR&D programs that they are currently linked to Jamaica Plain and are relocated to West Roxbury.

  All ten of the major research programs at Bedford will be impacted due by their relocation to another campus. It should be noted that HSR&D at Bedford will move to the West Roxbury campus and therefore will be in closer proximity to the two major affiliates, HMS and BMC. The other nine programs will be moved to the Brockton campus and will remain approximately equal distance to the affiliates as they are currently (see the table below).

  Furthermore, the 23 major research programs at Jamaica Plain will be impacted by the relocation to West Roxbury; however the increase in distance to the two major affiliates would be minimal (see the table below).

  Table 135: Research Programs Impacted in BPO 11

VAMC of Research Programs	# of Major Programs Impacted
Jamaica Plain	23
West Roxbury	0
Brockton	0
Bedford	10
Total	33

- Percentage of annual research budget impacted: In BPO 11, all research program space from Bedford will be transferred to the Brockton and West Roxbury campuses and all research program space from Jamaica Plain will be transferred to the West Roxbury campus. The FY05 expenditure for active research protocols was $10,050,714 at Bedford and $23,429,834 at Jamaica Plain or 24% and 55% of the total annual research budget across the four VAMCs, respectively. Since all of the research would be relocated to either West Roxbury or Brockton, the percentage of the annual budget impacted would be the total research budget for Bedford and Jamaica Plain as quantified by FY05 research expenditures.

Table 136: Percentage of Annual Budget Impacted in BPO 11

VAMC of Research Budget	Annual Research Budget Impacted
Jamaica Plain	$23,429,834
West Roxbury	$0
Brockton	$0
Bedford	$10,050,714
Total of Budget Impacted	$33,480,548
Total Research Budget	$42,581,297
% of Annual Research Budget Impacted	79%

- Number of residency programs and residents impacted: In BPO 11, it is assumed that the residency programs and residents will move from Bedford and Jamaica Plain to the VAMCs receiving the healthcare service. This move will impact all six of the major residency programs and 15 residents on the Bedford campus. Furthermore all of the residency programs from Jamaica Plain will be moved, impacting 73 residents.

Table 137: Number of Residents Impacted in BPO 11

VAMC of Residency Program	# of Residents Impacted[25]
Jamaica Plain	73
West Roxbury	0
Brockton	0
Bedford	15
Total	88

- Number of faculty with dual appointments impacted: Similar to above residents, all faculty will move with their associated healthcare services from the original facility. This move will include faculty who have two or more appointments, including their appointment at a VA. In BPO 11, it is assumed that faculty will move from Bedford and Jamaica Plain to the VAMC facilities identified to receive the healthcare service they provide. Therefore the move will impact the 38 faculty with dual appointments and four faculty with more than two appointments located at Bedford as well as the 120 faculty with dual appointments and three faculty with more than two appointments located at Jamaica Plain.

Table 138: Number of Faculty with Dual Appointments Impacted in BPO 11

VAMC of Faculty with Dual(+) Appointment	# of Faculty Impacted
Jamaica Plain	123
West Roxbury	0
Brockton	0
Bedford	42
Total	165

25 The number of residency programs for the three BHS VAMCs are provided in total, as was communicated in the documentation received by VA for analysis. The number of residents for BHS VAMCs was determined based on fractional allocations, provided by the VA, of the total number of BHS residents for each of the three VAMCs.

- Change in staff (measured in FTEEs): Although services are reconfigured across the VAMCs and CBOCs in the study site, there are no changes in healthcare services. Therefore, it is assumed that there would be no change in the number of FTEEs required for this option, other than the change's made in staffing to support fluctuations in total utilization.

Table 139: Change in Number of FTEEs in BPO 11

Original VAMC for FTEEs	Change in FTEEs
Jamaica Plain	0
West Roxbury	0
Brockton	0
Bedford	0
Total	0

- Number of staff required to change job site (measured in FTEEs): In BPO 11, all healthcare services are moved from the Bedford campus to receiving facilities, with the exception of those services being located at a Bedford CBOC. It is assumed that the Bedford CBOC will be in close enough proximity to the current campus that staff providing these services would not be required to change job site. These services include portions of Behavioral Health, Primary Care & Related Specialities and Work Therapy at Bedford being provided by 106 FTEEs (FY06).

  Furthermore all services provided at Jamaica Plain will be relocated, impacting 938 FTEEs. The total number of FTEEs changing job sites therefore is 1,621, which is comprised of all Jamaica Plain FTEEs and the total Bedford FTEEs, less those relocating to the Bedford CBOC.

Table 140: Number of Staff Required to Change Job Site in BPO 11

Original VAMC for FTEEs	Change in FTEEs	% Change in FTEEs
Jamaica Plain	938	100%
West Roxbury	0	0%
Brockton	0	0%
Bedford	683	87%
VAMC Total	1,621	44%

BPO Summary Comparison of Ease of Implementation Criteria Results

The table below provides a side-by-side comparison of the Ease of Implementation criteria for each BPO. In BPO 1, all four VAMC campuses remain operational with no change in the location of delivery of healthcare services or research programs across the Boston study site. Therefore, there was no impact identified on any of the Ease of Implementation criteria and thus has been zeroed out for each criteria in this table.

Table 141: Ease of Implementation BPO Summary of Results

Criteria	BPO 1	BPO 8	BPO 10	BPO 11
# of Research Sites Affected (31 unique research programs located at 47 research sites)	0	10	19	33
	0%	21%	40%	70%
Annual Research Budget Affected ($42,581,297 annual budget)	$0	$10,050,714	$14,142,721	$33,480,548
	0%	24%	34%	79%
# of Residents Affected (264 total residents)	0	34	161	88
	0%	13%	61%	33%
# of Faculty Affected (329 faculty with dual appointments)	0	103	196 (152 permanent/ 44 temporarily)	165
	0%	31%	60%	50%
Change in FTEEs (3666 total FTEEs)	0	0	335 (temporarily)	0
	0%	0%	9%	0%
# of FTEEs Required to Change Job Site (3666 total FTEEs)	0	779	1,712	1,621
	0%	21%	47%	44%

9.0 Ability to Support Other VA Programs

As noted previously, the purpose of this study is to determine how BPOs may support or jeopardize specific programs that have been identified as primary initiatives. These initiatives include enhanced DoD sharing, One-VA integration, promotion of specialized programs, and enhancement of services to veterans. The following summarizes the current position of the Boston study site with respect to the noted criteria for this study:

DoD Sharing

None of the campuses in the Boston Healthcare System (BHS) have DoD sharing arrangements. However, the Bedford campus has an arrangement with the U.S. Air Force for the use and management of the golf course on the Bedford campus. This arrangement is to allow for the recreational activities for U.S. Air Force service personnel and also addresses recreational opportunities for VA patients. The current agreement is to expire in 2011; however, the site noted that this relationship would be expected to continue beyond 2011 as the U.S. Air Force has shown interest in expanding the golf course under and longer term lease.

One-VA Integration

Neither of the campuses in BHS nor the Bedford campus house Veterans Benefits Administration (VBA) or National Cemetery Administration (NCA) offices. The VBA and NCA offices in the Boston area to serve veterans in this area include the following:

VBA
Boston VA Regional Office
JFK Federal Building
Boston, MA 02203

NCA
Massachusetts National Cemetery
Connery Avenue
Bourne, MA 02532

Specialized VA Programs

The Boston study site hosts a number of specialized programs across the four campuses as described below.

Bedford

Bedford hosts the Geriatric Research, Education, and Clinical Center (GRECC) which supports a 100-bed inpatient dementia unit as well as outpatient clinics. In addition to providing clinical care to patients in these units, the GRECC also supports both clinical and basic science research in the geriatric specialty and conducts geriatric related educational programs.

Similar to the GRECC, Bedford also hosts the Mental Illness Research, Education, and Clinical Center (MIRECC). The Center provides treatment to veterans who suffer from psychiatric disorders and co-morbid substance abuse or dependence. Research is also conducted across several clinical programs to expand the knowledge of these disorders, and education programs are conducted to further disseminate this new knowledge.

Research focused programs located at the Bedford campus include the Center for Health Quality, Outcomes & Economic Research (CHQOER) and the National VA Amytrophic Lateral Sclerosis (ALS) Research Program. The CHQOER is a Health Services Research & Development (HSR&D) Center of Excellence and is focused on three areas of research: health quality, health outcomes assessment, and health economics. The purpose of the National VA ALS Research Program is to advance the development of therapeutic trials in ALS while also working to understand and explain the disease. Program related trials are currently being held at Bedford to support the ultimate goal of this program.

Additionally, there are several mental health programs that are neither classified as inpatient or standard outpatient programs. These programs address specific veteran needs and include the Veterans Center for Addiction Treatment, the Community Stabilization Program, Mental Health Intensive Case Management (MHICM), and the Rogers House.

West Roxbury

The Acute Spinal Cord Injury Disorder (SCI&D) unit at West Roxbury is part of the nationally recognized and CARF accredited SCI&D Program. The program is a regional resource for much of New England and includes a strong training component for medical students, residents, nurses, and allied health professional. The acute unit supports 34 operational and 40 authorized beds and an ambulatory program that served almost 700 unique patients in 2005. The associated SCI&D Research Program focuses on investigations that include adult stem cells, tissue and chemical engineering, nanotechnology, physical activity-mediated functional recovery, bone metabolic changes and muscle pathophysiology. Furthermore, Ambulatory Care SCI&D is also housed at West Roxbury which includes on-site exam rooms, home care and telemedicine.

West Roxbury also supports the Cardiac Surgery Program which is a VHA Program of Excellence. This program is a referral center for New England and Upstate New York and is growing at approximately 400 patients annually. In FY05 there were 863 major cases involving cardiac surgery in the Boston Healthcare System. The program has demonstrated success in improving morbidity and mortality rates by the implementation of innovative care. The program includes a strong research and training component as well.

It should be noted that preliminary discussions and planning have been started to enhance West Roxbury's designation as a Polytrauma Level II (referral center) Network site, which include areas related to staffing and equipment needs, clinic designation, and patient support and outreach.

Jamaica Plain

Jamaica Plain hosts multiple Centers of Excellence. One of the most notable programs is the National Center for Post Traumatic Stress Disorder (PTSD) which is housed on the Jamaica Plain campus. The mission of the Center is to advance the clinical care and social welfare of veterans through research, education, and training in the science, diagnosis, and treatment of PTSD and stress-related disorders. Two divisions of the Center are the Behavioral Sciences Division and the Women's Health Sciences Division which treats over 1,400 patients annually and oversees the clinical and education programs for PTSD.

The Comprehensive Women's Health Center at Jamaica Plain is one of only eight in the nation. The Center supports the Women's Veterans Health Program (WVHP) which treats over 2000 women and spouses annually. The program provides primary and specialty care particularly for the female gender, including gynecology, breast health, urology, etc. The program also provides support for more complex medical and psychosocial issues such as PTSD, homelessness, depression, etc. The Center works closely with the mental health teams to provide treatment and support specifically to women with trauma and stress-related disorders. Additional services include a Transitional Residence in a Jamaica Plain neighborhood and the Women's Homelessness Program which provides intensive case management to women and their children at risk for homelessness.

The Center for Returning Veterans from Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), located at Jamaica Plain and Brockton, provides various support services and efforts for the recent veterans returning from Iraq and Afghanistan. The efforts of this program are directed at outreach, intervention and specialized mental health services for those veterans, as well as continuous program improvement to better serve the returning men and women.

The Congestive Heart Failure Center at Jamaica Plain provides patient care and consultation for advanced heart failure patients for the network. This interdisciplinary program includes nurse-practitioners, dieticians, cardiac electrophysiologists, and affiliates providing both inpatient and outpatient care. The program further provides training for students and residents at affiliated local hospitals.

Also established at Jamaica Plain is the Ocular Telehealth Center (OTC) which provides eye and health care treatment for patients with diabetes and other ocular and related systemic disorders. The focus is to reduce the burden of disease utilizing information technology to provide a link between high-risk patients and the VA healthcare system. The program also researches new methods to deliver eye care using the unique strengths of information technology.

Other specialized programs provided at Jamaica Plain also include the Center for Innovative Visual Rehabilitation and Management Decision and Research Center.

Brockton

Brockton hosts another component of the nationally recognized and CARF accredited SCI&D Program, which is the Chronic Spinal Cord Injury Unit. Again, the program is a regional resource for much of New England and includes a strong training component for medical students, residents, nurses, and allied health professional. This unit has 30 operational and 40 authorized beds.

Brockton is a Center of Excellence for the Seriously Mentally Ill, providing extensive inpatient and outpatient mental health services, including chronic and acute inpatient psychiatry programs as well as substance abuse programs. Brockton also houses an inpatient psychiatry unit dedicated to women, one of only four in the entire VA system.

The Center for Returning Veterans from Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), located at Brockton and Jamaica Plain, provides various support services and efforts for the recent veterans returning from Iraq and Afghanistan. The efforts of this program are directed at outreach, intervention and specialized mental health services for those veterans, as well as continuous program improvement to better serve the returning men and women.

Proposed Enhancement of Services

The Boston study site will be undergoing typical renovations and upgrades to enhance services for veterans. West Roxbury will be continue to advance as a designated polytrauma center, as was previously indicated. Other proposed enhancements to services include the introduction of two new programs at the Brockton campus including a Women's Residential Program and a Psychosocial Rehabilitation and Recovery Center (PRRC). The Women's Residential Program (WRP) allows for specialized, residential treatment for women suffering from PTSD and Substance Use Disorder (SUD) and was activated in January 2007. The proposal for the PRRC was awarded in July 2006, and this Center would provide outpatient psychiatric treatment through learning centers, cognitive and social remediation, and other evidenced-based psycho-social interventions. Through partnerships with multiple private organizations, Bedford is anticipated to develop a 60 bed shelter program for homeless veterans, which has been established through a ten year enhanced use lease.

BPO 1

As previously described, baseline is the current state projected out to 2013 and 2023 without any changes to program except as indicated in the Secretary's 2004 Decision Document. Renovation and maintenance of existing buildings will occur to provide for a modern, safe, and secure healthcare environment, where conditions allow. The Bedford, Jamaica Plain and West Roxbury campuses will be renovated in existing buildings for projected workloads. Brockton will construct a new inpatient building to house the chronic spinal chord injury program while renovating existing structures. The table below summarizes the impact of Option 1 on the evaluation criteria.

Table 142: Impact of Option 1 on the Evaluation Criteria

Evaluation Criteria	Impact
DoD Sharing	The only DoD arrangement to note is the one which provides the U.S. Air Force use and management of the Golf Course on the Bedford campus. Under baseline, this DoD arrangement should remain intact; however, if this parcel of land were pursued for reuse, it would require the arrangement to not be renewed upon its expiration in 2011.
One-VA Integration	In Option 1, the area VBA and NCA offices remain at their current locations, and they are not co-located with the VAMC on the any of the Boston study site campuses. Thus, there is no impact on One-VA Integration.
Specialized VA Programs	Since all services remain on their respective campuses in the baseline, there should be no impact on any of the specialized services.
Proposed Enhancement of Services	The baseline would assume all planned enhancements to services would be implemented as designed.

BPO 8

The Bedford campus will be consolidated to Brockton while a new CBOC will be established in the Bedford area. The Jamaica Plain and West Roxbury campuses will be right-sized for the projected workloads.

Inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure along with retaining the newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI unit, and returning veterans' services.

Services currently located at the Jamaica Plain and West Roxbury campuses will remain within BHS. Ambulatory surgical services and related specialties will be relocated from Jamaica Plain to West Roxbury. West Roxbury will be right-sized by renovating existing buildings and constructing a multi-story addition to Building 2 as well as a new parking structure. Jamaica Plain will be right-sized by incorporating campus functions into existing buildings and constructing additional parking. Additionally, services currently provided at the Causeway CBOC will be provided at Jamaica Plain. The following table summarizes the impact of Option 8 on the evaluation criteria.

Table 143: Impact of Option 8 on the Evaluation Criteria

Evaluation Criteria	Impact
DoD Sharing	Since the Bedford campus is consolidated to Brockton, the entire Bedford campus is made available for reuse. The reuse of this portion of the Bedford campus would require the expiration of the U.S. Air Force arrangement for use and management of the golf course.
One-VA Integration	In Option 8, the area VBA and NCA offices remain at their current locations, and they are not co-located with the VAMC on the any of the Boston study site campuses. Thus, there is no impact on One-VA Integration.
Specialized VA Programs	All of the specialized programs at Bedford, with the exception of HSR&D and the Normative Aging Study, would be displaced to the Brockton campus. The relocation of these programs would need to be carefully coordinated to ensure continuity of clinical care, as well as research and education programs. The renovations and new construction in this option should provide adequate square footage to accommodate the services of polytrauma at West Roxbury, as well as the WRP and PRRC at Brockton.
Proposed Enhancement of Services	In addition to the implementation of planned enhancements, it would be assumed that the collocation of geriatric and inpatient psychiatry services on the Brockton campus would enhance these services.

BPO 10

The Bedford campus will be consolidated to Brockton while a new CBOC will be established in the Bedford area. The West Roxbury campus will be consolidated into Jamaica Plain.

Inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure along with retaining the newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI unit, and returning veterans' services.

Services currently located at the West Roxbury campus will be consolidated onto the Jamaica Plain campus. Primary care and behavioral health, as well as some specialized ambulatory services may be relocated to BHS CBOCs and VAMCs, as appropriate. Building 1 on the Jamaica Plain campus will be replaced with new construction. During construction, a portion of ambulatory services will be provided off-site in the community in leased space or through contracts with local providers. Some of the ambulatory services will continue to be provided in renovated space on campus. VA programs at Jamaica Plain will maintain on the campus in available space. Special needs of educational and research programs along with additional parking as needed, will be incorporated. Space will need to be leased to accommodate primary care, behavioral health, wet lab, research and administrative services and to contract out services for outpatient specialty care during construction at Jamaica Plain. Once construction is complete, all patients will be able to move back to the newly built tower from their temporary locations.

Additionally, services currently provided at the Causeway CBOC will be provided at Jamaica Plain. The table below summarizes the impact of Option 10 on the evaluation criteria.

Table 144: Impact of Option 10 on the Evaluation Criteria

Evaluation Criteria	Impact
DoD Sharing	Since the Bedford campus is consolidated to Brockton, the entire Bedford campus is made available for reuse. The reuse of this portion of the Bedford campus would require the expiration of the U.S. Air Force arrangement for use and management of the golf course.
One-VA Integration	In Option 10, the area VBA and NCA offices remain at their current locations, and they are not co-located with the VAMC on the any of the Boston study site campuses. Thus, there is no impact on One-VA Integration.
Specialized VA Programs	The specialized programs at Bedford, including the GRECC and MIRECC, would be displaced to the Brockton campus. The Acute SCI unit, Cardiac Surgery Program, and Polytrauma unit at West Roxbury would be displaced to the Jamaica Plain campus. The relocation of these programs would need to be carefully coordinated to ensure continuity of clinical care, as well as research and education programs. Polytrauma is a newly designated program at the West Roxbury campus. Since the replacement facilities will be constructed to accommodate 2023 projected utilization, there should be adequate square footage for any new service requirements in the newly constructed facilities at the new location on the Jamaica Plain campus. During the four-year construction period at the Jamaica Plain campus, a portion of the research programs could be accommodated in Building 9, with additional space to be leased during the proposed construction as needed. Additionally, space will need to be leased to accommodate primary care, behavioral health, wet lab, research and administrative services and to contract out outpatient specialty services during construction at Jamaica Plain. The Center for Returning Veterans from Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) will be maintained on the Jamaica Plain campus if space is available; however it could also be housed at Brockton or in leased space.
Proposed Enhancement of Services	In addition to the implementation of planned enhancements, it would be assumed that the collocation of geriatric and inpatient psychiatry services on the Brockton campus would enhance these services. Furthermore, it is assumed that the collocation of acute inpatient and ambulatory services would enhance the collective services on the Jamaica Plain campus.

BPO 11

The Bedford campus will be consolidated to Brockton while new CBOCs will be established in the Bedford area and in an urban setting (downtown Boston). The Jamaica Plain campus will be consolidated into West Roxbury.

Inpatient and residential clinical (i.e., inpatient mental health and psychiatry, domiciliary, and nursing home) currently located at Bedford will be consolidated onto the Brockton campus. Brockton will construct two new multi-story buildings and a new parking structure along with

retaining the newly renovated Buildings 2, 3, 4, and 20. The GRECC unit will be incorporated into Brockton along with special needs of the Alzheimer's unit, chronic SCI unit, and returning veterans' services.

Services currently located at Jamaica Plain will be consolidated onto the West Roxbury campus. Primary care, some specialized ambulatory services, and outpatient mental health may be relocated to BHS CBOCs, as appropriate. The consolidation will be accomplished through the renovation of Buildings 1, 2, and 3 along with the construction of two new multi-story additions behind Building 1, allowing for its historic façade to remain. An urban CBOC in the downtown Boston area will provide methadone treatment in addition to primary care and ambulatory mental health. Special needs programs of educational and research programs along with additional parking as needed will be incorporated. The table below summarizes the impact of Option 11 on the evaluation criteria.

