ST. ELIZABETHS WEST CAMPUS
CULTURAL LANDSCAPE REPORT

Chapter VI: St. Elizabeths Hospital Existing Landscape

A. INTRODUCTION TO EXISTING LANDSCAPE

This chapter describes the character of the existing St. Elizabeths Hospital landscape. Combined with the accompanying plans and images, it identifies character-defining features of the cultural landscape in 2007. As identified in the scope of work, this CLR was predicated on the 2005 Cultural Landscape Assessment (CLA) as the base documentation for the existing conditions. Field investigation was carried out in 2006 to update the findings of the 2005 CLA with field work primarily conducted in 2004. Additional field review took place in November 2006 and February 2007. The objective of the 2006 and 2007 field visits and investigation was to update and augment previous mapping and reflect changes made in the landscape between the two dates.

The narrative, which speaks directly to graphic materials, begins with a summary of the St. Elizabeths Hospital West Campus Landscape Assessment Plan produced by Heritage Landscapes in 2005. These findings are followed by an updated and detailed look at the character-defining features of the landscape in 2007. Character-defining features, as outlined in the U.S. Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (Guidelines) are discussed as they pertain to each landscape area on the existing conditions plan. In-depth condition assessments of vegetation and built elements follow the general narrative on the character-defining features of the hospital landscape. These character-defining features include:

- Natural Systems and Features
- Land Uses and Cultural Traditions
- Spatial Organization and Landscape Patterns
- Views and Visual Relationships
- Topography and Drainage
- Vegetation
- Circulation
- Landscape Structures
- Constructed Water Features
- Small-scale Features, Furnishings and Objects
- Archaeological Sites
Plans accompanying this chapter include: Plan VI.1: 2002 Aerial Photograph, Plan VI.2: 2007 Existing Conditions Campus Plan, Plans VI.3 through VI.6: Existing Conditions Vegetation, and Plans VI.7 through VI.10: Existing Conditions Built Elements. The 2002 aerial photograph presents the entire property at a scale of 1”= 300’ while Plan VI.2 displays the entire campus at a scale of 1”= 300’. This plan displays existing structures, circulation, and vegetation with different colors and a symbol key that identifies their type and materials. Plans VI.3 through Plan VI.10 show quadrants of the campus at a scale of 1”= 150.’ For clarity, tree identification and condition assessments are illustrated in black-and-white on Plans VI.3 through VI.6. The text uses both common and scientific names for trees and shrubs with the compiled list of species and common names listed in Appendix A. Plans VI.7 through VI.10 display codes for the condition assessment of built elements to include roads, curbs, paths, and walls. Vegetation is not shown on these four plans for clarity. Primary sources of the existing conditions plans include a digitized version of the 1947 Army Corps of Engineers Topographic Survey, Plan VI.1: 2002 Aerial Photograph, detailed field notes, observations, and a series of existing conditions photographs by Heritage Landscapes.

The images at the end of the chapter serve as documentation of the landscape character as it exists in 2007. All images are digital photographs taken by Heritage Landscapes during field reconnaissance between 2004 and 2007. They are referenced in the narrative discussion as figures and illustrate the character-defining features of each landscape area. Pertinent information concerning the figure and digital image file numbers are noted in the caption. All plans and images are presented at the end of this chapter.

B. LANDSCAPE ASSESSMENT PLAN REPORT FINDINGS (2005)

This section summarizes the St. Elizabeths Hospital West Campus Landscape Assessment Plan including an overview of the report scope and methodology and describes cultural landscape feature findings that focus mainly on vegetation and built elements of the historic West Campus. Detailed assessment results from 2005 have been updated and incorporated into the discussion of the existing landscape character and plan for 2007.

The Landscape Assessment Plan was intended to serve as a baseline for assessing landscape conditions at the West Campus. Overall, the study found that the campus was historically significant and should be effectively stewarded toward historic landscape preservation. The details of the landscape condition assessment were developed to provide management and maintenance tasks to undertake a comprehensive landscape conservation and management effort. The plan emphasized that the hospital’s historic importance warrants a high degree of stewardship to retain its integrity as a unique example of a rare landscape type: the therapeutic landscape of a historic psychiatric hospital.

U.S. General Services Administration (GSA) commissioned Heritage Landscapes, Preservation Landscape Architects & Planners, to conduct a condition assessment of the landscape of the 176-acre campus. The landscape study was a component of the Building, Landscape, and Archaeological Assessment – St. Elizabeths Hospital West Campus (2005) led by Farewell Mills Gatsch Architects. The landscape assessment was carried out with reference to federal
preservation standards and guidelines for cultural landscape preservation. The scope of work for the assessment plan included three basic tasks:

- Gain an understanding of the landscape history and evolution by reviewing previous studies and nominations and obtaining and studying historic maps, aerial photographs and photographs
- Develop detailed mapping and assess the condition of the extant landscape features applying a ranking system for field observed conditions
- Craft recommendations for landscape conservation through maintenance and management based on the field observations and assessment of conditions

Based on both historic and current conditions Heritage Landscapes divided the campus into the five distinct landscape units that are also used throughout this CLR. Character-defining features were assessed for each unit in order to organize landscape assessment findings and preservation and maintenance recommendations. Condition assessments were observation based, tested and coordinated by Heritage Landscape field staff. In addition to the report, assessment products included existing conditions digital photographs, inventoried tree collections, inventoried roads, paths, and walls, and maintenance checklists.

B1. Spatial Organization Findings

The St. Elizabeths West Campus was delineated by the plateau area, Units 1 and 2, and the north and west slopes, Units 3, 4 and 5. Recommendations suggested that the basic spatial organization of the campus be respected as rehabilitation of the property proceeds.