Table 145: Impact of Option 11 on the Evaluation Criteria

Evaluation Criteria	Impact
DoD Sharing	Since the Bedford campus is consolidated to Brockton, the entire Bedford campus is made available for reuse. The reuse of this portion of the Bedford campus would require the expiration of the U.S. Air Force arrangement for use and management of the golf course.
One-VA Integration	In Option 11, the area VBA and NCA offices remain at their current locations, and they are not co-located with the VAMC on the any of the Boston study site campuses. Thus, there is no impact on One-VA Integration.
Specialized VA Programs	The specialized programs at Bedford, including the GRECC and MIRECC, would be displaced to the Brockton campus. The National Center for PTSD, Comprehensive Women's Health Center and associated programs, as well as other specialty programs at the Jamaica Plain campus would be displaced to the West Roxbury campus. The relocation of these programs would need to be carefully coordinated to ensure continuity of clinical care, as well as research and education programs. Polytrauma is a newly designated program at the West Roxbury campus. Since the replacement facilities will be constructed to accommodate 2023 projected utilization, there should be adequate square footage for this new service in the newly constructed facilities.
Proposed Enhancement of Services	In addition to the implementation of planned enhancements, it would be assumed that the collocation of geriatric and inpatient psychiatry services on the Brockton campus would enhance these services. Furthermore, it is assumed that the collocation of acute inpatient and ambulatory services would enhance the collective services on the West Roxbury campus.

10.0 Stakeholder and LAP Input Analysis

The purpose of the stakeholder element in the CARES study was to encourage a meaningful dialogue among veterans, veterans advocacy groups, employees, elected officials, and other interested parties about the options being considered for the Boston study site. Feedback from stakeholders was considered by Team PwC in developing and evaluating BPOs and in developing implementation plans and risk mitigation strategies for each BPO. This feedback will also be used by VA decision makers in weighing the advantages and disadvantages of each BPO and its associated implementation plans.

VA determined at the beginning of the CARES process that it would use the Federal Advisory Committee Act (FACA) process to solicit stakeholder input and to provide a public forum for discussion of stakeholder concerns because "[t]he gathering and consideration of stakeholder input in this scope of work is of great importance." According to the Statement of Work, the purpose of the Local Advisory Panel (LAP) appointed under the FACA is to:

provide the Contractor with a perspective on previous CARES local planning products, facility mission and workload, facility clinical issues, environmental factors, VISN referral and cross cutting issues in order to assist the Contractor in the refinement of the options the Contractor shall recommend. The Federal Advisory Committee will also provide feedback to the Contractor on proposed options and recommendations.

The Boston LAP consists of members: Joyce Murphy, Chair, Vice Chancellor and Chief Operating Officer, Commonwealth Medicine, UMASS Medical School; Michael J. Miller, MD, PhD, Chief Medical Officer, VISN 1; Vincent Ng, Director, Providence VAMC; Thomas Materazzo, Former Assistant to the Mayor, City of Boston; Thomas Moore, MD, Associate Provost for Clinical Research, Boston University Medical College; Thomas Kelley, Secretary, Department of Veterans Services, Massachusetts; Henry (Hank) Bradley, Director, Veterans Services for the City of Quincy, MA, Past National Vice Commander, American Legion; and Diane Gilbert, CEO, Gilbert Consulting Firm.

The LAP held public meetings at which stakeholders had an opportunity to present testimony and comment on the work performed by Team PwC and the deliberations of the LAP. The LAP public meetings were one of a series of communication channels provided to stakeholders to express their interests, concerns, and priorities for the study. Stakeholders could give oral and written testimony at the LAP meetings, submit written comments or proposals to the central mailing address, or complete one of the comment forms specific to the options being studied in Stage I or Stage II.

Recap of LAP Meeting 2 Stakeholder and LAP Input

Approximately 110 members of the public attended the second LAP meeting held on September 27, 2005 during Stage I of the CARES study. A total of 727 forms of stakeholder input (oral, written, and electronic) were received between April 20 and October 7, 2005. At the second LAP meeting stakeholders were given the opportunity to provide feedback regarding the specific

BPOs being considered for further study in Stage II by Team PwC. Through the VA CARES website and comment forms distributed at the public meeting, stakeholders were able to indicate if they "favor", are "neutral", or are "not in favor" of each of the BPOs. The results of this written and electronic feedback on the BPOs being considered for further study in Stage II are provided in the table below. Because BPO 10 was added by the LAP at the second LAP meeting, and BPO 11 was added by the Secretary for Stage II study after the second LAP meeting, those options were not included on the LAP 2 comment form:

Table 146: LAP Meeting 2 Stakeholder Comment Form Results for Stage II Study BPOs

BPO	Label	Favor	Neutral	Not Favor
1	Baseline	170	26	35
2	Consolidate all Services at West Roxbury; Reuse Bedford, Brockton, and Jamaica Plain; Build CBOC at Brockton	12	14	201
3	Consolidate all Services at Jamaica Plain; Reuse Bedford, Brockton, and West Roxbury; Build CBOC at Brockton	18	13	195
4	Consolidate all Services at Brockton; Reuse Bedford, West Roxbury, and Jamaica Plain; Build CBOC at New Urban Location	49	19	159
5	Consolidate all Services at New Urban Campus; Reuse Bedford, Brockton, West Roxbury, and Jamaica Plain; Build CBOC at Brockton	33	19	174
6	Consolidate Jamaica Plain at West Roxbury; Reuse Jamaica Plain; Right-Size West Roxbury, Brockton, and Bedford	42	37	145
7	Build New Acute Care and Research Facility at Urban Location; Right-Size Bedford and Brockton; Reuse Jamaica Plain and West Roxbury	71	32	122
8	Consolidate Bedford at Brockton; Right-Size Jamaica Plain and West Roxbury; Build New CBOCs at Urban Location and North Shore	84	38	99
9	Consolidate Bedford and Brockton at West Roxbury; Consolidate Inpatient, Ambulatory Care, and Research at Jamaica Plain; Build New CBOCs at North Shore and South Shore	26	12	184

Overall the comment forms received during the second LAP meeting indicated that stakeholders showed the most support for BPO 1 "Baseline" which is the current state patient care utilization projected out to 2023 without any changes to facilities, programs or locations, but accounting for projected utilization changes, and assuming same or better quality, and necessary maintenance for a safe, secure, and modern healthcare environment. The majority of stakeholders did not support the other BPOs, and showed the most negative response toward BPOs that eliminate the Bedford facility such as BPO 2 (Consolidate all Services at West Roxbury; Reuse Bedford, Brockton, and Jamaica Plain; Build CBOC at Brockton), BPO 3 (Consolidate all Services at Jamaica Plain; Reuse Bedford, Brockton, and West Roxbury; Build CBOC at Brockton) and BPO 9 (Consolidate Bedford and Brockton at West Roxbury; Consolidate Inpatient, Ambulatory Care, and Research at Jamaica Plain; Build New CBOCs at North Shore and South Shore).

At the second LAP meeting a number of veterans, veteran advocates, elected officials, and other interested parties provided oral testimony. There was a range of views expressed about the merits of maintaining the existing facilities. Many stakeholders expressed their desire to maintain the Bedford and Brockton facilities specifically.

Following the presentation of public comments at the second LAP meeting, the LAP conducted its deliberation on the BPOs presented by Team PwC. The following table presents the results of LAP deliberations at the second public meeting on the BPOs being considered for further study in Stage II:

Table 147: LAP Meeting 2 BPO Recommendations

BPO	Label	Recommended by the LAP for Further Study?
1	Baseline	Yes
2	Consolidate all Services at West Roxbury; Reuse Bedford, Brockton, and Jamaica Plain; Build CBOC at Brockton	No
3	Consolidate all Services at Jamaica Plain; Reuse Bedford, Brockton, and West Roxbury; Build CBOC at Brockton	No
4	Consolidate all Services at Brockton; Reuse Bedford, West Roxbury, and Jamaica Plain; Build CBOC at New Urban Location	No
5	Consolidate all Services at New Urban Campus; Reuse Bedford, Brockton, West Roxbury, and Jamaica Plain; Build CBOC at Brockton	No
6	Consolidate Jamaica Plain at West Roxbury; Reuse Jamaica Plain; Right-Size West Roxbury, Brockton, and Bedford	Yes

BPO	Label	Recommended by the LAP for Further Study?
7	Build New Acute Care and Research Facility at Urban Location; Right-Size Bedford and Brockton; Reuse Jamaica Plain and West Roxbury	Yes
8	Consolidate Bedford at Brockton; Right-Size Jamaica Plain and West Roxbury; Build New CBOCs at Urban Location and North Shore	No
9	Consolidate Bedford and Brockton at West Roxbury; Consolidate Inpatient, Ambulatory Care, and Research at Jamaica Plain; Build New CBOCs at North Shore and South Shore	No
10[26]	Consolidate West Roxbury at Jamaica Plain; Reuse West Roxbury; Right-Size Brockton and Bedford	Yes

Overall at the second public meeting the LAP shared the concerns of the public with regard to maintaining services and addressing veterans' access and travel-time concerns. The LAP agreed that right-sizing of the campuses is necessary, but that the Bedford and Brockton facilities should not be consolidated. The LAP added BPO 10 to explore the possibility of consolidating West Roxbury to Jamaica Plain while right-sizing the Bedford and Brockton campuses and adding a CBOC in an urban area near West Roxbury.

Summary of LAP Meeting 3 Stakeholder and LAP Input

A third period for submitting electronic or written comments on the Boston BPOs began July 28, 2006 on the day of the Secretary's study announcement for Stage II, and ended on October 2, 2006, 14 days after the third LAP meeting. Approximately 50 members of the public attended the third LAP meeting held on September 18, 2006. A total of 826 forms of stakeholder input (oral, written, and electronic) were received between July 28 and October 2, 2006. The concerns of stakeholders who submitted general comments are summarized in the following table:

[26] New BPO added by the LAP

Table 148: General Stakeholder Concerns for Stakeholder Input Period 3

Key Concern	Total Times Stakeholders Voiced General Concerns	Percentage of Total General Concerns Voiced
Access	751	32%
Healthcare Services & Providers	767	33%
Adequate Facilities	35	1%
Use of Facility	2	0%
Research & Education	4	0%
Other	794	34%

Stakeholders overwhelmingly voiced the most concern about issues relating to access to healthcare services, possible changes in healthcare services and providers, and other general concerns.

Similar to Stage I, during Stage II stakeholders were provided a comment form that described the options being studied in Stage II. This comment form was available electronically on the VA CARES project website (www.va.gov/CARES) as well as in paper form at the third LAP public meeting, and asked stakeholders to indicate if they have any of the concerns defined in the following table for each option:

Table 149: Comment Form Categories of Stakeholder Concern for each BPO

Category of Concern	Definition
Access	Do you have concerns about the travel time to the healthcare facility if this option is selected?
Healthcare Services & Providers	Do you have concerns about a possible change in what services are available or who provides them?
Adequate Facilities	Do you have concerns about whether option would provide a modern facility capable of meeting healthcare demands in th future?
Use of Facility	Do you have concerns about whether this option makes good use of existing land and buildings?
Research & Education	Do you have concerns about changes to research or education programs at the facility?

Of the 826 forms of stakeholders input received during the input collection period, 28 of those were electronic and paper comment forms specific to the Stage II study options. This is because the majority of the input received consisted of form letters voicing opposition to the potential consolidated of the Bedford VAMC at Brockton. The feedback received from the 28 comment forms is summarized in the following table.

Table 150: LAP Meeting 3 Stakeholder Comment Form Results - Number of Concerns

Number of Concerns by BPO				
Concerns	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Access	6	18	18	19
Healthcare Services & Providers	8	19	18	19
Adequate Facilities	9	19	18	18
Use of Facility	9	18	18	18
Research & Education	6	17	17	17
Total Concerns:	**38**	**91**	**89**	**91**

During the input period for the third LAP meeting fewer stakeholders chose the comment form as their method of providing input to the study than during the input period for the second LAP meeting. The 28 stakeholders who used this method expressed an almost equal amount of concerns about BPOs 8, 10 and 11. Stakeholders expressed the fewest number of concerns overall about BPO 1 which maintains all four facilities. For BPO 1 stakeholders expressed the most concerns about Adequate Facilities (concerns about whether option would provide a modern facility capable of meeting healthcare demands in the future) and Use of Facilities (concerns about whether this option makes good use of existing land and buildings) and the least concerns about Access (concerns about the travel time to the healthcare facility) and Research and Education (concerns about changes to research or education programs at the facility). For BPOs 8, 10 and 11, stakeholder concerns were fairly evenly distributed among all concern categories. The comment forms indicate that there is unease about possible consolidation of the Boston area facilities.

A considerable number of veterans, veteran advocates, elected officials, and other interested parties provided oral and written testimony at the third LAP meeting, and also sent in written input to the VA CARES central mailstop. This testimony along with other written input conveyed the stakeholder view that they greatly value the Boston area facilities and desire to maintain services. Most commonly stakeholders discussed access issues, potential effects on staffing, and disruption of patients as reasons to maintain current facilities. Although most stakeholders did not directly voice preference for a particular option, input received indicates that they would most be most supportive of the baseline option (BPO 1) that maintains services at all facilities.

Stakeholders were most vocal about their opposition to the potential closing of the Bedford VAMC. Various organized letter-writing campaigns produced hundreds of letters from stakeholders with this message. The largest campaign produced 699 form letters received from stakeholders that conveyed the message, "We do not want our veterans moved from their home to a facility 40 miles away". The following is an excerpt from the letter:

"The veterans currently at the Bedford VA are in danger of being 'consolidated' to the Brockton VA. We believe this is a disservice to move these patients away from the excellent care they are now receiving. The current proposals being discussed will force veterans to be moved away from their family members almost 40 miles. For most family members this is an incredible hardship and will decrease the amount of time they can visit with their loved ones; daily visits will not be the norm anymore. This, in turn, ***will diminish*** the patients' quality of life. THIS IS NOT WHAT WE WANT FOR OUR FAMILY MEMBERS. THIS IS A BAD HEALTHCARE DECISION FOR OUR LOVED ONES."

Other stakeholders organized a different letter-writing campaign that also voiced opposition to the closing of the Bedford hospital. This campaign was smaller scale, as 23 letters were received. The following is an excerpt from the letter:

"About two or more years ago, the Veterans Administration and its 'Capital Assets Realignment' committee were discouraged from moving in-patient units from our Bedford V.A. Hospital to Brockton or some other area hospital … Nothing has changed since that time, except that the Bedford V.A. Hospital, like all other hospitals, institutional buildings, and even people are at least two years older. Otherwise, the strong opposition to such a change still exists. Daily and/or weekly visits from family members and friends would become difficult to impossible."

Input was received from stakeholders who emphasized the importance of maintaining the Bedford GRECC program and specifically the Alzheimer's unit. Thirteen form letters were received with the following message:

"I am very concerned that you might be thinking of closing the Alzheimer's Unit at the Bedford Veteran's Hospital. This is a medical facility in this area. Please consider keeping it open. Moving the unit would cause additional stress to those who are housed in this unit, they do not adjust to change willingly."

Another noteworthy piece of stakeholder input received was a letter to the LAP members from the Congress of the United States signed by the Massachusetts US Senators Edward Kennedy and John Kerry, and the Massachusetts Congressmen Edward Markey, Barney Frank, Richard Neal, John Olver, Martin Meehan, John Tierney, James McGovern, Michael Capuano, William Delahunt, and Stephen Lynch. This letter opposes consolidating Bedford services at Brockton, consolidation of the Jamaica Plan and West Roxbury facilities, and potential closure of the Causeway Street Outpatient Clinic. The following is an excerpt from that letter:

"With soldiers returning home every day from Iraq and Afghanistan, we believe now is the wrong time to assume improved overall care can be provided to our veterans by limiting their options of obtaining services. As such, we cannot support any of the Stage II options that will not verifiably enhance the quality of care veterans currently receive in Massachusetts and we respectfully request you do the same."

Summary of LAP Meeting 4 Stakeholder and LAP Input

A fourth and final period for submitting electronic or written comments on the Boston BPOs began August 31, 2007 on the day that the Stage II Preliminary Report was posted to the website and released to the public, and ended on October 1, 2007, 14 days after the fourth LAP meeting. Fewer stakeholder submitted input during this period than during the second and third LAP meeting input periods. Approximately 40 members of the public attended the fourth LAP meeting held on September 17, 2007, and a total of 71 forms of stakeholder input (oral, written, and electronic) were received between August 31 and October 1, 2007.

During the fourth LAP meeting the Special Assistant to the Secretary for CARES presented proposed alternatives to the BPOs from the Secretary that included the following features:

- The Alzheimer's Program, Nursing Home, GRECC and Outpatient Services stay on the Bedford Campus in new state of the art facilities.
- Use the Enhanced Use Leasing Program to develop a creative collaboration with the private sector to use the balance of the Bedford campus for services to veterans such as a continuing retirement care community, assisted living facilities and other compatible services.
- Consolidate inpatient mental health services at the Brockton campus from Bedford: long term psychiatry, domiciliary, rehabilitation services. This includes long-term psychiatry, domiciliary and rehabilitation services.
- Create state of art facilities at Brockton including new long term care and chronic SCI&D resulting improved continuity/quality through integration of acute and intermediate and long term mental health services.
- Consider the consolidation of Jamaica Plain and West Roxbury as a separate option. Full modernization of West Roxbury as planned in other options.
- Complete the integration of these facilities and modernize the consolidated campus at West Roxbury.

A few of those stakeholders in attendance at the fourth LAP meeting commented on these new alternatives which were also posted to the public website following the LAP meeting. The majority of input received however did not reference these new alternatives, and the table below summarizes general stakeholders comments received during this period.

Table 151: General Stakeholder Comments for Stakeholder Input Period 4

Comment Topic	Total Times Stakeholders Voiced General Comments	Percentage of Total General Comments Voiced
Adequate Facilities	3	4%
Availability of Care	26	35%

Access	21	28%
Research and Education	1	1%
Use of Facility	2	3%
Other	21	28%

Most of the general stakeholder comments referenced topics related to the Availability of Care as well as Access to services.

A comment form similar to the one used during earlier input periods was available to stakeholders for the fourth LAP meeting describing the options being studied in Stage II. This comment form was available electronically on the VA CARES project website (www.va.gov/CARES) as well as in paper form at the fourth LAP public meeting, and it invited stakeholders to indicate support for each option and if they agree with the following attributes of each option.

Table 152: LAP Meeting 4 Comment Form Results - Stakeholder Support for BPOs

Category of Support	Definition
Adequate Facilities	The option will provide modern facilities that will meet future healthcare needs.
Availability of Care	The option will make care received more convenient.
Access	The option will maintain or improve travel time to the healthcare facilities.
Research and Education	The option will benefit research or education programs at the facilities.
Use of Facility	The option will make good use of land and facilities.
Other	Any other reason to support or not support this option.

Since the comment form was released prior to the fourth LAP meeting this form did not include the newly proposed Secretary's alternatives presented at the fourth LAP meeting. Of the 71 forms of stakeholder input received during the input collection period, 33 of those were electronic and paper comment forms specific to fourth input period. The feedback received from the 33 comment forms is summarized in the following tables:

Table 153: LAP Meeting 4 Comment Form Results - Categories Stakeholder Support for BPOs

Support by BPO					
Stakeholder Support		**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Stakeholders who support the BPO	Number	18	7	4	5
	% of Total Forms (33)	55%	21%	12%	15%
Stakeholders who do not support the BPO	Number	10	19	24	23
	% of Total Forms (33)	30%	58%	73%	70%

Table 154: LAP Meeting 4 Categories Stakeholder Support for BPOs

Reasons why stakeholders support the BPOs				
Categories of Support	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Adequate Facilities	21	10	7	7
Availability of Care	20	6	3	6
Access	18	6	3	6
Research and Education	21	8	5	8
Use of Facility	19	7	4	8
Other	1	0	0	0
Total:	**100**	**37**	**22**	**35**

The 33 stakeholders who used the comment form to provide input expressed by far the most support for BPO 1, the Baseline Option. Stakeholder indicated that they support BPO 1 because it maintains all four Boston area facilities. Stakeholders expressed the least support for BPOs 10 and 11, which both consolidate Bedford at Brockton and also consolidate West Roxbury and Jamaica Plain. As indicated at previous LAP meetings, these results suggest that there is unease about possible consolidation of the Boston area facilities.

Eleven veterans, veteran advocates, and other interested parties provided oral testimony at the fourth LAP meeting. Generally, stakeholders who provided input did not comment specifically on the Stage II BPOs. The testimony and other written input received conveyed several notable stakeholder viewpoints including resistance to the closing of any of the facilities as well as the need for a CBOC in the Plymouth area. These notable stakeholder viewpoints are represented by the following excerpts from input received:

> "I cannot support any proposal that will reduce health care services or access to health care for our veterans. The men and women serving America across the globe have made so many sacrifices already. To have access to the very best health care when they return is their right. Adopting any recommendation other than Option 1 will result in decreased access to care." - Excerpt from letter received from Congressman William Delahunt

> "I urge VA CARES to make a recommendation to keep all four medical facilities open because of vital medical care for veterans but I would urge the Veteran's Administration to make the vital upgrading and modernizing of these facilities for our injured and sick veterans a top priority." - Excerpt from letter received

"To Eliminate Bedford services for Senior Care, Primary Care, inpatient care & Nursing Home Care of those veterans and/or their families currently living West/Northwest of Boston, will create hardship. An elderly family member will not be able to get to Brockton easily---a long trip without easy transportation! Also to have to go to West Roxbury & Jamaica Plain difficult due to city traffic congestion. Also, Geriatric care is already at Bedford, so keeping the Nursing Care near Geriatric care makes sense. Primary care also important to maintain at this facility."
- Excerpt from comment form received

"At the end of Stage I the Secretary selected BPOs 8, 10, and 11 as well as the Baseline to move forward. The Stage II report shows that the LAP and stakeholders only supported the Baseline option. We have already gone through prior reviews that showed options 8, 10, and 11 are not the best choice. The Bedford facility plays a unique and pivotal role in Boston healthcare. Soldiers are returning from current conflicts and therefore we should not be considering closing facilities."
- Paraphrased excerpt from Congressman Tierney's Oral Testimony

"Many Plymouth residents are in need of veteran's services. These residents have been waiting a long time for a much needed CBOC. Unfortunately, this matter has, once again, become uncertain for them. A Veteran's CBOC could provide health care services to the well deserving Veterans of the greater Plymouth community."
-Excerpt from letter received from Therese Murray, President of the Senate, and State Representatives Vinny deMacedo and Thomas Calter

"I am writing you to express my support for a Community Based Outpatient Clinic in Plymouth, Massachusetts. As you probably know, Plymouth has a significant veteran population, many of whom are elderly. It is becoming increasingly burdensome for our many veterans in this area to travel to Brockton (a 45 minute drive - for those who can drive) for primary care services." - Excerpt from letter received

Summary

Aggregate analysis of the stakeholder and LAP feedback from the input periods surrounding the second and third LAP meetings input indicates the level of overall support as well as considerations for implementation of each of the BPOs studied in Stage II. Presented below are summaries of stakeholder and LAP support for each option.

Table 155: Stakeholder and LAP Support for Options

BPO	LAP MEETING 2	LAP MEETING 3	LAP MEETING 4
BPO 1: Baseline Option	**Stakeholder Input:**		
	▪ Stakeholders conveyed support for BPO 1 and remarked that they greatly value the Boston area facilities and desire to maintain services at all locations. ▪ The comment form results indicate that overall stakeholders most support BPO 1.	▪ Again stakeholders reiterated support for BPO 1 and remarked that they greatly value the Boston area facilities and desire to maintain services at all locations. ▪ The comment form results indicate that the fewest number of stakeholders expressed concerns regarding BPO 1.	▪ Although most stakeholder did not comment on specific BPOs, a few stakeholders expressed support for BPO 1 and remarked that they greatly value the Boston area facilities and desire to maintain services at all locations. ▪ The comment form results indicate the most support for BPO 1.
	LAP Input:		
	▪ The LAP members recommended that the Baseline option be studied in Stage II. ▪ Members of the LAP commented on the advantages of the baseline option such as access to healthcare services for Boston area veterans.	▪ The LAP was adamant that BPO 1 is the preferred option as it keeps services and programs at all facilities and maintains access to healthcare services for Boston area veterans. ▪ The LAP voted unanimously that BPO 1 is the only option that should be analyzed, focusing on right-sizing and reuse of the remainder of the campuses.	▪ The LAP was not in support of BPO 1 as it does not provide new, state of the art facilities. ▪ The LAP did comment that they support aspects of BPO 1 such as the GRECC and other key programs remaining at Bedford.
BPO 8: Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain	**Stakeholder Input**		
	▪ Stakeholders did not show support for BPO 8 because of the closure of the Bedford facility. ▪ Comment form input indicated that showed that the vote was close but overall stakeholders did not support BPO 8.	▪ Stakeholders did not show support for BPO 8 because of the closure of the Bedford facility. ▪ The comment form input indicates that stakeholders are almost equally concerned about BPOs 8, 10 and 11.	▪ Stakeholders did not show support for BPO 8 because of the closure of the Bedford facility. ▪ The comment form input indicates more support for BPO 8 than BPOs 10 and 11, but less support than BPO 1.
	LAP Input:		
	▪ The LAP recommended that BPO 8 should not be studied in Stage II. ▪ Several LAP members expressed concern about options that consolidate the Bedford and Brockton facilities.	▪ The LAP voiced opposition to this option because of the consolidation of services from Bedford to Brockton.	▪ The LAP was not in support of BPO 8 because of the consolidation of services from Bedford to Brockton.

BPO 10: Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**Stakeholder Input**		
	▪ Stakeholders expressed interest in options that maintain the Bedford and Brockton facilities. ▪ Because BPO 10 was added at the second LAP meeting, it was not included on the second LAP meeting comment form.	▪ Stakeholders expressed strong resistance to options that consolidate Bedford at Brockton. ▪ The comment form input indicates that stakeholders are almost equally concerned about BPOs 8, 10 and 11.	▪ Stakeholders did not show support for BPO 10 because of the closure of the Bedford and West Roxbury facilities. ▪ The comment form input indicates that stakeholders least support BPO 10.
	LAP Input		
	▪ The LAP members proposed BPO 10 to analyze the possibility of right-sizing Bedford and Brockton while consolidating West Roxbury to Jamaica Plain and adding a CBOC near West Roxbury.	▪ The LAP voiced opposition to this option because of the consolidation of services from Bedford to Brockton and the consolidation of services from West Roxbury to Jamaica Plain. The LAP expressed that all four facilities should remain open.	▪ The LAP was not in support of BPO 10 because of the consolidation of services from Bedford to Brockton.
BPO 11: Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain	**Stakeholder Input:**		
	▪ This option was added to the Stage II study by the Secretary and was not discussed by stakeholders at the second LAP meeting.	▪ Stakeholders expressed strong resistance to options that consolidate Bedford at Brockton. ▪ The comment form input indicates that stakeholders are almost equally concerned about BPOs 8, 10 and 11.	▪ Stakeholders did not show support for BPO 11 because of the closure of the Bedford and Jamaica Plain facilities. ▪ The comment form input indicates that fewer stakeholders support BPO 11 than BPOs 1 and 8.
	LAP Input:		
	▪ This option was added to the Stage II study by the Secretary and was not discussed with the LAP at the second LAP meeting.	▪ The LAP voiced opposition to this option because of the consolidation of services from Bedford to Brockton and the consolidation of services from Jamaica Plain to West Roxbury. The LAP expressed that all four facilities should remain open.	▪ The LAP was not in support of BPO 11 because of the consolidation of services from Bedford to Brockton. ▪ Some LAP members supported consolidation of Jamaica Plain at West Roxbury in new facilities for efficient provision of tertiary services.

During the LAP deliberations at the conclusion of the fourth LAP meeting the LAP Chair Joyce Murphy along with other LAP members made recommendations to adopt the Secretary's alternative option.

Implementation Considerations for BPOs:

Stakeholders and the LAP conveyed concerns regarding the BPOs that would need to be addressed for successful implementation of each option. These concerns were concentrated around four specific issues:

Access and Travel Time:
Many stakeholders as well as the LAP members expressed concerns regarding access and travel time for all options that consolidate services (BPOs 8, 10 and 11). If services are discontinued at Bedford, West Roxbury or Jamaica Plain, there is concern that travel time will be affected for many veterans making it more difficult for them to access services, and would impact the ability for patient family members and friends to visit veterans receiving treatment. For successful implementation of BPO 8, 10 or 11, stakeholders and the LAP agree that this issue must be considered.

Recruitment and Retention of Staff:
The LAP and stakeholders voiced concern about the effect that the "consolidation" options (BPOs 8, 10 and 11) may have on human resource issues such as staffing and recruiting at the hospitals. Consolidation of the Bedford, West Roxbury or Jamaica Plain facilities to other locations may reduce specialty staff and may have a detrimental affect on recruitment and retention. This issue should be considered for successful implementation of BPOs 8, 10 or 11.

Patient Disruption:
The LAP and stakeholders expressed concerns about disruption to patients that may occur as a result of consolidating services in BPOs 8, 10 and 11. Specifically, many stakeholders referenced the potential effect that a move from Bedford to Brockton may have on the patients of the GRECC program and other specialty programs that treat patients suffering from Alzheimer's, PTSD and other forms of mental illness. A successful implementation plan for these options should include provisions for minimizing patient disruption during the consolidation process.

Reuse of Land and Facilities:
One issue affecting all options is the topic of possible reuse of the land and facilities on all four campuses. The LAP articulated that the land should go to an appropriate use that is in line with VA's mission. This should be a consideration for successful implementation of all BPOs.

11.0 BPO Assessment Summary

The purpose of the Stage II evaluation process was to further compare and contrast the BPOs based upon more detailed analysis of several evaluation criteria. Working collaboratively with VA management, Team PwC developed five categories of evaluation criteria that were deemed appropriate for Stage II evaluation. These five categories of evaluation criteria are: Capital Planning, Reuse, Use of VA Resources, Ease of Implementation, and Ability to Support Other VA Programs. The following tables show the results of the comparative assessment of the BPOs against the evaluation criteria using a quantitative scale. The evaluation results were used by site teams and the expert panel to discuss the relative strengths and weaknesses of each BPO and to develop implementation plans.

Capital Planning Assessment

The Capital Planning Assessment involves four evaluation criteria with measurement indicators defined as the following:

1. **Timeliness of completion**
    - **Indicator:** Total duration (Years to complete)
        - The amount of time to complete construction of new or renovated facilities.
2. **Timeliness of urgent corrections:**
    - **Indicator:** Duration (Years to correct code deficiencies, focusing on seismic deficiencies as identified in the CAI)
        - The amount of time to complete safety improvements and render facilities compliant with modern seismic standards. Implements seismic corrections for buildings designated by VA as seismic non-exempt. Where seismic non-exempt buildings are not identified for occupancy in the BPO, these corrections will not be implemented.
3. **Consolidation of underutilized space:**
    - **Indicator:** Percentage of underutilized space
        - The extent to which campus space is used for healthcare delivery. Assesses the percentage variance between the projected ideal total campus BGSF and the projected BPO projected area. The projected BPO BSGF is a function of the facility condition assessment scores and quantity of the existing buildings altered in the BPO.
4. **Consolidation of vacant space:**
    - **Indicator:** Percentage of vacant space
        - The extent of vacant space remaining on campus at completion of the proposed construction.

The BPOs were assigned scores for each Capital Planning indicator based on the following evaluation scales:

Table 156: BPO Capital Planning Assessment

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Timeliness to Completion				
Bedford	-	3	3	3
Brockton	-	3	3	3
Jamaica Plain	-	3	2	2
West Roxbury	-	3	4	2
Total Duration				
Bedford	114 months	120 months	120 months	120 months
Brockton	114 months	120 months	120 months	120 months
Jamaica Plain	90 months	90 months	102 months	114 months
West Roxbury	114 months	114 months	90 months	126 months
Scale	1 = Significantly longer duration than the baseline BPO (>24 months longer) 2 = Longer duration than the baseline BPO (>6 and ≤ 24 months longer) 3 = Similar duration as the baseline BPO (+/- 6 months) 4 = Shorter duration than the baseline BPO (>6 and ≤ 24 months shorter) 5 = Significantly shorter duration than the baseline BPO (>24 months shorter)			
Narrative	BPO 8: The project duration for all 4 campuses is similar to the Baseline option. The 6-month increase in duration at the Bedford and Brockton sites in BPO 8 is needed to move patients from Bedford after construction and renovation at the Brockton campus is finished. BPO 10: The Bedford and Brockton campuses are consolidating at Brockton and the project durations for those sites are similar to the Baseline (with the additional 6 months for the move of patients). West Roxbury is consolidating at Jamaica Plain, which causes the Jamaica Plain duration to be longer than in Baseline as an additional year is required for renovations and patient move. Since no renovations are being completed at West Roxbury the duration is shorter than the Baseline. BPO 11: The Bedford and Brockton campuses are consolidating at Brockton and the project durations for those sites are similar to the Baseline (with the additional 6 months for the move of patients). Jamaica Plain is consolidating at West Roxbury, which causes the West Roxbury duration to be longer than in Baseline as an additional year is required for renovations and the move of patients from Jamaica Plain. Since the move from Jamaica Plain cannot occur until construction and renovation is completed at West Roxbury, the duration is longer than the Baseline.			
Timeliness of urgent seismic corrections				
Bedford	-	3	3	3
Brockton	-	4	4	4
Jamaica Plain	-	3	5	5
West Roxbury	-	3	5	4
Duration				
Bedford	N/A	N/A	N/A	N/A
Brockton	108 months	96 months	96 months	96 months

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Jamaica Plain	84 months	84 months	N/A[27]	N/A
West Roxbury	108 months	108 months	N/A	84 months
Scale	1 = Significantly longer duration than the baseline BPO (>24 months longer) 2 = Longer duration than the baseline BPO (>6 and ≤ 24 months longer) 3 = Similar duration as the baseline BPO (+/- 6 months) 4 = Shorter duration than the baseline BPO (>6 and ≤ 24 months shorter) 5 = Significantly shorter duration than the baseline BPO (>24 months shorter)			
Narrative	N/A indicates that there are no applicable non-exempt seismic buildings that will be occupied. Baseline has the longest duration for urgent seismic corrections across all sites with applicable non-exempt seismic buildings. This is because BPO 1 involves renovation of the most buildings. BPOs 8, 10 and 11 involve less renovation and more new construction at Brockton, requiring less time for urgent seismic corrections than the Baseline. In BPO 10 West Roxbury is consolidating at Jamaica Plain where a new tower will be built and therefore no seismic urgent corrections are required at either site. In BPO 11 Jamaica Plain is consolidating at West Roxbury which eliminates the need for urgent seismic corrections at Jamaica Plain. Since there will be some new construction at West Roxbury less time is required for urgent seismic corrections than the Baseline.			
Consolidation of underutilized space				
Bedford	-	5	5	5
Brockton	-	5	5	5
Jamaica Plain	-	3	5	5
West Roxbury	-	3	4	4
% of Underutilized Space				
Bedford	27%	0%	0%	0%
Brockton	25%	< 0%	< 0%	< 0%
Jamaica Plain	46%	43%	2%	0%
West Roxbury	18%	22%	0%	12%
Scale	1 = Significantly less reduction in underutilized space than the baseline BPO (>20% higher) 2 = Less reduction in underutilized space than the baseline BPO (>5 and ≤ 20% higher) 3 = Similar reduction in underutilized space as the baseline BPO (+/- 5%) 4 = Greater reduction in underutilized space than the baseline BPO (>5 and ≤ 20% lower) 5 = Significantly greater reduction in underutilized space than the baseline BPO (>20% lower)			
Narrative	BPOs 8, 10 and 11 consolidate services from Bedford at Brockton in both renovated and newly constructed space causing a significant reduction in underutilized space			

[27] All seismic non-exempt buildings will be demolished beginning in 2010 to facilitate new construction and therefore do not require seismic corrections.

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
	both at Bedford and Brockton campuses compared to Baseline. BPO 8 has a similar percentage of underutilized space at the Jamaica Plain and West Roxbury campuses as the Baseline, as services remain at both campus in BPOs 1 and 8. BPOs 10 and 11 consolidate services between West Roxbury and Jamaica Plain in newly constructed space, causing a greater reduction in underutilized space at West Roxbury and a significant reduction in underutilized space at Jamaica Plain compared to the Baseline.			
Consolidation of vacant space				
Bedford	-	4	4	4
Brockton	-	5	5	5
Jamaica Plain	-	5	5	5
West Roxbury	-	1	3	1
% Change in Vacant Space				
Bedford	91% decrease	100% decrease	100% decrease	100% decrease
Brockton	40% decrease	100% decrease	100% decrease	100% decrease
Jamaica Plain	1534% increase	1340% increase	100% decrease	100% decrease
West Roxbury	0% change	>100% increase	0% change	>100% increase
Scale	1 = Significantly less reduction in vacant space than the baseline BPO (>20% higher) 2 = Less reduction in vacant space than the baseline BPO (>5 and ≤ 20% higher) 3 = Similar reduction in vacant space as the baseline BPO (+/- 5%) 4 = Greater reduction in vacant space than the baseline BPO (>5 and ≤ 20% lower) 5 = Significantly greater reduction in vacant space than the baseline BPO (>20% lower)			
Narrative	In BPOs 8, 10 and 11 there is a greater reduction in vacant space at Bedford compared to the Baseline because in these options Bedford is consolidating at Brockton and all vacant space at Bedford is eliminated. Additionally, for BPOs 8, 10 and 11 there is a significant reduction in vacant space at Brockton compared to the Baseline because Brockton absorbs the workload from Bedford, thus eliminating vacant space at that campus. In the Baseline and BPO 8 there is a large increase in vacant space at Jamaica Plain caused by a decrease in required square footage due to a projected decrease in demand for services. In BPO 8 there is less of an increase in vacant space due to making Building 9 available for reuse. In BPO 10 Jamaica Plain is absorbing the workload from West Roxbury, eliminating vacant space at both campuses. In BPO 11 West Roxbury is absorbing the workload from Jamaica Plain, eliminating the vacant space at Jamaica Plain. In BPOs 1 and 10 there is no vacant space at West Roxbury, however in BPOs 8 and 11 there is an increase in vacant space as some residual square footage will be left in the existing buildings after renovations and new construction occurs. The increase in vacant space at West Roxbury is over 10,000 BGSF more in BPO 8 as in BPO 11.			

Reuse Assessment

The Reuse Assessment involves four evaluation criteria with measurement indicators defined as the following:

1. **Market potential for reuse:**
    - **Indicator:** Market potential for reuse
        - Reflects the strength of the local real estate market. Gauges the market appeal of each BPO as well as the overall market appetite for similar projects.
2. **Financial feasibility:**
    - **Indicator:** Financial feasibility
        - The total cash flows each BPO will yield to VA. The financial feasibility utilizes market data to determine a value for each BPO and to generate projected net reuse cash flows for each BPO. A range of financial factors will be considered including demolition costs, capital market conditions, required VA investments, etc.
3. **VA mission enhancement:**
    - **Indicator:** VA mission enhancement
        - A qualitative assessment of how the overall reuse solution may support VA mission. This can include the degree of compatibility that the reuse option has with the existing Medical Center activities, the existence of synergies that benefit both parties, and other potential complimentary elements of the BPO.
4. **Execution Risk:**
    - **Indicator:** Execution Risk
        - The level of complexity and risk required from a real estate perspective to accomplish the deal and deliver the cash flows presented in the highest and best use and financial feasibility option analysis. It encompasses risk factors associated with both market and financial issues, taking into account the local context.

The BPOs were assigned scores for each Reuse indicator based on the following evaluation scales:

Table 157: BPO Reuse Assessment

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Market potential for reuse	N/A	4	4	4
Scale	1 = Reuse would not be well received by the market 2 = Market is weak for reuse 3 = Market is adequate for reuse 4 = Market exhibits strength 5 = Market is very strong for reuse			
Narrative	In BPO 8 there is growing demand for elderly housing in suburban areas of Boston, and both the 100-unit senior housing development and assisted living facility have strong market support and revenue generating potential. In BPO 10 elderly housing development on the Bedford site has strong market support. While the retail market in West Roxbury is soft, existing market demand, combined with projected steady growth in housing, can support the proposed convenience retail center. In BPO 11 elderly housing development on the Bedford site has strong market support. Enhanced lease restrictions of the VA preclude land sale for housing development and prevent the redevelopment program for the Jamaica Plain campus from capturing the full market demand. The high vacancy rate for convenience-oriented retail, combined with the limited surrounding uses, creates limited market support for the proposed 15,000 SF retail development.			
Financial feasibility	N/A	4	4	3
Scale	1 = Transaction expected to result in negative cash flow 2 = Transaction will generate less than satisfactory cash flows 3 = Transaction will generate marginal cash flows 4 = Transaction will generate material cash flows 5 = Transaction will generate significant cash flows			
Narrative	In BPO 8 the proposed elderly housing development at the Bedford campus creates a large up-front injection of equity that generates material cash flows to the project. In BPO 10 the proposed elderly housing development at the Bedford campus creates a large up-front injection of equity that generates material cash flows to the project. The PwC Team estimates that the proposed 35,000 SF retail development on the West Roxbury campus will generate approximately an additional 25% more annual revenue than BPO 8. In BPO 11 the proposed elderly housing development at the Bedford campus creates a large up-front injection of equity that generates material cash flows to the project. The PwC Team estimates that the proposed 15,000 SF retail development on the Jamaica Plain campus will generate marginally more annual revenue.			
VA mission enhancement	N/A	4	2	2

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Scale	1 = Least compatible with / provides least enhancement of VA mission 2 = Less compatible with / provides less enhancement of VA mission 3 = Similar compatibility / enhancement of VA mission as other BPOs 4 = More compatible with / provides more enhancement of VA mission 5 = Most compatible with / provides best enhancement of VA mission			
Narrative	In BPO 8 elderly housing and assisted living conform directly to the mission of the VA by efficiently re-using reclaimed campus land, serving a market need, and generating material revenue. In BPO 10 elderly housing and assisted living conform directly to the mission of the VA by efficiently re-using reclaimed campus land, serving a market need, and generating material revenue. Retail program may not be consistent with the mission of the VA although it provides revenue through the site's most viable use. Additionally much of the campus is left unused. In BPO 11 elderly housing and an assisted living conform directly to the mission of the VA by efficiently re-using reclaimed campus land, serving a market need, and generating material revenue. Retail program may not be consistent with the mission of the VA although it provides revenue through the site's most viable use. Additionally much of the campus is left unused.			
Execution risk	N/A	4	3	2
Scale	1 = Option presents barriers that cannot be resolved 2 = Option presents significant obstacles that may not be resolvable 3 = Option may present obstacles that are resolvable with some difficulty 4 = Option may have some obstacles, but they should be reasonably resolvable 5 = Option presents no significant obstacles or barriers to execution			
Narrative	In BPO 8 the complexity of the elderly housing development project carries several obstacles to successful implementation, however by working with an experienced local developer and the community, execution risk can be minimized. In BPO 10 softness in the West Roxbury convenience retail market suggests that a developer might need to offer rent concessions in order to attract suitable tenants. In BPO 11 high vacancy rates in the convenience-oriented retail market in the Roxbury/Dorchester area indicate that there is substantial market risk associated with the proposed new retail development.			

Use of VA Resources Assessment:

The Use of VA Resources Assessment involves three evaluation criteria with measurement indicators defined as the following:

1. **Total operating costs:**
    - **Indicator:** Total operating costs ($)
        - Total operating costs in $ including direct variable, fixed direct, and fixed indirect costs associated with a BPO. Operating costs are aggregated for the 30-year study period.
2. **Total capital investment costs:**
    - **Indicator:** Total capital investment costs ($)
        - Total capital investment costs in $ for each BPO over the 30-year study period.
3. **Net present cost:**
    - **Indicator:** Net present cost ($)
        - Annual cash outflow discounted using the overall discount rate so that a particular BPO's cash outflows can be valued on a relative basis as compared to other BPOs.

The BPOs were assigned scores for each Use of VA Resources indicator based on the following evaluation scales:

Table 158: BPO Use of VA Resources

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Total operating costs	-	3	4	4
Actual Value	10.96B	10.70B	10.19B	10.26B
Scale	1 = Financial analysis metric for the BPO is greater than 114% of the baseline BPO 2 = Financial analysis metric for the BPO is 105 - 114% of the baseline BPO 3 = Financial analysis metric for the BPO is 95 - 104% of the baseline BPO 4 = Financial analysis metric for the BPO is 85 - 94% of the baseline BPO 5 = Financial analysis metric for the BPO is less than 85% of the baseline BPO			
Narrative	Relatively speaking, BPOs 10 and 11 achieve at least 5% savings in operating costs compared to the Baseline. BPO 8 achieves only slight savings in operating costs compared to Baseline. BPO 10 and 11 have the lowest operating cost because these options allow a higher degree of consolidation than BPOs 1 and 8.			
Total capital investment costs	-	4	4	5
Actual Value	1.50B	1.38B	1.38B	1.27B

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Scale	1 = Financial analysis metric for the BPO is greater than 114% of the baseline BPO 2 = Financial analysis metric for the BPO is 105 - 114% of the baseline BPO 3 = Financial analysis metric for the BPO is 95 - 104% of the baseline BPO 4 = Financial analysis metric for the BPO is 85 - 94% of the baseline BPO 5 = Financial analysis metric for the BPO is less than 85% of the baseline BPO			
Narrative	Baseline has the highest capital investment cost. BPOs 8 and 10 have capital investment costs that are more than 5% less than the Baseline. BPO 11 has the lowest capital investment cost at more than 15% less than Baseline because it involves a higher degree of new construction to achieve consolidation. Comparatively, BPO 10 is more costly because of site constraints at Jamaica Plain.			
Net present cost	-	3	4	4
Actual Value	12.56B	12.13B	11.62B	11.57B
Scale	1 = Financial analysis metric for the BPO is greater than 114% of the baseline BPO 2 = Financial analysis metric for the BPO is 105 - 114% of the baseline BPO 3 = Financial analysis metric for the BPO is 95 - 104% of the baseline BPO 4 = Financial analysis metric for the BPO is 85 - 94% of the baseline BPO 5 = Financial analysis metric for the BPO is less than 85% of the baseline BPO			
Narrative	The net present cost of the baseline is between $430M and $990M more than the alternate BPOs. This is due to significantly higher operating costs over the 30 year period and a higher capital investment cost for the baseline.			

Ease of Implementation

The Boston Ease of Implementation Assessment involves two evaluation criteria with measurement indicators defined as the following:

1. **Academic affiliations / education:**
    - **Indicators:**
        - Number of research programs impacted:
            - The number of research programs (as defined either by disease focus or patient population, as data allows) expected to be negatively impacted due to the change in services provided, facilities, or location.
        - Percentage of annual research budget impacted:
            - The percentage of total research budget (as defined by research expenditures for a given fiscal year) expected to be negatively impacted due to the change in services provided, facilities, or location.
        - Number of residency programs and residents impacted:

        - The number of residency programs (as defined by medical specialty) and total number of resident positions expected to be negatively impacted due to the change in services provided, facilities, or location.
        - Number of faculty with dual appointments impacted
    - The number of faculty with appointments at both the VAMC and affiliate organizations that would be negatively impacted due to the change in services provided, facilities, or location.

2. **HR / staffing:**
    - **Indicators:**
        - Change in staff (FTEEs):
            - The net change in the number of staff expected for the BPO.
        - Number of staff required to change job site (FTEEs):
            - The total number of staff that will be required to change working locations and thus commutes.
3. **Reuse considerations:**
    - **Indicators:**
        - Community Support:
            - A qualitative assessment reflecting the degree of community support for the option. This includes the potential use of the option and how that fits with what the community perceives as its needs. Community support also reflects political support or opposition to each option.
        - Legal / regulatory
            - This captures all legal and regulatory issues faced by each option, including zoning, environmental, historic considerations, title encumbrances and any other site restrictions that may impact the option.
4. **Capital planning considerations:**
    - **Indicators:**
        - Size and complexity of capital plan
            - This captures four indicators of the extent to which campus facilities will be impacted by the capital plans for a given BPO: The number of capital projects associated with the BPO; the percentage campus area change as projected by the BPO; the total duration of the capital projects; and the overall capital investment cost for the BPO.
        - Number and frequency of patient moves (quantity of clinical buildings altered)
            - The extent to which clinical buildings will be impacted by the capital plans for a given BPO. Provides an assessment of the total quantity of buildings altered in the BPO where patients (clinical space) are impacted. It assumes that any construction activities in existing buildings will disrupt typical patient care activities and

these activities will require relocation to maintain acceptable levels of patient satisfaction.

- Number of historic buildings altered (total historic buildings altered)
  - The extent to which there are historical considerations in implementing the capital plans for a given BPO. Assesses the total quantity of historic buildings altered in the BPO.

The BPOs were assigned scores for each Ease of Implementation indicator based on the following evaluation scales. Each indicator was given a score for "Negative Impact" as well as "Likelihood of Negative Impact":

Table 159: BPO Ease of Implementation Assessment

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Academic Affiliations/Education: Number of research programs impacted (31 unique research programs located at 47 research program sites)				
Number of Research Programs Impacted	0	10	42 total (19 permanent, 23 temporary)	33
Score for Negative Impact	5	3	1	1
Scale for Negative Impact	1 = High potential negative impact (19 or more programs impacted) 3 = Medium potential negative impact (10-18 programs impacted) 5 = Low potential negative impact (0-9 programs impacted)			
Score for Likelihood of Negative Impact	3	1	1	1
Scale for Likelihood of Negative Impact	1 = High likelihood of occurrence of negative impact 3 = Medium likelihood of occurrence of negative impact 5 = Low likelihood of occurrence of negative impact			
Narrative	BPOs 10 and 11 both have high potential for negative impact to research programs. In BPOs 10 and 11 Jamaica Plain and West Roxbury are consolidating thereby moving the highest amount of research programs away from affiliates. Potential collaborators included in these programs are three national programs as well as an animal research facility. In BPOs 8, 10 and 11 Bedford is consolidating at Brockton thereby moving the GRECC, MIRECC and animal research programs to Brockton. Research programs at West Roxbury and Jamaica Plain also include wet labs and animal research, therefore BPOs 8, 10 and 11 have a high likelihood of negative impact because in these BPOs research facilities are relocated. Additionally, BPOs 8, 10 and 11 may cause an increase in commute for research staff.			
Academic Affiliations/Education: % Annual Research Budget Impacted				
% of Annual Research Budget Impacted	0%	24%	34%	79%
Score for Negative Impact	5	3	3	1
Scale for Negative	1 = High potential negative impact (75% or more of annual research budget impacted)			

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Impact	3 = Medium potential negative impact (20% to 75% of annual research budget impacted) 5 = Low potential negative impact (0% - 20% of annual research budget impacted)			
Score for Likelihood of Negative Impact	5	3	3	1
Scale for Likelihood of Negative Impact	1 = High likelihood of occurrence of negative impact 3 = Medium likelihood of occurrence of negative impact 5 = Low likelihood of occurrence of negative impact			
Narrative	In the Baseline option all four facilities are maintained and therefore none of the annual research budget is impacted. For BPOs 8, 10 and 11 Bedford is consolidating at Brockton which impacts the 24% of the annual research budget currently allocated to active protocols at Bedford. For BPO 10 West Roxbury is consolidating at Jamaica Plain which impacts the additional 10% of the annual research budget currently allocated to active protocols at West Roxbury. Alternatively, for BPO 11 Jamaica Plain is consolidating at West Roxbury which impacts the additional 55% of the annual research budget currently allocated to protocols at Jamaica Plain.			
Academic Affiliations: Number of residency programs and residents impacted				
Number of resident slots impacted (264 total resident slots)	0	34	199 total (161 permanent / 38 temporary)	88
Score for Negative Impact	5	5	1	3
Scale for Negative Impact	1 = High potential negative impact (67% - 100% of total resident slots impacted) 3 = Medium potential negative impact (34% - 66% of total resident slots impacted) 5 = Low potential negative impact (0 - 33% of total resident slots impacted)			
Score for Likelihood of Negative Impact	5	3	3	1
Scale for Likelihood of Negative Impact	1 = High likelihood of occurrence of negative impact 3 = Medium likelihood of occurrence of negative impact 5 = Low likelihood of occurrence of negative impact			
Narrative	In the Baseline all four facilities are maintained and therefore no residents are impacted giving the option low potential for negative impact. BPO 8 consolidates Bedford to Brockton but also has low potential for negative impact because less than 33% of total resident slots are impacted. In BPOs 8, 10 and 11, 15 residents on the Bedford campus will be impacted by the consolidation to Brockton. Additionally in BPO 8, 19 residents involved with ambulatory surgery and related specialties at the Jamaica Plain campus will be moved to West Roxbury. In BPO 10 all of the residency programs at West Roxbury will be moved to Jamaica Plain impacting an additional 146 residents. Additionally, another 38 resident slots would be temporarily impacted at Jamaica Plain in BPO 10 during the construction period of the new tower. During this four year period, some of the ambulatory specialty services will need to be contracted for in the community, thereby impacting the ability of the facility to provide training to residents. In BPO 11 all of the residency programs at Jamaica Plain will be moved to West Roxbury impacting an additional 73 residents. BPO 11 has the highest likelihood of negative impact because Jamaica Plain residents are being moved farther away from affiliates.			
Academic Affiliations: Number of faculty with dual appointments impacted				

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Number of faculty with dual appointments impacted (329 total faculty with dual appointments)	0	103	196 total (152 permanent / 44 temporarily)	165
Score for Negative Impact	5	5	3	3
Scale for Negative Impact	1 = High potential negative impact (67% - 100% of total faculty with dual appointments impacted) 3 = Medium potential negative impact (34% - 66% of total faculty with dual appointments impacted) 5 = Low potential negative impact (0 - 33% of total faculty with dual appointments impacted)			
Score for Likelihood of Negative Impact	5	3	3	1
Scale for Likelihood of Negative Impact	1 = High likelihood of occurrence of negative impact 3 = Medium likelihood of occurrence of negative impact 5 = Low likelihood of occurrence of negative impact			
Narrative	In the Baseline all four facilities are maintained and therefore no faculty with dual appointments are impacted giving the option low potential for negative impact. In BPOs 8, 10 and 11, 42 faculty on the Bedford campus will be impacted by the consolidation to Brockton. Additionally in BPO 8, 61 faculty involved with ambulatory surgery and related specialties at the Jamaica Plain campus will be moved to West Roxbury. In BPO 10, all of the services at West Roxbury will be moved to Jamaica Plain impacting an additional 110 faculty. Additionally, another 44 faculty would be temporarily impacted at Jamaica Plain in BPO 10 during the construction period of the new tower. During this four year period, some of the ambulatory specialty services will need to be contracted for in the community, thereby impacting the need for staff (and thus faculty) to provide services. In BPO 11 all of the services at Jamaica Plain will be moved to West Roxbury impacting an additional 123 faculty. BPOs 8, 10 and 11 have moderate potential for negative impact based on volume of faculty affected. BPO 11 has a high likelihood of negative impact because a higher volume of faculty are being moved to a location that is farther away from affiliates.			
HR/Staffing: Change in staff (FTEEs)				
Change in staff (FTEEs)	0	0	335 temporarily	0
Score for Negative Impact	N/A	N/A	1	N/A
Scale for Negative Impact	1 = High potential negative impact (67% - 100% net change in FTEEs) 3 = Medium potential negative impact (34% - 66% net change in FTEEs) 5 = Low potential negative impact (0 - 33% net change in FTEEs)			
Score for Likelihood of Negative Impact	N/A	N/A	3	N/A
Scale for Likelihood of Negative Impact	1 = High likelihood of occurrence of negative impact 3 = Medium likelihood of occurrence of negative impact 5 = Low likelihood of occurrence of negative impact			
Narrative	Although services are reconfigured across the VAMCs and CBOCs in the study site, there are no changes in healthcare services. Therefore, it is assumed that there would be no change in the number of FTEEs required for BPOs 1, 8, and 11, other than the changes made in staffing to			

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
	support fluctuation in total utilization across the study site. In BPO 10, the current tower at Jamaica Plain will need to be demolished in order for the new tower to be erected in its place. During the four year construction period, it is assumed that some of the ambulatory specialty care will need to be contracted for in the community. Thus during this period, the staff required to provide services at the Jamaica Plain campus will temporarily decrease by approximately 335 staff.			
HR/Staffing: Number of staff required to change job site (FTEEs)				
Number of staff required to change job site (FTEEs) (3666 total FTEEs)	0	779	1,712	1,621
Score for Negative Impact	5	1	1	1
Scale for Negative Impact	1 = High potential negative impact (> 10% of total FTEEs) 3 = Medium potential negative impact (6% - 10% of total FTEEs) 5 = Low potential negative impact (0% - 5% of total FTEEs)			
Score for Likelihood of Negative Impact	5	1	1	1
Scale for Likelihood of Negative Impact	1 = High likelihood of occurrence of negative impact 3 = Medium likelihood of occurrence of negative impact 5 = Low likelihood of occurrence of negative impact			
Narrative	In the Baseline all four facilities are maintained and therefore no staff are required to change job site giving the option low potential for negative impact. In BPOs 8, 10 and 11 there is high potential for negative impact because more than 10% of total staff are required to change job site. BPOs 8, 10 and 11 have a high likelihood of occurrence of negative impact because Bedford is consolidating at Brockton. This requires staff residing north of the city to commute south of the city. Based on stakeholder and VA input this commute will create a burden on those VA employees residing north of the city and currently working at Bedford.			
Reuse Consideration: Community support				
Score for Negative Impact	NA	1	1	1
Scale for Negative Impact	For Community Support: 1 = Option has strong community resistance with at most limited support 2 = Option has greater community resistance than support 3 = Option has a balance of community support and resistance 4 = Option has greater community support than resistance 5 = Option has strong community support with at most limited resistance			
Score for Likelihood of Negative Impact	NA	1	1	1
Scale for Likelihood of Negative Impact	1 = Option has high likelihood of community resistance 3 = Option has moderate likelihood of community resistance 5 = Option has low likelihood of community resistance			
Narrative	There is strong community resistance to the reuse of the entire Bedford campus. Consequently, any reuse proposal for Bedford will encounter likely community opposition. There is also a strongly expressed view that vacant land and/or building space at each of the four locations should be directed to a use specific to veterans. Thus, the proposal to reuse land at Bedford for			

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
	assisted living and senior housing could encounter some initial community resistance. Proposed retail redevelopment at West Roxbury could encounter some initial community resistance.			
Reuse Consideration: Legal / regulatory				
Score for Negative Impact	N/A	5	5	4
Scale for Negative Impact	1 = Option has obstacles that cannot be resolved 2 = Option has significant obstacles that may not be resolvable 3 = Option may have obstacles that are resolvable with some difficulty 4 = Option may have some obstacles, but they should be reasonably resolvable 5 = Option has no significant legal/regulatory obstacles			
Score for Likelihood of Negative Impact	N/A	5	5	3
Scale for Likelihood of Negative Impact	For Legal and Regulatory: 1 = Option has high likelihood of encountering legal or regulatory obstacles 3 = Option has moderate likelihood of encountering legal or regulatory obstacles 5 = Option has a low likelihood of encountering legal or regulatory obstacles			
Narrative	Zoning restrictions on commercial and industrial uses at Jamaica Plain present some obstacles to the proposed retail ground lease at the Jamaica Plain campus.			
Capital Planning Considerations: Size and complexity of capital plan				
Campus Area Change				
Bedford	5%	-100%	-100%	-100%
Brockton	14%	5%	5%	5%
Jamaica Plain	-8%	-9%	29%	-100%
West Roxbury	1%	80%	-100%	121%
Duration				
Bedford	114 months	120 months	120 months	120 months
Brockton	114 months	120 months	120 months	120 months
Jamaica Plain	90 months	90 months	102 months	114 months
West Roxbury	114 months	114 months	90 months	126 months
Capital Project Costs (in millions of dollars)				
Actual Value	1.50B	1.38B	1.38B	1.27B
Score for Negative Impact				
Bedford	3	5	5	5
Brockton	3	1	1	1
Jamaica Plain	3	3	1	5
West Roxbury	3	3	5	1
Scale for Negative Impact	1 = High potential negative impact 3 = Medium potential negative impact 5 = Low potential negative impact			
Score for Likelihood of Negative Impact				
Bedford	3	1	1	1
Brockton	3	1	1	1
Jamaica Plain	5	5	5	3
West Roxbury	3	3	5	1

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Scale for Likelihood of Negative Impact	1 = High likelihood of occurrence of negative impact (> 119 months) 3 = Medium likelihood of occurrence of negative impact (105 - 119 months) 5 = Low likelihood of occurrence of negative impact (< 105 months)			
Narrative	The score for negative impact is based on the Campus Area Change as well as Capital Project Costs. Based on these factors Baseline has a moderate potential negative impact. In BPOs 8, 10 and 11 when Bedford is consolidating at Brockton there are high project costs for Brockton giving it a high potential negative impact. This is also true of Jamaica Plain in BPO 10 which absorbs the workload of West Roxbury, and West Roxbury in BPO 11 which absorbs the workload of Jamaica Plain. The score for likelihood of negative impact is based on the duration. In BPOs 8, 10 and 11 the duration at Brockton is over 119 months, and in BPO 11 the duration at West Roxbury is over 119 months causing high likelihood of occurrence for negative impact.			
Capital Planning Considerations: Number of historic buildings altered				
Number of Historic Buildings Altered (Buildings Renovated or Demolished)				
Bedford	52 (44)	52 (0)	52 (0)	52 (0)
Brockton	27 (20)	27 (5)	27 (5)	27 (5)
Jamaica Plain	6 (3)	6 (3)	6 (5)	6 (0)
West Roxbury	6 (6)	6 (4)	6 (0)	6 (6)
Score for Negative Impact				
Bedford	1	5	5	5
Brockton	1	5	5	5
Jamaica Plain	3	3	1	5
West Roxbury	1	1	5	1
Scale for Negative Impact	1 = High potential negative impact (67% - 100% historic or historically eligible buildings renovated and demolished of total historic or historically eligible buildings altered) 3 = Medium potential negative impact (34% - 66% historic or historically eligible buildings renovated and demolished of total historic or historically eligible buildings altered) 5 = Low potential negative impact (0% - 33% historic or historically eligible buildings renovated and demolished of total historic or historically eligible buildings altered)			
Score for Likelihood of Negative Impact				
Bedford	1	5	5	5
Brockton	1	3	3	3
Jamaica Plain	3	3	1	5
West Roxbury	5	1	5	1
Scale for Likelihood of Negative Impact	1 = High likelihood of occurrence of negative impact 3 = Medium likelihood of occurrence of negative impact 5 = Low likelihood of occurrence of negative impact			
Narrative	The score for negative impact is based on the percentage of historically or historically eligible buildings renovated and demolished of total historic or historically eligible buildings altered. In the Baseline all of the sites have high potential for negative impact based on historic or historically eligible buildings being renovated except Jamaica Plain which has moderate potential for negative impact. In BPOs 8 and 11, West Roxbury has high potential for negative impact and in BPO 10 Jamaica Plain has high potential for negative impact based on historic or historically eligible buildings being renovated or demolished. The score for likelihood of negative impact is based on the level of renovation or demolition			

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
	occurring to historic or historically eligible buildings. In Baseline Bedford and Brockton have a high likelihood of negative impact based on historic or historically eligible buildings needing high renovation. In BPOs 8 and 11 West Roxbury has a high likelihood for negative impact, and in BPO 10 Jamaica Plain has a high likelihood for negative impact based on historic or historically eligible buildings needing high renovation or being demolished.			
Capital Planning Considerations: Number and frequency of patient moves				
Score for Negative Impact				
Bedford	1	3	3	3
Brockton	1	3	3	3
Jamaica Plain	1	1	1	3
West Roxbury	1	3	3	1
Scale for Negative Impact	1 = High potential negative impact 3 = Medium potential negative impact 5 = Low potential negative impact			
Score for Likelihood of Negative Impact				
Bedford	1	1	1	1
Brockton	3	3	3	3
Jamaica Plain	5	3	3	3
West Roxbury	3	3	1	3
Scale for Likelihood of Negative Impact	1 = High likelihood of occurrence of negative impact (Inpatient move off-site) 3 = Medium likelihood of occurrence of negative impact (Inpatient move on-site or outpatient move off-site) 5 = Low likelihood of occurrence of negative impact (Outpatient move on-site)			
Narrative	The score for negative impact is based on the number of patient moves as well as the volume of patients being moved. In the Baseline at all sites, the extensive in-place renovations require multiple patient moves of a high volume of patients causing high potential for negative impact. In BPOs 8, 10 and 11 Bedford is consolidating at Brockton causing moderate potential for negative impact as a high volume of patients will move one time. In BPOs 8 and 10 a high volume of Jamaica Plain patients will incur multiple moves during extensive renovations and construction of a new tower in BPO 10 causing high potential for negative impact in those options. In BPO 11 there is high potential for negative impact at West Roxbury as again a high volume of patients will incur multiple moves during extensive renovations and construction. The score for likelihood of negative impact is based on the distance of the patient moves (off-site vs. on-site) and the type of patients being moved (inpatient vs. outpatient). At Bedford there is a high likelihood of negative impact across all BPOs because in the Baseline domiciliary patients need to be moved off-site temporarily during renovations, and in BPOs 8, 10 and 11 all Bedford patients move off-site to Brockton. There is also a high likelihood of negative impact at West Roxbury in BPO 10 as the inpatient population is being moved off-site to Jamaica Plain. Additionally in BPO 10, ambulatory services provided at Jamaica Plain would need to be relocated off of the Jamaica Plain campus during the construction of the new tower.			

Ability to Support Other VA Programs

The Use of Ability to Support Other VA Programs Assessment involves four evaluation criteria with measurement indicators defined as the following:

The BPOs were assigned scores for each Ability to Support Other VA Programs indicator based on the following evaluation scales:

1. **DoD sharing:**
   - **Indicator:** MOUs impacted by BPO
     - The extent to which Memoranda of Understanding with DoD partners (for sharing agreements) are enhanced by the BPO.
2. **One VA integration:**
   - **Indicator:** VBA and NCA impacted by BPO
     - The extent to which each BPO will enhance existing One-VA co-locations or facilitate the establishment of new co-locations.
3. **Specialized VA programs:**
   - **Indicator:** Specialized Care/Center of Excellence impacted by BPO
     - The extent to which the BPOs enhance specialized care (e.g., chronic spinal cord injury treatment, Alzheimer's treatment, etc.) or Centers of Excellence (e.g., GRECC, GEM, etc.) as defined by VA.
4. **Enhancement of services to veterans:**
   - **Indicator:** Services in kind
     - Extent to which each BPO directly and indirectly provides enhancement to VA services. This may often be achieved through providing in-kind services. In addition, this may be achieved through upgrading of general services on campus It may also involve uses that by proximity enhance the overall ability of the Center to off.

Table 160: BPO Ability to Support Other VA Programs Assessment

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
DoD sharing				
Bedford	-	2	2	2
Brockton	N/A	N/A	N/A	N/A
Jamaica Plain	N/A	N/A	N/A	N/A
West Roxbury	N/A	N/A	N/A	N/A
Scale	1 = The BPO has the potential to provide the least enhancement relative to the baseline BPO for the specific criterion			

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
	2 = The BPO has the potential to provide less enhancement relative to the baseline BPO for the specific criterion 3 = The BPO has the potential to provide enhancement equivalent to the baseline BPO for the specific criterion 4 = The BPO has the potential to provide more enhancement relative to the baseline BPO for the specific criterion 5 = The BPO has the potential to provide the most enhancement relative to the baseline BPO for the specific criterion			
Narrative	The golf course on the Bedford campus that is currently used and managed by DoD, may not be maintained depending upon the implementation of reuse of the Bedford campus in BPOs 8, 10 and 11 when Bedford is consolidated to Brockton.			
One VA integration				
Bedford	N/A	N/A	N/A	N/A
Brockton	N/A	N/A	N/A	N/A
Jamaica Plain	N/A	N/A	N/A	N/A
West Roxbury	N/A	N/A	N/A	N/A
Scale	1 = The BPO has the potential to provide the least enhancement relative to the baseline BPO for the specific criterion 2 = The BPO has the potential to provide less enhancement relative to the baseline BPO for the specific criterion 3 = The BPO has the potential to provide enhancement equivalent to the baseline BPO for the specific criterion 4 = The BPO has the potential to provide more enhancement relative to the baseline BPO for the specific criterion 5 = The BPO has the potential to provide the most enhancement relative to the baseline BPO for the specific criterion			
Narrative	There is neither a VBA nor a NCA office on any of the Boston study site campuses, and therefore there is no impact on One-VA Integration.			
Specialized VA programs				
Bedford	-	4	4	4
Brockton	-	4	4	4
Jamaica Plain	-	3	4	4
West Roxbury	-	3	4	4
Scale	1 = The BPO has the potential to provide the least enhancement relative to the baseline BPO for the specific criterion 2 = The BPO has the potential to provide less enhancement relative to the baseline BPO for the specific criterion 3 = The BPO has the potential to provide enhancement equivalent to the baseline BPO for the specific criterion 4 = The BPO has the potential to provide more enhancement relative to the baseline BPO for the specific criterion 5 = The BPO has the potential to provide the most enhancement relative to the baseline BPO for the specific criterion			

Evaluation Criteria	**BPO 1:** Baseline Option	**BPO 8:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.	**BPO 10:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury	**BPO 11:** Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain.
Narrative	In BPOs 8, 10 and 11 the GRECC and MIRECC programs will move from Bedford to Brockton. This move will concentrate the inpatient psychiatry and nursing home patients that may participate in these programs as well as benefit from services provided through the Brockton Center of Excellence for the Seriously Mentally Ill. Co-location of the GRECC, MIRECC and the Center of Excellence for the Seriously Mentally Ill may result in synergies between programs. In BPO 8, because there is limited movement of services between Jamaica Plain and West Roxbury, an equivalent level of enhancement for specialized programs is expected. In BPOs 10 and 11 Jamaica Plain and West Roxbury will consolidate which may allow for synergies to be realized between such programs such as West Roxbury's Cardiac Surgery program and Jamaica Plain's Congestive Heart Failure Center. Significant new construction in both options may provide for more ideal or better configurations for providing healthcare services or specialized programs.			
Enhancement of services to veterans				
Bedford	-	N/A	N/A	N/A
Brockton	-	4	4	4
Jamaica Plain	-	3	4	N/A
West Roxbury	-	3	N/A	4
Scale	1 = The BPO has the potential to provide the least enhancement relative to the baseline BPO for the specific criterion 2 = The BPO has the potential to provide less enhancement relative to the baseline BPO for the specific criterion 3 = The BPO has the potential to provide enhancement equivalent to the baseline BPO for the specific criterion 4 = The BPO has the potential to provide more enhancement relative to the baseline BPO for the specific criterion 5 = The BPO has the potential to provide the most enhancement relative to the baseline BPO for the specific criterion			
Narrative	In BPOs 8, 10 and 11 Bedford is consolidating at Brockton and therefore there is no enhancement of services to veterans at Bedford for those options. BPOs 8, 10 and 11 have the potential to enhance services for veterans at Brockton because more services, in particular geriatric and behavioral mental health, will be co-located on one campus. In BPOs 10 and 11 West Roxbury and Jamaica Plain are being consolidated and therefore there is potential to enhance services for veterans through co-location of acute inpatient and outpatient services.			

12.0 BPO Tradeoff Analysis

The purpose of the Trade-off Analysis is to provide VA decision makers with a balanced discussion of the strengths and weaknesses to be considered in deciding upon an option to implement. Team PwC compared and contrasted the evaluation criteria for each option together with the results of stakeholder and LAP input. Note that each of the options selected for study in Stage II were previously assessed to be capable of meeting the threshold criteria of: maintaining or improving quality of health care, patient access and cost effectiveness (see Stage I Report).

The following section displays each option's relative strengths and weaknesses in the evaluation categories of: Capital Planning, Reuse, Use of VA Resources, Ease of Implementation, and Stakeholder and LAP Input. A fifth evaluation category, Support for VA Programs (see Chapter 2), was determined to be not applicable to the Boston study.

BPO 1: Baseline Option

Table 161: Tradeoff Analysis

Capital Planning	
Strengths	• Shortest duration for Bedford and Brockton VAMCs (6 months shorter than other BPOs) and shortest duration for Jamaica Plain (along with BPO 8)
Weaknesses	• Longest duration for seismic corrections for all campuses with seismic non-exempt buildings • Most underutilized space for all campuses except West Roxbury • Least consolidation of vacant space
Reuse	
Strengths	• There are no strengths in the Baseline compared to the other BPOs
Weaknesses	• There is no reuse revenue in the Baseline
Use of VA Resources	
Strengths	• No strengths compared to the other BPOs
Weaknesses	• Highest operating, capital investment, and net present costs with very limited new facilities
Ease of Implementation	
Strengths	• Least effect on research as measured by research programs, annual research budget, number of resident slots and number of faculty with dual appointments due to change in location of research programs and clinical services • Least staff required to change job site (no change in job site in BPO 1) • Lowest likelihood for negative impact related to the size and complexity of the capital plan • Does not require patient moves to other campuses

Weaknesses	• Requires the most extensive renovations to historic or historically eligible buildings • Requires the most complicated onsite patient moves because of in-place renovations
Ability to Support Other VA Programs	
Strengths	• Supports DoD sharing by maintaining the golf course on the Bedford campus that is currently used and managed by DoD
Weaknesses	• No weaknesses compared to the other BPOs
Stakeholder & LAP Input	
Strengths	• Many stakeholders supported the Baseline option and remarked that they greatly value the Boston area facilities and desire to maintain services at all locations. • The LAP and stakeholders specifically support maintaining the GRECC program at the Bedford VAMC
Weaknesses	• The LAP was not in support of BPO 1 as it does not provide new, state of the art facilities

BPO 8: Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Right-Size Jamaica Plain and West Roxbury; Reuse Bedford and Partially Reuse Jamaica Plain.

Table 162: Tradeoff Analysis

Capital Planning	
Strengths	• Shortest duration for Jamaica Plain (along with BPO 1) • Eliminates underutilized space at Bedford and Brockton as with BPOs 10 and 11 • Reduction in vacant space at Bedford and Brockton as with BPOs 10 and 11 • Shortest duration for seismic corrections at Brockton along with BPOs 10 and 11
Weaknesses	• Highest underutilized space for West Roxbury and higher underutilized space for Jamaica Plain than BPO 10 and 11 • Longest duration for seismic corrections at Jamaica Plain and West Roxbury (as with BPO 1) • Most vacant space at West Roxbury and more vacant space at Jamaica Plain than BPOs 10 and 11
Reuse	
Strengths	• Provides more VA mission enhancement than BPOs 10 and 11. • Has less execution risk than BPOs 10 and 11
Weaknesses	• Yields the lowest reuse acreage and potential revenue

Use of VA Resources	
Strengths	• Lower operating, capital investment and net present costs than the Baseline
Weaknesses	• Higher operating and net present cost than BPOs 10 and 11. Higher capital investment cost than BPO 11.
Ease of Implementation	
Strengths	• Less effect on research and academic affiliations than BPOs 10 and 11 as measured by research programs, annual research budget, number of resident slots and number of faculty with dual appointments due to change in location of research programs and clinical services • Less staff required to change job site than BPOs 10 and 11
Weaknesses	• Greater effect on research and academic affiliations than Baseline as measured by impacted research programs, annual research budget, number of resident slots and number of faculty with dual appointments due to change in location of research programs and clinical services
Ability to Support Other VA Programs	
Strengths	• Higher potential to enhance specialized VA programs than BPO 1 and higher potential to enhance services to veterans at Brockton than BPO 1
Weaknesses	• Does not enhance specialized VA programs or services to veterans at Jamaica Plain or West Roxbury
Stakeholder & LAP Input	
Strengths	• The comment form input indicates more support for BPO 8 than BPOs 10 and 11, but less support than BPO 1
Weaknesses	• Stakeholders and the LAP expressed resistance to this option because of the consolidation of services from Bedford to Brockton

BPO 10: Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate West Roxbury at Jamaica Plain; Reuse Bedford and West Roxbury

Table 163: Tradeoff Analysis

Capital Planning	
Strengths	• Shortest duration for West Roxbury • No seismic, nonexempt building corrections necessary in Bedford, Jamaica Plain or West Roxbury • Lowest underutilized space for all facilities except Jamaica Plain (and only 2% underutilized space at Jamaica Plain) • Eliminates vacant space at all facilities • Shortest duration for seismic corrections at Brockton along with

	BPOs 8 and 11
Weaknesses	• No weaknesses compared to other BPOs
Reuse	
Strengths	• Yields the greatest potential reuse revenues of all BPOs
Weaknesses	• Provides less enhancement of VA mission than BPOs 1 and 8
Use of VA Resources	
Strengths	• Lowest operating cost and lower net present costs than BPOs 1 and 8
Weaknesses	• Higher capital investment and net present cost than BPO 11
Ease of Implementation	
Strengths	• No strengths compared to the other BPOs
Weaknesses	• Highest likelihood of negative impact on patient moves based on the most off-site inpatient moves • Most staff required to change job site • Greater effect on research and academic affiliations than Baseline as measured by impacted research programs and annual research budget due to change in location of research programs and clinical services • Effects the most resident slots and number of faculty with dual appointments • Greatest change to the number of staff required during implementation
Ability to Support Other VA Programs	
Strengths	• Highest potential to provide enhancement of services to veterans at Jamaica Plain and Brockton
Weaknesses	• No weaknesses compared to the other BPOs
Stakeholder & LAP Input	
Strengths	• No strengths compared to the other BPOs
Weaknesses	• Stakeholders and the LAP expressed resistance to this option because of the consolidation of services from Bedford to Brockton

BPO 11: Consolidate Bedford at Brockton; Establish New CBOC in the Bedford Area; Consolidate Jamaica Plain at West Roxbury; Reuse Bedford and Jamaica Plain

Table 164: Tradeoff Analysis

Capital Planning	
Strengths	• No seismic, nonexempt building corrections necessary in Bedford or Jamaica Plain, and shortest duration for urgent seismic corrections at West Roxbury • Shortest duration for seismic corrections at Brockton along with BPOs 8 and 10 • No underutilized space for Bedford, Brockton, or Jamaica Plain

	• Eliminates vacant space at all facilities except West Roxbury
Weaknesses	• Longest project duration for all campuses • Increase in vacant space at West Roxbury
Reuse	
Strengths	• Makes the entire Bedford and Jamaica Plain campuses available for reuse
Weaknesses	• Presents most obstacles to execution of reuse • Provides less enhancement of VA mission than BPOs 1 and 8
Use of VA Resources	
Strengths	• Lowest capital investment and net present costs
Weaknesses	• Higher operating cost than BPO 10
Ease of Implementation	
Strengths	• No strengths compared to the other BPOs
Weaknesses	• High likelihood of negative impact based on the size and complexity of capital plan for West Roxbury and Brockton • Requires more staff to change job site than BPOs 1 or 8 • Highest effect on research as measured by impacted research programs, annual research budget due to change in location of research programs and clinical services • Effects more faculty with dual appointments than Baseline and BPO 8
Ability to Support Other VA Programs	
Strengths	• Highest potential to provide enhancement of services to veterans at West Roxbury and Brockton
Weaknesses	• No weaknesses compared to the other BPOs
Stakeholder & LAP Input	
Strengths	• Some LAP members indicated that they support the Secretary's new alternatives presented at the fourth LAP meeting, which most closely resemble BPO 11 with key programs remaining at Bedford
Weaknesses	• Stakeholders and the LAP expressed resistance to this option because of the consolidation of services from Bedford to Brockton

Summary

Each of these options has relative merits and varying levels of stakeholder support. The Baseline option (BPO 1) accommodates the projected healthcare demand by renovating existing buildings to meet modern, safe and secure standards, where conditions allow. Stakeholders are adamant that BPO 1 is the preferred option as it keeps services and programs at all facilities, maintains access to healthcare services for Boston area veterans, and maintains the GRECC program at the Bedford VAMC. However, the LAP was not in support of BPO 1 as it does not provide new, state of the art facilities. The Baseline has the shortest duration for the Bedford and Brockton VAMCs (6 months shorter than the other BPOs) and the shortest duration along with BPO 8 for Jamaica Plain. Because all facilities are maintained in the Baseline, it has the least impact on

research programs and clinical services due to changes in location, as measured by research programs, annual research budget, number of resident slots and number of faculty with dual appointments. Similarly, the Baseline does not require any staff to change job site or patients to move to other campuses. Of all the BPOs the Baseline has the lowest likelihood for negative impact related to the size and complexity of its capital plan.

Although the Baseline renovates existing buildings to meet modern, safe and secure standards it also has the highest operating, capital investment and net present costs, and provides very limited new facilities. Additionally, the Baseline requires the most extensive renovations to historic or historically eligible buildings and due to in-place campus renovations will require the most complicated, and potentially disruptive, on-campus patient moves.

BPOs 8, 10 and 11 all involve consolidation resulting in a new combination of the campuses, as all three BPOs consolidate Bedford at Brockton. Consequently, the effect of the consolidation on the Bedford and Brockton campuses is the same in all three of these options. The duration for Bedford and Brockton in BPOs 8, 10 and 11 is slightly longer than the Baseline (by 6 months). However, since these three BPOs involve less renovation and more new construction at Brockton, they will require less time for urgent seismic corrections and provide a significant reduction in underutilized and vacant space at Brockton. In BPOs 8, 10 and 11 the consolidation of Bedford and Brockton causes the GRECC, MIRECC and animal research programs to move to Brockton, resulting in a high likelihood for negative impact. However, this move will concentrate the inpatient psychiatry and nursing home patients that may participate in these programs and whom also may benefit from services provided through the Brockton Center of Excellence for the Seriously Mentally Ill. This co-location may therefore result in synergies between programs. The stakeholders and the LAP expressed strong resistance to these BPOs because of the consolidation of Bedford at Brockton.

In addition to consolidating Bedford at Brockton, BPO 8 also right-sizes the Jamaica Plain and West Roxbury campuses. BPO 8 has the shortest duration for Jamaica Plain (along with BPO 1), but a longer duration for West Roxbury than BPO 10. Furthermore, BPO 8 has the longest duration for urgent seismic corrections for West Roxbury and Jamaica Plain along with the Baseline. BPO 8 has a similar percentage of underutilized space at Jamaica Plain and West Roxbury as the Baseline, which is higher than BPOs 10 and 11 in which those campuses are consolidated. BPO 8 has the most vacant space at West Roxbury as compared to the other options and more vacant space at Jamaica Plain than both BPOs 10 and 11. Other than the Baseline, BPO 8 has the highest operating, capital investment and net present costs. Because BPO 8 maintains both the West Roxbury and Jamaica Plain facilities there is less impact on research and academic affiliations, than in BPOs 10 and 11, from changes in research program and clinical service location, as measured by research programs, annual research budget, number of residents and number of faculty with dual appointments.

In addition to consolidating Bedford at Brockton, BPO 10 also consolidates West Roxbury at Jamaica Plain. BPO 10 has the shortest duration for West Roxbury of the options, but a longer duration for Jamaica Plain than BPOs 1 and 8. In BPO 10, West Roxbury is consolidating to a new tower located at Jamaica Plain and therefore no seismic corrections are needed at either site.

BPO 10 has the lowest underutilized space for all facilities except Jamaica Plain (with only 2% underutilized space at Jamaica Plain) and also eliminates the vacant space at all facilities. BPO 10 also yields the greatest potential reuse revenues of all BPOs, has the lowest operating costs and the second lowest net present cost. However, because Bedford is consolidating at Brockton and West Roxbury is consolidating at Jamaica Plain, BPO 10 has a higher potential for negative impact to academic affiliations and HR/staffing than BPOs 1 and 8. Furthermore, BPO 10 impacts the most residents and faculty with dual appointment, has the highest likelihood of negative impact based on off-site inpatient moves, and requires the greatest change to staff during implementation.

In addition to consolidating Bedford at Brockton, BPO 11 also consolidates Jamaica Plain at West Roxbury. BPO 11 has the longest project duration for all campuses; however BPO 11 eliminates both underutilized and vacant space at Bedford, Brockton and Jamaica Plain. BPO 11 presents the most obstacles to a successful execution of reuse but has the lowest capital and net present costs. Although BPO 11 requires the least amount of demolition or renovation to historic or historically eligible buildings of the options, it has a high likelihood of negative impact based on the size and complexity of its capital plan for West Roxbury and Brockton, and has the highest impact on research programs due to changes in location, as measured by research programs and annual research budget. Additionally, aside from BPO 10, BPO 11 impacts the most faculty with dual appointments.

Appendices

Appendix A - Other Relevant Documents

Other relevant documents include the following:

- The document entitled, *Stage II Assumption, Inputs and Outputs* written by Team PwC.
- BPO Implementation Plan and Risk Mitigation Strategies

Appendix B - Detailed Stage II Methodology

Overview

This section provides an overview of the methodology employed in Stage II of the CARES study. In Stage I, Team PwC in collaboration with Other Government Contractors (OGCs) for Reuse studies[28], developed and assessed a broad range of potentially viable business plan options (BPOs) that met the forecast healthcare needs for the study sites. Based upon an initial assessment of these BPOs, Team PwC recommended up to six BPOs to be taken forward for further development and assessment in Stage II, and VA selected the specific BPOs to be studied further. In Stage II, Team PwC and OGCs will conduct a more detailed assessment of the short-listed BPOs in order to provide VA decision makers with an evaluation of each BPO and its relative merits.

In Stage II, Team PwC and OGCs will collect additional data on a set of evaluation criteria and conduct additional capital planning, reuse, and financial analysis for each BPO. The results will be used to compare BPOs and to evaluate the relative strengths and weaknesses of each BPO. Finally, an implementation plan featuring risk mitigation strategies will be developed for each BPO.

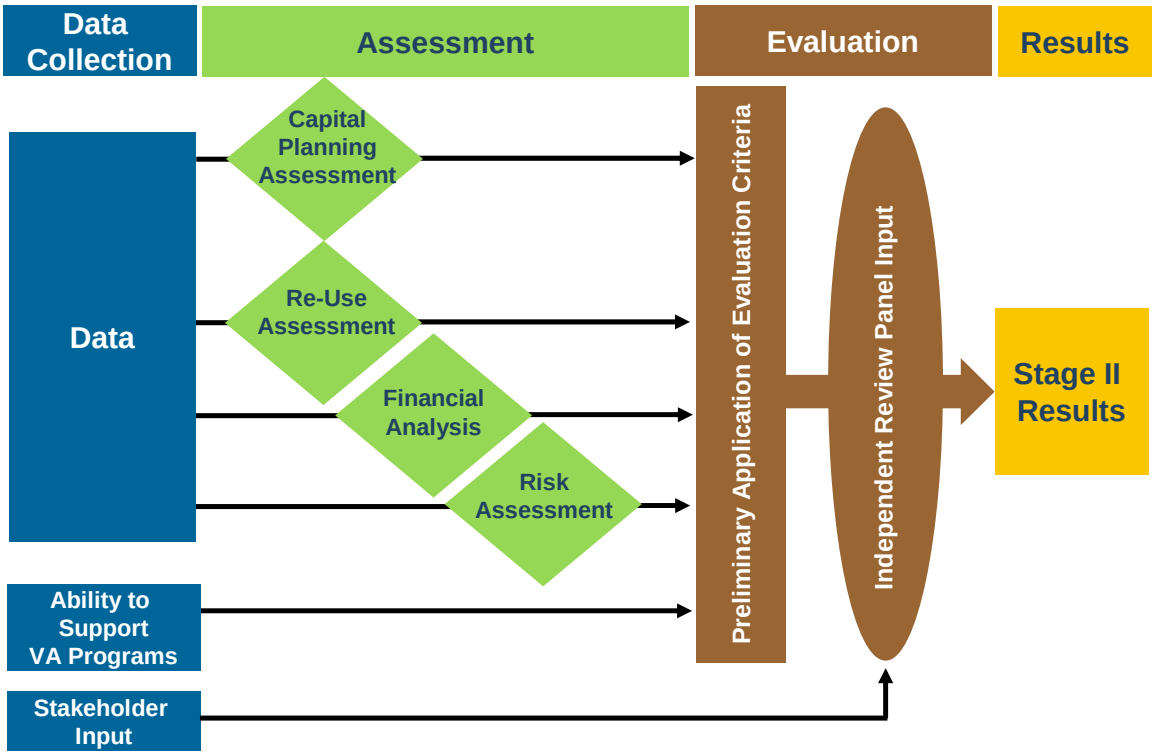
The Stage II study will be organized around the following evaluation categories:

- Capital Planning
- Use of VA Resources
- Ability to Support Other VA Programs
- Reuse
- Ease of Implementation
- Stakeholder Input

The Stage II study process will consist of four primary steps, Data Collection, Assessment, Evaluation, and Stage II Results, as depicted in Figure 1.

[28] In both Stage I and II, OGCs complete the Reuse studies for comprehensive capital planning sites. Team PwC completes the Reuse studies for healthcare planning sites.

Figure 1: A Diagram of the Overview of Stage II Methodology



The Data Collection process will be used to augment study data gathered in Stage I. This data will provide the inputs to the BPO assessment. During the data collection step, Team PwC will confirm existing Stage I data and collect new data in order to refine the BPOs and complete the assessments for each evaluation category. The Capital Planning team will obtain such information as updated building scores, healthcare utilization, and space projection factors, while the Reuse team will obtain additional information regarding the real estate market, such as rents and sales prices. The Use of VA Resources team will validate and update VA costs of care and collaborate with the Capital Planning and Reuse team to understand the capital investment needs and potential reuse revenues associated with each BPO. The Ease of Implementation team will obtain data and information to validate the impacts on academic affiliations and education programs, in addition to potential staffing complements under each BPO. The Ease of Implementation team will work with the Capital Planning and Reuse teams to understand the implementation considerations for each BPO and develop strategies to mitigate implementation risks. Site teams will review information about Ability to Support Other VA Programs and potential services in kind to determine how they might be impacted by the implementation of the BPOs.

Parallel to the data gathering activities, Team PwC will solicit input from stakeholders on their comments and concerns for each BPO. Stakeholder input will include written correspondence received through a central mail stop, oral testimony received through Local Advisory Panel (LAP) public meetings, results of LAP deliberations, and electronic feedback received through the study website.

The Assessment step will involve conducting more detailed analyses of the short-listed BPOs across each evaluation category. The data collected in this initial step will drive the completion of the assessments. The Capital Planning team will use projected utilization and facility information to calculate and allocate space needs for a conceptual site plan, determine the capital investment required, and schedule construction projects. The Reuse team will refine the market assessment as well as the environmental and

regulatory assessments for the property. The Use of VA Resources team will complete a financial analysis to determine the costs, revenues, and savings associated with each BPO, while the Ease of Implementation team will determine risk ratings for each option. The outputs of the Assessment step will be a set of data and findings for each BPO.

The Evaluation step will compare the BPOs against the Baseline option using a set of agreed-upon evaluation criteria, which are described in the following section. The Team PwC and OGC site teams will conduct a preliminary evaluation of each BPO. The independent review panel will provide a sounding board for the preliminary assessment findings and evaluation of each BPO, together with stakeholder input. The BPOs will be evaluated against the evaluation criteria using a quantitative scale in order to discriminate between the BPOs. The evaluation results will be used by site teams and the expert panel to discuss the relative strengths and weaknesses of each BPO and to develop implementation plans. The outputs of the Evaluation step will be the evaluation results for each BPO, a discussion of the merits of each BPO, and an implementation plan and risk mitigation strategies for each BPO. The Stage II Results will be used by VA in its decision making.

Evaluation Criteria

In Stage I, a broad range of BPOs were screened and evaluated according to a set of primary and discriminating criteria. Primary criteria consisted of access, quality of care, and cost effectiveness. Discriminating criteria consisted of healthcare quality, healthcare access, impact on VA and local community, use of VA resources, ease of implementation, and ability to support VA programs.

The Stage I evaluation process resulted in BPOs recommended for further study in Stage II. Each of the BPOs recommended for further study in Stage II met the three primary criteria of access, quality of care, and cost effectiveness. In terms of access and quality of care, each of the BPOs was assessed to meet minimum standards and thresholds. These criteria will not be further studied in Stage II.

The discriminating criteria used in Stage I provided a level of analysis which was sufficient to arrive at recommended BPOs. The purpose of the Stage II evaluation process is to further compare and contrast the BPOs based upon more detailed analysis of several evaluation criteria.

Working collaboratively with VA management, Team PwC developed five categories of evaluation criteria that were deemed appropriate for Stage II evaluation. These five categories of evaluation criteria are: Capital Planning, Reuse, Use of VA Resources, Ease of Implementation, and Ability to Support Other VA Programs. In arriving at these criteria, consideration was given to Stage I criteria and results, discriminating factors of BPOs moving forward for study in Stage II, and the relevance of criteria across sites. Table 53 lists the indicators used to measure each of the evaluation criteria, together with the definition. It should be noted that some criteria, specifically academic affiliations / education and HR / staffing, used to evaluate the impact on local community in Stage I, will be used more appropriately in Stage II to evaluate the ease of implementation.

Table 1: Stage II Evaluation Criteria and Indicators

Evaluation Criteria	Indicator	Definition
Capital Planning		
Timeliness of completion	Total duration (Years to complete)	The amount of time to complete construction of new or renovated facilities.
Timeliness of urgent corrections	Duration (Years to correct code deficiencies, focusing on seismic deficiencies as identified in the CAI)	The amount of time to complete safety improvements and render facilities compliant with modern seismic standards. Implements seismic corrections for buildings designated by VA as seismic non-exempt. Where seismic non-exempt buildings are not identified for occupancy in the BPO, these corrections will not be implemented.
Consolidation of underutilized space	% Underutilized space	The extent to which campus space is used for healthcare delivery. Assesses the percentage variance between the projected ideal total campus BGSF and the projected BPO projected area. The projected BPO BSGF is a function of the facility condition assessment scores and quantity of the existing buildings altered in the BPO.
Consolidation of vacant space	% Vacant space	The extent of vacant space remaining on campus at completion of the proposed construction.
Reuse		
Market potential for reuse	Market potential for reuse	Reflects the strength of the local real estate market. Gauges the market appeal of each BPO as well as the overall market appetite for similar projects.
Financial feasibility	Financial feasibility	The total cash flows each BPO will yield to VA. The financial feasibility utilizes market data to determine a value for each BPO and to generate projected net reuse cash flows for each BPO. A range of financial factors will be considered including demolition costs, capital market conditions, required VA investments, etc.
VA mission enhancement	VA mission enhancement	A qualitative assessment of how the overall reuse solution may support VA mission. This can include the degree of compatibility that the reuse option has with the existing Medical Center activities, the existence of synergies that benefit both parties, and other potential complimentary elements of the BPO.
Execution risk	Execution risk	The level of complexity and risk required from a real estate perspective to accomplish the deal and deliver the cash flows presented in the highest and best use and financial feasibility option analysis. It encompasses risk factors associated with both market and financial issues, taking into account the local context.
Use of VA Resources		
Total operating costs	Total operating costs ($)	Total operating costs in $ including direct variable, fixed direct, and fixed indirect costs associated with a BPO. Operating costs are aggregated for the 30-year study period.
Total capital investment costs	Total capital investment costs ($)	Total capital investment costs in $ for each BPO over the 30-year study period.
Net present cost	Net present cost ($)	Annual cash outflow discounted using the overall discount rate so that a particular BPO's cash outflows can be valued on a relative basis as compared to other BPOs.
Total considerations	Total considerations (reuse revenues, in-kind, etc.) ($)	Total considerations (reuse proceeds/costs, in-kind considerations, etc.) in $ for each BPO aggregated for the 30-year study period.
Total annual savings	Total annual savings ($)	Annual savings in $ for each BPO over the 30-year study period.

Evaluation Criteria	Indicator	Definition
Ease of Implementation		
Academic affiliations / education*	Number of research programs impacted	The number of research programs (as defined either by disease focus or patient population, as data allows) expected to be negatively impacted due to the change in services provided, facilities, or location.
	% annual research budget impacted	The % of total research budget (as defined by research expenditures for a given fiscal year) expected to be negatively impacted due to the change in services provided, facilities, or location.
	Number of residency programs and residents impacted	The number of residency programs (as defined by medical specialty) and total number of resident positions expected to be negatively impacted due to the change in services provided, facilities, or location.
	Number of faculty with dual appointments impacted	The number of faculty with appointments at both the VAMC and affiliate organizations that would be negatively impacted due to the change in services provided, facilities, or location.
HR / Staffing*	Change in staff (FTEEs)	The net change in the number of staff expected for the BPO.
	Number of staff required to change job site (FTEEs)	The total number of staff that will be required to change working locations and thus commutes.
Reuse considerations	Community support	A qualitative assessment reflecting the degree of community support for the option. This includes the potential use of the option and how that fits with what the community perceives as its needs. Community support also reflects political support or opposition to each option.
	Legal / regulatory	This captures all legal and regulatory issues faced by each option, including zoning, environmental, historic considerations, title encumbrances and any other site restrictions that may impact the option.
Capital planning considerations	Size and complexity of capital plan	This captures four indicators of the extent to which campus facilities will be impacted by the capital plans for a given BPO: The number of capital projects associated with the BPO; the percentage campus area change as projected by the BPO; the total duration of the capital projects; and the overall capital investment cost for the BPO.
	Number and frequency of patient moves (quantity of clinical buildings altered)	The extent to which clinical buildings will be impacted by the capital plans for a given BPO. Provides an assessment of the total quantity of buildings altered in the BPO where patients (clinical space) are impacted. It is assumes that any construction activities in existing buildings will disrupt typical patient care activities and these activities will require relocation to maintain acceptable levels of patient satisfaction.
	Number of historic buildings altered (total historic buildings altered)	The extent to which there are historical considerations in implementing the capital plans for a given BPO. Assesses the total quantity of historic buildings altered in the BPO.
Ability to Support Other VA Programs		
DoD sharing	MOUs impacted by BPO	The extent to which Memoranda of Understanding with DoD partners (for sharing agreements) are enhanced by the BPO.
One VA integration	VBA and NCA impacted by BPO	The extent to which each BPO will enhance existing One-VA co-locations or facilitate the establishment of new co-locations.

Evaluation Criteria	Indicator	Definition
Specialized VA programs	Specialized Care/Centers of Excellence impacted by BPO	The extent to which the BPOs enhance specialized care (e.g., chronic spinal cord injury treatment, Alzheimer's treatment, etc.) or Centers of Excellence (e.g., GRECC, GEM, etc.) as defined by VA.
Enhancement of services to veterans	Services in kind	Extent to which each BPO directly and indirectly provides enhancement to VA services. This may often be achieved through providing in-kind services. In addition, this may be achieved through upgrading of general services on campus It may also involve uses that by proximity enhance the overall ability of the Center to offer its veterans convenient complementary services.

* Academic affiliations/education and HR/staffing criteria not assessed at comprehensive capital planning sites, where no healthcare decision is required.

Stage II BPO Assessment and Evaluation Process

In Stage II, Team PwC and OGCs will further study and assess the BPOs using the following evaluation criteria: capital planning, reuse, use of VA resources, ease of implementation, and ability to support VA programs. The following sections describe the inputs and assumptions that will be used to conduct the refined studies as well as the resulting outputs. Finally, the process for evaluating the outputs per the evaluation criteria is provided to illustrate how BPOs will be evaluated relative to each other.

Capital Planning

The Capital Planning study determines projected future site and facility development for the optimum physical configuration for delivery of healthcare services to veterans. In Stage I, the Capital Planning studies determined the placement of facilities within a campus to meet the capital needs for a given BPO. In Stage II, the study will be refined to consider the extent of renovations and new construction needed to optimize proposed locations on the campus.

In order to conduct the analysis, Team PwC will utilize a database to project space needs and allocate square footage according to departmental groups[29] in order to develop a conceptual plan for the campus and determine investment costs. The capital investment requirements will be calculated for the capital plan and appropriate timing and sequencing of construction determined to assist with implementation. The inputs and assumptions to be used in conducting the Capital Planning study, as well as the outputs from the study, are further described below.

Inputs and Assumptions

The basic capital planning inputs for determining physical space need on the campus are identified below:

- **BPOs selected for further study**: The Secretary's Decision dictated the BPOs to be studied further in Stage II. The BPOs include those recommended by Team PwC at the conclusion of Stage I or BPOs introduced by the Secretary to be studied in Stage II. This input will be imperative for all assessments.

[29] Departmental groups identify one or more distinct buildings of similar construction type and functional activities.

- **Departmental utilization data**: Departmental utilization data is based upon projected CARES Implementation Categories (CIC) utilization data approved by VA using FY03 as the Baseline year.

- **Campus site and building plans**: GFI drawings of current site and buildings were provided by VA.

- **Detailed building data**: Building data such as building condition scores, square footages, etc. were provided via the capital asset inventory (CAI) database administered by VA.

A detailed set of assumptions were established in order to conduct the Stage II Capital Planning assessments. These assumptions pertain to such factors as space projection, building scores, historical designation, departmental groupings, etc. Key assumptions are provided below; however, a more detailed listing of assumptions are compiled in the appended assumptions document:

- Minimum space requirements are developed per *AIA Guidelines for Hospitals and Healthcare Facilities 2001 edition*, VA standards, and Team PwC experience.
- Area calculations, condition assessment ratings, major building systems life cycle costing projections, and functional use descriptions associated with existing buildings are based on the VA provided CAI database.
- Where the existing quality of care environment does not address current fire and life safety codes or VA standards of care (such as in the case of multi-bed patient wards), renovation and or new construction is required to provide a modern, safe, and secure environment.
- A period of ten years is required to demolish historical buildings. Submission of all buildings designated as historic will occur for all project sites in 2007. Therefore, the earliest date for demolition of historic buildings will be 2017. The earliest date for renovations to historic buildings will be 2009.
- Buildings with an average facility assessment score from the CAI less than 4.0 are not suitable for clinical occupancy. Buildings with an average score of 3.0 are not suitable for occupancy, and buildings with an average score of 3.0 or less will be vacated or demolished, unless deemed suitable by the consultant.
- The first funding cycle for any new project would occur in the first quarter of 2009.
- Buildings (existing or proposed) that have been identified as being vacated and mothballed will become inoperative.
- Easements for utilities must be maintained for all reuse development activities in options where VA facilities remain and require access to these utilities.
- The maximum number of floors possible for new nursing home facilities will be two.

Outputs

The Capital Planning study will yield the following outputs:

- **Existing current state site plan**: A site plan of the current physical configuration and building distribution of the campus, with narrative description and table of buildings, will be included as a reference for comparing facility changes defined by each of the BPOs.

- **Proposed site plan**: A site plan of the campus, with narrative description, will be generated for each BPO, illustrating the physical configuration and building distribution of the campus in the projection year 2023.

- **Concept plan**: Concept plan of typical floor or stack diagram will only be provided for complex/multi-function buildings with narrative description.

- **Supporting Narrative**: A narrative explaining significant projected area DGSF implications on site, key proposed activities (i.e., parking, site work, historic buildings, phasing issues, rationale for renovations and/or new construction, and reuse parcel distribution), and key implementation milestones.

- **Construction Schedule**: Schedules for construction activities are intended to identify the relative duration of renovation and construction in order to calculate the occupancy date for utilization of space and escalation costs. These schedules provide a base on which the implementation plans will be incorporated. A narrative includes a brief description of the individual building construction projects and indicates the construction sequence and duration for each BPO.

- **Projected BPO cost estimate**: The capital investment required (including both investment expense and periodic maintenance costs) to implement the capital plan will be generated based upon the unit price per square foot. These costs serve as inputs to the financial analysis discussed later in the report.

Evaluation Scale

The evaluation scales for the Capital Planning criteria are described in Table 2. Criteria will be assessed on a 5-point scale using the outputs of the Capital Planning analysis.

Table 2: Evaluation Scale for Capital Planning Evaluation Criteria

Evaluation Criteria/ Indicators	Evaluation Scale	Explanation of Scale
Timeliness of completion: Total Duration (Years to complete)	1 = Significantly longer duration than the Baseline BPO (>24 months longer) 2 = Longer duration than the Baseline BPO (>6 and ≤ 24 months longer) 3 = Similar duration as the Baseline BPO (+/- 6 months) 4 = Shorter duration than the Baseline BPO (>6 and ≤ 24 months shorter) 5 = Significantly shorter duration than the Baseline BPO (>24 months shorter)	An assessment of "1" represents the longest duration to implement the plan, which is least preferred since improvements to healthcare delivery may take a significant amount of time to realize. An assessment of "5" represents the shortest duration to implement the plan, which is most preferred since improvements to healthcare delivery may be realized sooner.
Timeliness of urgent corrections: Duration (Years to correct code deficiencies, focusing on seismic deficiencies as identified in the CAI)	1 = Significantly longer duration than the Baseline BPO (>24 months longer) 2 = Longer duration than the Baseline BPO (>6 and ≤ 24 months longer) 3 = Similar duration as the Baseline BPO (+/- 6 months) 4 = Shorter duration than the Baseline BPO (>6 and ≤ 24 months shorter) 5 = Significantly shorter duration than the Baseline BPO (>24 months shorter)	An assessment of "1" represents the longest duration to make seismic corrections, which is least preferred since safety improvements may take a significant amount of time to realize. An assessment of "5" represents the shortest duration to make seismic corrections, which is most preferred since safety improvements may be realized sooner.

Evaluation Criteria/ Indicators	Evaluation Scale	Explanation of Scale
Consolidation of underutilized space: % Underutilized Space	1 = Significantly less reduction in underutilized space than the Baseline BPO (>20% higher) 2 = Less reduction in underutilized space than the Baseline BPO (>5 and ≤ 20% higher) 3 = Similar reduction in underutilized space as the Baseline BPO (+/- 5%) 4 = Greater reduction in underutilized space than the Baseline BPO (>5 and ≤ 20% lower) 5 = Significantly greater reduction in underutilized space than the Baseline BPO (>20% lower)	An assessment of "1" represents the least amount of reduction in underutilized space, which is least preferred since less reduction of underutilized space indicates a less optimal use of space for providing healthcare and administrative functions throughout the campus. An assessment of "5" represents the greatest amount of reduction in underutilized space, which is most preferred since greater reduction of underutilized space indicates a more optimal use of space for providing healthcare and administrative functions throughout the campus.
Consolidation of vacant space: % Vacant Space	1 = Significantly less reduction in vacant space than the Baseline BPO (>20% higher) 2 = Less reduction in vacant space than the Baseline BPO (>5 and ≤ 20% higher) 3 = Similar reduction in vacant space as the Baseline BPO (+/- 5%) 4 = Greater reduction in vacant space than the Baseline BPO (>5 and ≤ 20% lower) 5 = Significantly greater reduction in vacant space than the Baseline BPO (>20% lower)	An assessment of "1" represents the least amount of reduction in vacant space, which is least preferred since less reduction of vacant space indicates a less optimal use of space for providing healthcare and administrative functions throughout the campus. An assessment of "5" represents the greatest amount of reduction in vacant space, which is most preferred since greater reduction of vacant space indicates a more optimal use of space for providing healthcare and administrative functions throughout the campus.

Reuse

The purpose of the Reuse studies in Stage II is to determine the highest and best use of property for each of the BPOs. The Reuse team (Team PwC or OGC) will conduct refined market assessments and regulatory assessments in Stage II that build upon the previous market analysis completed for Stage I, with supplemental information from the local marketplace. The assessment will include such elements as rents, sales prices, absorption, changes to supply, and forecasted changes in demand drivers, such as projected employment growth and increase in households. Using the revised information from the market assessment, the Reuse team will engage in a collaborative process with the Capital Planning team to identify the optimal site configuration for each BPO that balances the desirability for reuse with the goals of the Capital Planning team. They will also provide information to the financial analysis team regarding projected reuse proceeds resulting from the BPO.

Inputs and Assumptions

The following will be the key inputs to the Reuse study for Stage II:

- **Market interviews**: Conversations will be conducted with local real estate brokers, developers, homebuilders, other real estate professionals, as well as local planning and economic development officials as appropriate.

- **Non-market users**: Non-market users will be identified through the LAP and stakeholder input. Telephone conversations will also be conducted with major veterans organizations to identify potential "in-kind" services as appropriate.

Key assumptions driving the Reuse study will include the following:

- Industry standards are to be utilized for estimating demolition or clean-up requirements as applicable.
- "Non-significant" historic buildings will be assumed eligible for demolition as opposed to reuse.
- Engagement in an Enhanced Use Lease will be assumed unless disposition would result in significantly higher net proceeds.

Several assumptions will also serve as the foundation for projecting revenues associated with Reuse plans:

- Revenue assumptions will be based on current market sale and lease rates as identified through a refined market assessment.
- All financing assumptions, including interest rates, capitalization rates, and discount rates, among others, are to be based on current market conditions.
- Non-market users will be considered to be revenue-neutral.
- Land acquisition costs are to be based on average current market rates for commercial and institutional property.
- A private developer or end-user will pay for demolition costs as necessary.

Outputs

The Reuse team will engage in a collaborative process with the Capital Planning team to identify the optimal site configuration for each BPO that balances the desirability for reuse with the goals of the Capital Planning functional area resulting in a refined BPO. Additional key outputs from the Reuse study will be the following:

- **Refined Market Assessment:** A market assessment write-up will be developed containing the following elements: market assessment of area, real estate market trends, range of market values and returns, and development risks given market trends.

- **Reuse Revenues:** The profiles of revenues generated from real property will be incorporated into the financial analysis to offset investment costs and yield an overall net present cost.

- **Political and Regulatory Assessment:** An assessment of the political, regulatory, and environmental conditions will be developed that assesses the political climate as well as existing and proposed zoning and other development regulations that could impact the reuse opportunities on the site.

- **Non-market users:** Non-market users identified through stakeholder and LAP meetings will be noted and addressed in narrative form.

- **Public and Private Funding Sources:** A discussion of sources of funding as identified through the LAP and discussions with local economic development officials.

Evaluation Scale

The evaluation scales for the Reuse criteria are described in Table 3. Criteria will be assessed on a 5-point scale using the outputs of the Reuse analysis.

Table 3: Evaluation Scale for Reuse Evaluation Criteria

Evaluation Criteria / Indicators	Evaluation Scale	Explanation of Scale
Market potential for reuse	1 = Reuse would not be well received by the market 2 = Market is weak for reuse 3 = Market is adequate for reuse 4 = Market exhibits strength 5 = Market is very strong for reuse	An assessment of "1" represents the least market support for the reuse plan, which is least preferred since this would indicate a plan that is not the highest and best use of land. An assessment of "5" represents strong market support of the reuse plan, which is most preferred since this suggests the highest and best use of the land.
Financial feasibility	1 = Transaction expected to result in negative cash flow 2 = Transaction will generate less than satisfactory cash flows 3 = Transaction will generate marginal cash flows 4 = Transaction will generate material cash flows 5 = Transaction will generate significant cash flows	An assessment of "1" represents a reuse expense to VA which is least preferred since this would not result in proceeds for offsetting capital investment. An assessment of "5" represents significant positive cash flows, which is most preferred since they would allow VA to realize reuse proceeds to offset the capital investment required.
VA mission enhancement	1 = Least compatible with / provides least enhancement of VA mission 2 = Less compatible with / provides less enhancement of VA mission 3 = Similar compatibility / enhancement of VA mission as other BPOs 4 = More compatible with / provides more enhancement of VA mission 5 = Most compatible with / provides best enhancement of VA mission	An assessment of "1" represents a reuse plan that is not compatible with VA's mission, which is least preferred since this would not enhance and could possibly hinder the goals of VA. An assessment of "5" represents a reuse plan that is most compatible with VA's mission, which is most preferred since this would enhance the ability of VA to meet its goals.
Execution risk	1 = Option presents barriers that cannot be resolved 2 = Option presents significant obstacles that may not be resolvable 3 = Option may present obstacles that are resolvable with some difficulty 4 = Option may have some obstacles, but they should be reasonably resolvable 5 = Option presents no significant obstacles or barriers to execution	An assessment of "1" represents significant obstacles to the successful implementation of the reuse plan, which is least preferred since this could indicate inability to realize reuse proceeds in a timely manner. An assessment of "5" represents no obstacles to a successful implementation plan, which is most preferred since this would indicate that VA would realize expected reuse proceeds in a timely manner.

Use of VA Resources

The purpose of the financial analysis is to develop a detailed Cost Effectiveness Analysis for each BPO studied in Stage II. The analysis will utilize a financial model that considers the VAMC operating costs for providing care and capital investments, as well as proceeds from reuse plans in order to determine

overall cost effectiveness. Additionally, sensitivity analyses will be conducted to test the importance of the key assumptions. Additional iterations of the financial analysis will be run for each BPO to determine the impact different assumptions may have on the results.

Special attention will be given to providing more specific department/service level cost analysis that builds upon earlier CARES analysis and provides clearly described cost and business decision options as part of the Stage II results. The major differences between Stage I and Stage II financial analyses will be the level of detail and refinement that is included in the inputs to the financial analysis as well as improvement in the completeness of the analysis.

Inputs and Assumptions

These key inputs will include the following:

- **Current and forecasted services:** These are defined by the healthcare component of each BPO.
- **Current and forecasted utilization:** Departmental utilization data is based upon projected CIC utilization data approved by VA.
- **VA current and future unit cost of care**: Current costs are provided per CIC by VACO from the DSS system which serves as its cost accounting system. Team PwC calculates the future cost of care using an inflation factor.
- **Capital investment requirements and timing**: This will be provided by the Capital Planning team based upon square footage projections.
- **Reuse revenues**: These are revenues generated from real property and sharing agreements, and will be provided by the Reuse team.

The financial analysis to be conducted in Stage II will be based on several assumptions. A more detailed set of assumptions are included in the appendix; however, key assumptions are highlighted below:

- The financial analysis has a 30-year planning horizon from 2003 to 2033.
- Escalation rates are constant for each year for each individual site.
- The net present cost of each BPO is calculated using a Treasury nominal discount rate (5.2%).
- Medicare payment rates will use average rates per county. Adjustments for graduate medical education, average wage rates, disproportionate share, or capital requirements will be assumed to have been averaged across all providers.

Outputs

The outputs from the financial analysis are as follows:

- **Total operating costs**: This is the comparison of the total operating costs among the BPOs. Total operating costs include direct variable, fixed direct, and fixed indirect costs associated with a BPO. Operating costs are aggregated for the 30-year study period. This output is useful for evaluating the operating cost effectiveness of a BPO.

- **Total capital investment costs**: This is the comparison of the total capital investment costs among the BPOs over the 30-year study period.

- **Net present cost**: This is the comparison of the 30-year NPC among the BPOs. NPC is the annual outflow discounted using the overall discount rate so that a particular BPO's cash outflows can be valued on a relative basis as compared to other BPOs.

- **Total considerations (reuse revenues, in-kind, etc.)**: This is the comparison of the total considerations (reuse proceeds/costs, in-kind considerations, etc) aggregated for the 30-year study period.

- **Total annual savings**: This is the comparison of the annual savings among the BPOs over the 30-year study period.

- **Cost Effectiveness Analysis:** The outputs from the Cost Effectiveness Analysis will also be provided which include such metrics as Return on Investment, Internal Rate of Return, Payback in terms of years, and Average Annual VA Investment.

Finally, sensitivity analyses will also be performed for each BPO to understand the effects of key data elements (e.g., contract prices, utilization volumes, etc.) on the outcomes.

Evaluation Scale

The evaluation scales for the Use of VA Resources criteria are described in Table 4. Criteria will be assessed on a 5-point scale using the outputs of the Use of VA Resources analysis.

Table 4: Evaluation Scale for Use of VA Resources Evaluation Criteria

Evaluation Criteria/ Indicators	Evaluation Scale	Explanation of Scale
Total operating costs	1 = Financial analysis metric for the BPO is greater than 114% of the Baseline BPO 2 = Financial analysis metric for the BPO is 105 - 114% of the Baseline BPO 3 = Financial analysis metric for the BPO is 95 - 104% of the Baseline BPO 4 = Financial analysis metric for the BPO is 85 - 94% of the Baseline BPO 5 = Financial analysis metric for the BPO is less than 85% of the Baseline BPO	An assessment of "1" represents a financial metric that is greater than the Baseline BPO, which is least preferred since this indicates higher costs to VA. An assessment of "5" represents a financial metric that is less than the Baseline BPO, which is preferred since this indicates lower costs to VA.
Total capital investment costs		
Net present cost		

Both the indicators of Total Considerations and Total Annual Savings will be presented and considered in the recommendation of a final BPO; however, they will not be evaluated using the scale as applied to the other outputs of the financial analysis.

Ease of Implementation

The purpose of the Ease of Implementation assessment is to determine the likelihood and potential severity of various risks that could impede the successful and timely implementation of the BPO. This also allows for the development of mitigation strategies that can be considered during implementation planning. Data for the indicators of the evaluation criteria (i.e., capital considerations, reuse considerations, academic affiliation / education, and HR / staffing) will be compiled. The risk factors will

be assessed according to impact and likelihood of occurrence. The impact of a risk factor refers to the degree to which the factor will disrupt successful implementation of the BPO. The likelihood of occurrence refers to the probability that the risk factor will arise. An online risk assessment tool will be used to calculate the risk metric based on these parameters as well as capture corroborative data, justification for the risk metric, and mitigation factors. Mitigation strategies will be developed for major risks identified through this assessment and included in the implementation plan for each BPO.

Inputs and Assumptions

The key inputs for the Ease of Implementation study will mirror the evaluation criteria as discussed earlier for this function. The risks assessments will be conducted using the indicator data gathered for the evaluation criteria of academic affiliations / education, HR / staffing, reuse considerations, and capital considerations.

Key assumptions for conducting the Ease of Implementation study will include the following:

- Academic affiliations/education and HR/staffing criteria are not assessed at comprehensive capital planning sites, where no healthcare decision is required.
- There will be no overall risk score for a given BPO (i.e., risk criteria will be assessed independently and will not be summed or weighted).
- Each risk criterion will be rated across two factors – impact and likelihood of occurrence.
- The expert panel will review and validate the risk assessment proposed by the site study team.

Outputs

The following will be the key outputs from the risk assessment:

- **Risk metric and narrative**: Quantitative risk assessment of each criterion with supporting narrative. The risk metric and assessment information will assist in the development of risk mitigation factors to be developed in the final business plan.

- **Risk mitigation plans**: Plans for mitigating the identified risks will be developed and incorporated into the implementation plan for the BPO.

Evaluation Scale

The evaluation scales for the Ease of Implementation criteria are described in Table 5. Criteria will be assessed on a 5-point scale using the outputs of the Ease of Implementation analysis.

Table 5: Evaluation Scale for Ease of Implementation Evaluation Criteria

Evaluation Criteria/ Indicators	Evaluation Scale	Explanation of Scale
Academic affiliations/education* (All indicators)	The ease of implementation criteria will be assessed as the average of two dimensions: 1) negative impact of identified risk and 2) likelihood of negative impact of identified risk. Negative Impact of Identified Risk For Academic affiliations/education, HR/staffing, and all Capital planning considerations for	The overall assessments represent the ease of implementation according to the two noted dimensions. Thus, assessments with lower scores will be more difficult to implement and will require more mitigation planning, while assessments with higher scores will be easier to implement and require less mitigation planning.

Evaluation Criteria/ Indicators	Evaluation Scale	Explanation of Scale
HR/staffing* (All indicators) **Reuse considerations** (All indicators) **Capital planning considerations** (All indicators)	implementation, **impact** will be measured as follows: 1-5 scale for negative impact of identified risk 1 = High potential negative impact 3 = Medium potential negative impact 5 = Low potential negative impact For Community Support (a Reuse consideration), impact will be measured as follows: 1 = Option has strong community resistance with at most limited support 2 = Option has greater community resistance than support 3 = Option has a balance of community support and resistance 4 = Option has greater community support than resistance 5 = Option has strong community support with at most limited resistance For Legal and Regulatory (a Reuse consideration), impact will be measured as follows: 1 = Option has obstacles that cannot be resolved 2 = Option has significant obstacles that may not be resolvable 3 = Option may have obstacles that are resolvable with some difficulty 4 = Option may have some obstacles, but they should be reasonably resolvable 5 = Option has no significant legal/regulatory obstacles <u>Likelihood of Negative Impact</u> For Academic affiliations/education, HR/staffing, and all Capital planning considerations for implementation, **likelihood** will be measured as follows: 1-5 scale for likelihood of negative impact for identified risk 1 = High likelihood of occurrence of negative impact 3 = Medium likelihood of occurrence of negative impact 5 = Low likelihood of occurrence of negative impact For Community Support, likelihood will be measured as follows: 1 = Option has high likelihood of community resistance 3 = Option has moderate likelihood of community resistance 5 = Option has low likelihood of community	An assessment of "1" represents a risk area that is likely to occur and would have a high negative impact. This assessment is least preferred since this indicates a BPO that is not easily implemented and requires development of substantial mitigation strategies for identified risks. An assessment of "3" represents a risk area with one of the following scenarios: • The risk is likely to occur, but will have low negative impact • The is not likely to occur, but would have high negative impact • The risk has medium likelihood of occurring and would have medium negative impact if occurred The BPO with an assessment of "3" would require a moderate amount of mitigation planning for the identified risks for successful implementation. An assessment of "5" represents a risk area that is not likely to occur and would have a low negative impact, which is preferred since this indicates a BPO that is easily implemented and does not require substantial mitigation planning.

Evaluation Criteria/ Indicators	Evaluation Scale	Explanation of Scale
	resistance For Legal and Regulatory, likelihood will be measured as follows: 1 = Option has high likelihood of encountering legal or regulatory obstacles 3 = Option has moderate likelihood of encountering legal or regulatory obstacles 5 = Option has a low likelihood of encountering legal or regulatory obstacles The ease of implementation metric will be calculated using the following: Ease of Implementation = (Impact + Likelihood) / 2. An ease of implementation score will then be calculated for each criterion using the following scale: 1 = The BPO has significantly greater implementation challenges than the Baseline BPO (≥ 2 points higher than the Baseline BPO) 2 = The BPO has greater implementation challenges than the Baseline BPO (≥ 1 points higher and <2 points higher than the Baseline BPO) 3 = The BPO has similar ease of implementation to the Baseline BPO (<1 point difference with the Baseline BPO) 4 = The BPO has greater ease of implementation than the Baseline BPO (≥ 1 points lower and <2 points lower than the Baseline BPO) 5 = The BPO has significantly greater ease of implementation than the Baseline BPO (≥ 2 points lower than the Baseline BPO)	

* Academic affiliations/education and HR/staffing criteria not assessed at comprehensive capital planning sites, where no healthcare decision is required.

Ability to Support Other VA Programs

The purpose of this study is to determine how BPOs may support or jeopardize specific programs that have been identified as primary initiatives. These initiatives include enhanced DoD sharing, One-VA integration, promotion of specialized programs, and enhancement of services to veterans. This assessment will leverage information from Stage I to determine how the refined BPOs in Stage II would positively or negatively impact these VA objectives. Site teams will consider these impacts in evaluating the BPOs against the Baseline option.

Inputs and Assumptions

The primary inputs for this study will be the information gathered in Stage I regarding the following:

- **DoD sharing arrangements**: These include arrangements made between VA and DoD institutions to share facilities or services in order to provide care to veterans.

- **Specialized VA programs**: Specialized VA programs are defined as spinal cord injury, blind rehabilitation, seriously mentally ill, polytrauma, and Centers of Excellence.
- **Proposed enhancement of services**: Service enhancements or ancillary support services that would improve quality, cost effectiveness and continuity of care.
- **Integration with VBA and NCA facilities**: Co-location of VBA or NCA facilities with VA facilities to allow for easier access to VA services on the campus.

Outputs

A discussion will be provided of how each BPO impacts the VA programs, specifically, DoD sharing, One-VA integration, specialized VA programs, and enhancement of services to veterans. The resulting impacts will be quantitatively evaluated similar to other assessment areas.

Evaluation Scale

The evaluation scales for the Ability to Support VA Programs criteria are described in Table 6. Criteria will be assessed on a 5-point scale using the outputs of the Ability to Support VA Programs analysis.

Table 6: Evaluation Scale for Ability to Support Other VA Programs Evaluation Criteria

Evaluation Criteria/ Indicators	Evaluation Scale	Explanation of Scale
DoD sharing (Memoranda Of Understandings impacted by BPO)	1 = The BPO has the potential to provide the least enhancement relative to the Baseline BPO for the specific criterion 2 = The BPO has the potential to provide less enhancement relative to the Baseline BPO for the specific criterion 3 = The BPO has the potential to provide enhancement equivalent to the Baseline BPO for the specific criterion 4 = The BPO has the potential to provide more enhancement relative to the Baseline BPO for the specific criterion 5 = The BPO has the potential to provide the most enhancement relative to the Baseline BPO for the specific criterion	An assessment of "1" represents the least potential for the BPO to enhance one of the special VA programs, which is least preferred since this does not assist VA in meeting programmatic objectives. An assessment of "5" represents the most potential for the BPO to enhance one of the select VA programs, which is preferred since this assists VA in meeting programmatic objectives.
One VA integration (VBA and NCA impacted by BPO)		
Specialized VA programs (Specialized Care/Centers of Excellence impacted by BPO)		
Enhancement of services to veterans (Services in kind)		

Stakeholder Input

The purpose of the Stakeholder Input element in Stage II is to encourage a meaningful dialogue with veterans, veterans advocacy groups, staff, elected officials, and other interested parties, about the options being considered for a given study site. The Stakeholder Input element seeks to provide stakeholders with a series of convenient communication channels to express their interests, concerns, and priorities for the study. Through the CARES project website (www.va.gov\cares), Team PwC will also provide stakeholders with information about the study background and objectives, the options being considered, and the findings and recommendations for each study site.

Feedback from stakeholders will be considered by Team PwC in developing implementation plans and risk mitigation strategies for each BPO. This feedback will also be used by VA decision makers in weighing the advantages and disadvantages of each BPO and their associated implementation plans.

Inputs and Assumptions

Similar to the manner in which stakeholder inputs were gathered during Stage I, the inputs will include the following:

- Testimony and presentations made at public meetings, including public comments and questions
- A questionnaire soliciting stakeholder opinions which will be available for completion by persons who access the website
- A paper version of the questionnaire which will be available during public meetings
- A mail stop where the public can mail written comments and information about a particular study site

In addition, presentations and approved reports, along with meeting information and any other announcements concerning the study, will be promptly posted on the CARES Project website, the address of which will be prominently publicized.

In Stage II, stakeholders will be asked to comment on the BPOs selected for further study. However, stakeholders will not be limited as to the type of input which they can provide, and some stakeholders may choose to provide very personal information about the care they or a relative received, or about the anticipated need to provide future veterans with healthcare.

Key assumptions include:

- Stakeholder input will be limited to the study period
- Stakeholders will have 14 calendar days following the LAP meeting to submit additional written feedback via the website or mail stop
- Although the volume of stakeholder input received will not necessarily represent all stakeholder viewpoints, and may not be statistically significant, the feedback will still provide a useful indication of the likely interests, concerns, and priorities of stakeholders that must be considered if a BPO is to be implemented successfully
- Despite the absence of an assigned weight or evaluation scale to stakeholder input, Team PwC's site teams, the expert panel, and VA decision makers will nevertheless have access to the types of concerns expressed by stakeholders, including insights that may not be available through more objective data-gathering methods

For healthcare study sites, the questionnaire will specifically solicit views from stakeholders in the following five categories:

Table 7: Healthcare Category of Concern Definitions

Category of Concern	Definition
Access	Concerns about the travel time to the healthcare facility if this option is selected.
Healthcare Services & Providers	Concerns about a possible change in what services are available or who provides them.
Adequate Facilities	Concerns about whether the option would provide a modern facility capable of meeting healthcare demands in the future.
Use of Facilities	Concerns about whether this option makes good use of existing land and buildings.
Research & Education	Concerns about changes to research or education programs at the facility.

For capital planning study sites, the questionnaire will specifically solicit views from stakeholders in the following five categories:

Table 8: Capital Planning Category of Concern Definitions

Category of Concern	Definition
Adequate Facilities	Concerns about whether this option would provide a modern facility capable of meeting healthcare demands in the future.
Timeliness	Concerns about the length of time to finish construction called for by this option.
Availability of Care	Concerns that construction will disrupt the healthcare currently provided
Use of Facility	Concerns about whether this option makes good use of existing land and facilities.
Campus Environment	Concerns that this option will disrupt the historic quality or the natural setting of the current campus.

Outputs

Three types of stakeholder input (electronic comment forms, written comment forms and correspondence, and testimony) will be analyzed, categorized and summarized to provide information on:

- The number and percentage of stakeholders expressing a particular concern for a given BPO
- General themes expressed in oral testimony at the public LAP meetings and written input submitted at the LAP meetings, to the mail stop, or via the website
- When appropriate, selected comments which amplify or clarify stakeholder interests and concerns
- Implications of stakeholder feedback for successful implementation of the BPO

The tabulation and summary description of stakeholder input will be provided to Team PwC site teams and the expert panel for consideration in their discussion of the relative merits of each of the short-listed BPOs. The trade-off discussion will consider the five evaluation categories and stakeholder input. The evaluation findings of Team PwC will address the likelihood of stakeholder support for a given BPO, together with stakeholder interests, concerns and priorities to be addressed in implementation of the BPO.

Presentation of Results

The purpose of the results step is to provide VA decision makers with a balanced discussion of the trade-offs to be considered in making a final decision. The Stage II results will consist of a discussion of the relative merits of each BPO, comparing and contrasting the strengths and weaknesses of each BPO, and a plan to implement each BPO.

Independent Review Panel

To obtain greater input into the development of the final business plan reports, PricewaterhouseCoopers will convene an independent review panel (IRP) to provide an in-process review of the Stage II analysis, including a balanced review of the tradeoffs that were considered in developing the evaluation of each business plan option. This panel will:

- Provide input from multiple perspectives, to include academia and private sector management and clinical viewpoints.
- Discuss analysis and evaluations.
- Discuss the reasoning behind the evaluations, including the trade-offs between criteria.
- Discuss the relative merits of each option without providing definitive recommendations.
- Capture feedback for incorporation into the final site report.

The composition of the IRP will include VA representatives from Office of Strategic Initiatives (OSI) and Office of Asset Enterprise Management (OAEM), and Team PwC representatives (Partner facilitators, physicians with expertise on clinical quality, expert capital planners, real estate market experts or advisors, and site leaders). The IRP members will also include independent experts from academia and healthcare management.

Panel Results

Stage II will employ the IRP at the conclusion of the analysis phase and prior to the development of final business plan reports.

The purpose of the results step of the process is to provide an in-process review of the Stage II analysis, including a balanced review of the tradeoffs that were considered in developing the Stage II Report. The panel process will provide the basis for discussion on the analysis of each BPO's relative merits, comparing and contrasting the strengths and weaknesses of each BPO, and a plan to implement each BPO.

Purpose

Figure 2: A Diagram of the CARES Business Plan Study IRP Purpose

CARES Business Plan Study IRP

- Review Stage II site reports which will include analysis from capital, financial, reuse, and stakeholder management teams.
- Identify areas where the discussion of analysis results could be enhanced to allow a better understanding of the evaluation of each Business Plan Option.
- Review and synthesize the ongoing work of the PricewaterhouseCoopers (PwC) site team and the OAEM IDIQ contractors to determine if presentations clearly articulate tradeoff decisions and that those decisions represent best practices across the study areas (healthcare, capital and reuse).
- Guidance received by the Panel should be considered and potentially incorporated in revisions of the CARES Business Plan Study Stage II final report.

Operating Principles

The IRP will be guided by the following principles:

- All meetings of the Panel were held at PricewaterhouseCoopers offices at McLean, attendance will be limited to panel members and PwC Project Management, OAEM, and study site staff except where alternate arrangements were made in advance.
- The Panel will be chaired by a PwC partner The chairs will provide oversight to the preparation of all panel documents, including meeting agendas and meeting minutes.
- Panel members represented their expertise area and not their respective organizations or corporations.
- The panel members provided comments and recommendations verbally during the meeting.
- There was no attempt to reach consensus or to develop group recommendations within the committee. They did not make decisions or develop group positions.
- It was the responsibility of Team PwC in concert with the IDIQ to revise the Stage II final report as appropriate.
- No new data collection or analysis was conducted as a result of the recommendations of the committee members, unless directed by the VA contract officer.
- Detailed minutes of each committee meeting were documented.
- Panel documents were not made available to entities outside the offices of the Assistant Deputy Under Secretary for Health and Office of Asset Enterprise Management.
- Composition of the panel was subject to change, as needed, for the different sites identified in the CARES study.

Panel Process Outputs

The IRP members were provided with preparation material which will include an initial high level presentation of the VA CARES study, methodology, assumptions, site overview, and key site issues. During the panel meeting, the site study team will provide an overview presentation of site description, options, particular issues, option evaluation, supporting rationale, and conclusions.

The IRP discussed the conclusions of the study team and provide commentary on the analysis results and evaluation of each option. The IRP also weighed the breadth and depth of stakeholder concern about various alternatives and ensure that the evaluation of each option takes into account any information that was not captured in any of the other objective measures in forming the Panel's judgment.

The IRP provided feedback at the sessions that was used, as appropriate, by Team PwC and the IDIQ in finalizing the Stage II business plan report.

Implementation Plans

Following the IRP's discussion of preliminary results, implementation plans will be developed for all Stage II BPOs. The purpose of each plan will be to provide a roadmap for the local site teams for implementing the BPO, noting critical transition and implementation activities. The plan with highlight key milestones associated with implementation functions such as budgeting and funding, procurement, contracting for care, construction, human resource transition, as well as building activation and occupancy. The plan will help to appropriately sequence the implementation activities accounting for dependencies among the various functions.

An implementation schedule will be created using Microsoft Office's project management program (MS Project) in six-month intervals listing the critical implementation tasks. The plans will be based upon the capital planning construction schedules with overlays of additional functions. A supporting narrative will also be developed to more fully explain the implementation roadmap, explaining key milestones and dependencies, as well as risk mitigation strategies for all risks identified in the ease of implementation analysis. Ultimately the implementation plan will be used to guide the execution of the BPO, but may also provide VA additional insight to the risks and complexity of the BPO, as the results of the various BPOs studied in Stage II are considered.

Appendix C - Sensitivity Analysis

A sensitivity analysis, based on the outputs of the financial analysis, was performed for each of the Stage II BPOs for the Boston study site. A sensitivity analysis is a procedure performed to determine the sensitivity of the outcomes of a BPO. For example, if a small change in a factor, such as escalation rates, results in relatively large changes in the outcomes, the outcomes are said to be sensitive to that factor. This section first describes key factors of the sensitivity analysis at Boston, followed by a discussion of the detailed financial outputs associated with each factor.

Key Factors for Boston

The following key factors were considered in the sensitivity analysis for each BPO at Boston. These factors were selected based on the outputs from the financial analysis and the discussions conducted during the Independent Review Panel.

- Capital investment escalation rates – a change in capital investment escalation rates from 4% to 6.5% which was selected based on the last two years of construction cost history from RSMeans, a cost estimating organization
- Variable costs efficiencies – a change to variable costs based on 2% for renovation and 4% for new construction
- Accelerated construction schedule - the impact of removing the 10-year historic building demolition approval timeframe
- 10-year historic demolition schedule applied to historically eligible clinical buildings (constructed on or before 1957) at Brockton and Jamaica Plain.

Capital Investment Escalation Rates

The following shows the sensitivity of the BPOs to the capital investment escalation rates used for each BPO. In this analysis the assumption for capital investment costs are increased to 6.5% per year instead of 4.0%. The reason for this sensitivity analysis is to identify the sensitivity the individual BPOs have to the escalation rate for construction. Recently, construction rates have increased at a higher rate than expected. Therefore, this sensitivity analysis provides insight into what happens to a BPO if this trend continues.

Figure 1

BPO Comparison
2003 Net Present Dollars ($ Millions)
Reflects 2003-2033

	BPO 1	BPO 8	BPO 10	BPO 11
Total Net Present Cost	$12,555	$12,134	$11,616	$11,571
Total Net Present Cost Modified for Construction Escalation	$12,871	$12,400	$11,701	$11,815

As shown in Figure 1, the NPC increases for all four BPOs. The BPOs remain in the same order from least expensive to most expensive, i.e., BPO 10 being the least expensive, followed by BPO 11, BPO 8, and BPO 1 remaining the most expensive BPO.

Variable Cost Efficiencies

Variable costs were only subject to changes arising from workload in the financial analysis. Generally, however, it is anticipated that efficiencies in these variable costs are gained during renovation and construction. These efficiencies relate to buildings and functions being in closer proximity to each other, facilities built to provide state of the art medical care, and other enhancements such as private inpatient rooms. Figure 2 shows the results of the sensitivity analysis where operating efficiencies of 2% and 4% are incorporated for new renovations and new construction, respectively.

Figure 2

BPO Comparison
2003 Net Present Dollars ($Millions)
Reflects 2003-2033

	BPO 1	BPO 8	BPO 10	BPO 11
Total Net Present Cost	$12,555	$12,134	$11,616	$11,571
Total Net Present Cost Modified for Operating Efficiencies	$12,515	$12,094	$11,568	$11,531

As shown in Figure 2, the savings that result from the operating efficiencies range from about $18 to $40 million in NPC. Efficiencies occur in each of the four BPOs, with BPOs 1, 8, and 11 showing the greatest amount of savings due to similar activations. The BPOs involve a mix of new construction and renovation. This results in the efficiencies being conservatively analyzed with a 2% rather than 4% savings. The savings for each BPO are limited to the timeframe after which activation of the facility has occurred through 2033. The impact of the efficiencies does not change the ranking of the BPOs. BPOs with shorter construction schedules, and that consolidate campuses result in a greater savings.

Accelerated Construction Schedule

The implementation schedules for the four BPOs are reasonably long, a significant portion of which is caused by an assumed 10-year historic demolition approval process. This sensitivity analysis assessed the impact of removing this constraint on the timeframe for each BPO. Removing the constraint has the effect of reducing the impact of capital investment escalation rates and introducing some of the operating efficiencies earlier. Figure 3 shows the results of the accelerated construction schedule for each of the BPOs.

Figure 3

BPO Comparison 2003 Net Present Dollars ($ Millions) Reflects 2003-2033				
	BPO 1	**BPO 8**	**BPO 10**	**BPO 11**
Total Net Present Cost	$12,555	$12,134	$11,616	$11,571
Total Net Present Cost Modified for Accelerated Construction Schedule	$12,557	$12,081	$11,580	$11,558

As shown, the accelerated construction schedule has no impact on the ranking of the BPOs based on NPC. It does, however, have an impact on the total NPCs. BPO 1's NPC for the accelerated construction schedule is marginally more expensive due to the effect of time value of money and because the accelerated construction schedule does not result in significant operating cost savings compared to the normal schedule. BPOs 8, 10, and 11 have lower NPCs due to operating facilities being consolidated at an earlier date. This results in significant operating costs as reflected in the lower NPCs.

10-Year Demolition Schedule for Historically Eligible Clinical Buildings

Given the urgency of need to improve the healthcare delivery environment for the Boston veteran population and the overall scale of these facilities, this study assumed that demolition of clinical buildings not currently designated as historical would be expedited to make way for construction of new facilities. A sensitivity analysis was performed to determine the financial and implementation timing impacts of applying the 10 year assumption for historic demolition to clinical buildings that are historically eligible (built on or before 1957). The financial impacts are described here. The implementation timing impacts are described in further detail in the implementation plans for Boston, which are a separate document. Figure 4 summarizes the results of the sensitivity analysis.

Figure 4

BPO Comparison				
	BPO 1	**BPO 8**	**BPO 10**	**BPO 11**
Total Net Present Cost	$12,555	$12,134	$11,616	$11,571
Total Net Present Cost Modified for Historical Considerations	$12,555	$12,180	$11,591	$11,590

As shown in Figure 4, the change in the timing of demolition of historically eligible buildings at Brockton and Jamaica Plain has no impact on the ranking of the BPOs from lowest to highest

NPC. It does, however, have an impact on the total NPC of between $19 million and $46 million. Moreover, BPO 10 is considerably closer in overall NPC to BPO 11. The driver of the changes in NPC are changes to operating costs for BPOs 8, 10 and 11 (BPO 1 is not impacted by historical demolition considerations). As the construction timelines change, the shifts in workload between the different campuses happen in different years, and the subsequent adjustments and changes in operating costs happen at different times. In BPO 8 and 11, workload remains for a longer period in areas with higher operating costs. In BPO 10, workload remains for a longer period in areas with lower operating costs.

BPO 8 and 11 are impacted by the delay in the demolition start date for Building 8 on the Brockton campus. Building 8 contains the SCI&D program. If the 10 year application time for demolition of Building 8 is to occur, the start date for demolition will shift from January 2013 to January 2017. This will cause the completion date for construction of new facilities at Brockton to be delayed until January 2022. The delay in schedule will also affect the Bedford campus as it will need to remain operational in non-renovated space for a longer duration until the services are able to move to Brockton.

BPO 10 is impacted by the delay in the demolition start date for clinical Buildings 1, 2, and 4 on the Jamaica Plain Campus and Building 8 at the Brockton Campus. If the 10 year application time for demolition of historic buildings is to occur, the demolition start date will shift from January 2010 until January 2017 for Buildings 1, 2, and 4. Construction of new facilities will not finish until January 2021 on the Jamaica Plain Campus. Construction of new facilities will not finish until January 2022 on the Brockton Campus. This is due to a shift in the demolition start date from January 2013 until January 2017 for Building 8.

The delay in schedule will also affect both the Bedford and West Roxbury campuses as they will need to remain operational in non-renovated space for a longer duration until the services are able to move to Brockton or Jamaica Plain respectively.

Appendix D - Financial Definitions

- **Net Present Cost ("NPC")**: The sum of the annual cash-flows, discounted using the overall discount rate, so that a particular BPOs cash-flow can be valued on a relative basis to the other BPOs within a given study site. This is calculated as operating costs + capital costs (capital investments and periodic maintenance/replacement costs) + considerations.

- **Return on Investment ("ROI"):** The percentage return generated by each additional dollar invested. The ROI is always compared to BPO 1 and generally will be negative because the compared BPO has costs less than the BPO 1. The Financial Analysis for CARES Business Plan Studies uses the CEA, the term "benefits" means cost savings and cash-inflows estimated.

  - ROI calculation = [Positive savings minus (Option NPC minus BPO 1 NPC)]/(Option NPC minus BPO 1 NPC)

  - Positive savings: favorable difference in cost types (operational costs, capital investment costs, capital life cycle costs and reuse revenue), where Option X cost is less than BPO 1 cost. Negative savings, where Option X cost is greater than BPO 1 for any of the cost types, are not factored into the savings.

- **Internal Rate of Return ("IRR"):** A particular project's IRR is the discount rate that causes its future-value cashflows to result in a zero NPC.

- **Annual VA Investment Levels**: Annual investment levels required by the VA for a particular BPO are calculated by taking total capital investments divided by 30 years.

- **Return on Capital Investment**: Positive savings divided by Total Capital Cost (Capital Investments + Capital Periodic Maintenance/Replacement).

- **Total Operating Costs**: Annual operating cash-flows are discounted using the overall discount rate so that a particular BPOs operating cash-flow can be valued on a relative basis to the other BPOs operating cash-flow.

- **Total Capital Investment Costs**: Annual capital investment cash flows are discounted using the overall discount rate so that a particular BPOs capital investment cash-flow can be valued on a relative basis to the other BPOs.

- **Total Considerations**: Annual consideration cash flows are discounted using the overall discount rate so that a particular BPOs consideration cash-flow can be valued on a relative basis to the other BPOs.

- **Total Calculated Savings**: Favorable difference in cost types (operational costs, capital investment costs, capital periodic maintenance/replacement costs and reuse revenue) as

compared to other BPOs. Negative savings in cost types are not factored into the savings.

- **Direct Variable Costs**: The costs of direct patient care that vary directly and proportionately with fluctuations in workload. Examples include salaries of providers and the cost of medical supplies

- **Fixed Indirect Costs**: The costs not directly related to patient care, and therefore not specifically identified with an individual patient or group of patients. These costs are allocated to direct departments through the indirect cost allocation process. Examples include utilities, maintenance, and administration costs.

- **Fixed Direct Costs**: The costs of direct patient care that do not vary in direct proportion to the volume of patient activity. The word “fixed" does not mean that the costs do not fluctuate, but rather that they do not fluctuate in direct response to workload changes. Examples include depreciation of medical equipment and salaries of administrative positions in clinical areas.

Appendix E - Glossary

Acronyms

AFB	Air Force Base
AMB	Ambulatory
BPO	Business Plan Option
CAI	Capital Asset Inventory
CAP	College of American Pathologists
CARES	Capital Asset Realignment for Enhanced Services
CBOC	Community Based Outpatient Clinic
CIC	CARES Implementation Category
DoD	Department of Defense
FTEE	Full Time Employee Equivalent
GFI	Government Furnished Information
HEDIS	Health Plan Employer Data and Information Set
ICU	Intensive Care Unit
IP	Inpatient
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
OP	Outpatient
MH	Mental Health
MOU	Memorandum of Understanding
N/A	Not Applicable
NFPA	National Fire Protection Association
PTSD	Post Traumatic Stress Disorder

SOW	Statement of Work
VA	Department of Veterans Affairs
VACO	VA Central Office
VAMC	Veterans Affairs Medical Center
VBA	Veterans Benefits Administration
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network

Definitions

Access	Access is the determination of the numbers of actual enrollees who are within defined travel time parameters for primary care, acute hospital care, and tertiary care after adjusting for differences in population and density and types of road.
Alternative Business Plan Options	Business Plan Options generated as alternatives to the Baseline Business Plan Option providing other ways VA could meet the requirements of veterans at the Study Site.
Ambulatory Services	Services to veterans in a clinic setting that may or not be on the same station as a hospital, for example, a Cardiology Clinic. The grouping as defined by VA also includes several diagnostic and treatment services, such as Radiology.
Baseline Business Plan Option	The Business Plan Option for VA which does not change any element of the way service is provided in the study area. "Baseline" describes the current state projected out to 2013 and 2023 without any changes to facilities or programs or locations and assumes no new capital expenditure (greater than $1 million). Baseline state accounts for projected utilization changes, and assumes same or better quality, and necessary maintenance for a safe, secure, and modern healthcare environment.

Business Plan Option (BPO)	The options developed and assessed by Team PwC as part of the Stage I and Stage II Option Development Process. A business plan option consists of a credible healthcare plan describing the types of services, and where and how they can be provided and a related capital plan, and an associated reuse plan.
Capital Asset Inventory (CAI)	The CAI includes the location and planning information on owned buildings and land, leases, and agreements, such as enhanced-use leases, enhanced sharing agreements, outleases, donations, permits, licenses, inter- and intra-agency agreements, and ESPC (energy saving performance contracts) in the VHA capital inventory.
CARES Implementation Category (CIC)	One of 25 categories under which workload is aggregated in VA demand models. *(See Workload)*
Clinic Stop	A visit to a clinic or service rendered to a patient.
Clinical Inventory	The listing of clinical services offered at a given station.
Code	Compliance with auditing/reviewing bodies such as JCAHO, NFPA Life Safety Code or CAP.
Community Based Outpatient Clinic (CBOC)	An outpatient facility typically housing clinic services and associated testing. A CBOC is VA operated, contracted, or leased and is geographically distinct or separate from the parent medical facility.
Cost Effectiveness	A program is cost-effective if, on the basis of life-cycle cost analysis of competing alternatives, it is determined to have the lowest costs expressed in present value terms for a given amount of benefits.
Domiciliary	A VA facility that provides care on an ambulatory self-care basis for veterans disabled by age or diseases who are not in need of acute hospitalization and who do not need the skilled nursing services provided in a nursing home.
Enhanced Use Lease	A lease of real property to non-government entities, under the control and/or jurisdiction of the Secretary of Veterans Affairs, in which monetary or "in-kind" consideration (i.e., the provision of goods, facilities, construction, or services of the benefit to the Department) is received. Unlike traditional federal leasing authorities in which generated proceeds must be deposited into a general treasury account, the enhanced-use leasing authority

	provides that all proceeds (less any costs than can be reimbursed) are returned to medical care appropriations.
Good Medical Continuity	A determination that veterans being cared for a given condition will have access to the appropriate array of primary, secondary, and tertiary care services required to treat that condition.
Initial Screening Criteria	A series of criteria used as the basis of the assessment of whether or not a particular Business Plan Option has the potential to meet or exceed the CARES objectives.
Inpatient Services	Services provided to veterans in the hospital or an inpatient unit, such as a Surgical Unit or Spinal Cord Injury Unit.
Market Area	Geographic areas or boundaries (by county or zip code) served by that Network's medical facilities. A Market Area is of a sufficient size and veteran population to benefit from coordinated planning and to support the full continuum of healthcare services. (*See Sector)*
Mental Health Indicators	See the end of this document.
Multispecialty Clinic	A VA medical facility providing a wide range of ambulatory services such as primary care, specialty care, and ancillary services usually located within a parent VA facility.
Nursing Home	The term "nursing home care" means the accommodation of convalescents or other persons who are not acutely ill and not in need of hospital care, but who require nursing care and related medical services, if such nursing care and medical services are prescribed by, or are performed under the general direction of, persons duly licensed to provide such care. Such term includes services furnished in skilled nursing care facilities, in intermediate care facilities, and in combined facilities. It does not include domiciliary care.
Primary Care	Healthcare provided by a medical professional with whom a patient has initial contact and by whom the patient may be referred to a specialist for further treatment. *(See Secondary Care and Tertiary Care)*
Reuse	An alternative use for underutilized or vacant facility space or VA owned land.

Risk	Any barrier to the success of a Business Planning Option's transition and implementation plan or uncertainty about the cost or impact of the plan.
Secondary care	Medical care provided by a specialist or facility upon referral by a primary care physician that requires more specialized knowledge, skill, or equipment than the primary care physician has. *(See Primary Care and Tertiary Care)*
Sector	Within each Market Area are a number of sectors. A sector is one or more contiguous counties. *(See Market Area)*
Stakeholder	A person or group who has a relationship with VA facility being examined or an interest in what VA decides about future activities at the facility.
Tertiary care	High specialized medical care usually over an extended period of time that involves advanced and complex procedures and treatments performed by medical specialists. *(See Primary Care and Secondary Care)*
Workload	The amount of CIC units by category determined for each market and facility by the Demand Forecast.