B2. Topography Findings

In general, the topography of the West Campus was found to be an intact, historic character-defining feature of the landscape. Areas where drainage failures or day-lighting of drainage pipes caused erosion and gullying were noted in the assessment. Recommendations suggested that the unique topography of the plateau and slopes should be managed for erosion and drainage control.

B3. Vegetation Findings

Assessment findings and recommendations for vegetation were organized to address trees, turf, meadow, and woodland areas. In 2005, 639 trees were assessed in Units 1 and 2, including 573 standing trees and 66 stumps. A remarkable inventory of dominant trees and specimens were present, but considerable recent losses were noted. Most large trees with over 25” diameters were generally in decline and required major maintenance; 32% of these trees that were still standing can be restored to health with minor pruning. A need to develop clear tree protection protocols and monitoring systems was noted. Recommendations for turf maintenance were to retain broadleaf flowering plants like clover and English daisy on the terrace ground plane.

Woodland in Units 3, 4, and 5 consisted of largely younger woodlands with undesirable invasive species. Notable smaller groves of older, native trees were also located. Recommendations
suggested that woodland management be undertaken to direct the long-term growth and health of woodlands to continue to provide vegetative cover and erosion control on sloping topography. Recommendations also included the preservation of the north and northwest open areas with panoramic views over the Anacostia River with a proposed grasses and wildflowers meadow cover.

**B4. Circulation Findings**

Findings and recommendations for circulation were arranged by roads, curbs, and walks. Heritage Landscapes mapped and assessed the condition of over 890,469 square feet of roads. Road sections of old concrete largely corresponded to the 1947 drive layout on the Army Corps of Engineers Topographic Survey and newer concrete was noted for road expansion and resurfacing. Action was recommended for 37% of roads to extend their lifespan. About 39% of poor condition or buried roads require replacement or another intervention to be determined. Heritage Landscapes mapped and assessed the condition of over 37,730 linear feet of curbs. Some sections of original cobble gutters were found, paved over and below grade at the drive margins. The retention of historic materials was recommended. Heritage Landscapes mapped and assessed the condition of over 58,307 linear feet of walks. Historic brick walks concentrated in Unit 1 were found to be character-defining within the landscape. Recommendations included repair or replacement in-kind to match. Suggestions for the replacement of concrete walks included the use of local aggregate and sand to match color and texture. The use of asphalt for walks was discouraged.

**B5. Landscape Structure Findings**

Over 20,616 linear feet of walls, fences, handrails and other landscape structures were assessed by Heritage Landscapes. Following the findings of the 2005 CLA, the historic boundary wall along Martin Luther King Avenue was found to be in generally good condition requiring only minor repair. The report suggested inspection of the chain link fences along slopes for the desired level of perimeter control. Metal handrails were determined to need variable levels of repair to address deterioration and damage. Sections of historic stone and brick walls, especially near the Ice Plant, required rapid stabilization, repair, or in-kind replacement. Two historic summerhouses and a metal trellis were identified character-defining features worthy of preservation.

**B6. Water Features Findings**

Few constructed water features were identified within the West Campus. The report recommended the stabilization of a fountain basin at the south façade of the Center Building. The report also noted issues of drainage and erosion control across the campus.

**B7. Site Furnishings and Objects Findings**

Limited site furnishings were found within the West Campus including historic light standards, fire hydrants, hand pumps, and benches. The report recommended a detailed assessment of the Civil War Cemetery headstones by a stone conservator.
C. EXISTING LANDSCAPE UNITS

Review of chronological mapping, aerial photographs, and site investigation of the West Campus yielded five definable landscape units that were outlined in the 2005 Landscape Assessment Plan. The units divide the West Campus into components that reflect patterns of landscape organization. Within the natural, constructed, and legal boundaries of the campus, units having particular character emerge based on land use, spatial organization, views and visual relationships, topography, vegetation, circulation and structures. Boundaries of units may be loosely delineated by vegetation or slopes or clearly defined by physical features such as a wall, path or road. Some of these features remain constant while others change over time.

Each landscape unit has a distinct, identifiable character. The character of the unit is part of the character of the hospital landscape as a whole. Identifying and defining these areas or units clarifies the spatial organization of the property and facilitates a clearer understanding of the historic evolution of the historic West Campus. Establishing landscape units, or component landscapes, also helps situate the discussion of character-defining features.

The five landscape units defined in 2005 are used in the discussion of the 2007 campus landscape existing conditions. Two landscape units are located on the upland plateau and three address the framing slopes. These areas are shown Plan I.1 in Chapter I.

C1. Unit 1: Therapeutic, Ornamental Landscape and Overlook around Center Building and Main Gate

This area of some 42 acres defines the original construction and ornamental landscape development of the original 19th century St. Elizabeths landscape to include the curving overlook drive that affords panoramic views over the city and river confluence to the north and west. The landscape is defined by the early circulation system of pleasure walks and drives and many remaining early plantings. Unit 1 includes most of the 19th century buildings on the West Campus.

C2. Unit 2: Therapeutic, Ornamental Landscape around Pavilions and Secondary Entrances

This area of some 34 acres is comprised of pavilion architecture set within a landscape of curving drives, paths for strolling, scenic tree plantings for educational interest, and open lawns, which was developed as the second phase of construction on the West Campus. Unit 2 combined with Unit 1 make up the upper plateau of the campus.

C3. Unit 3: Agricultural Landscape of Greenhouses, Fields and North Slope

This sloping area of about 37 acres that was historically open and contained agricultural row crops remains partially open today. It contains the greenhouse complex, former community gardens, and the nearby 19th-century Burroughs Cottage with some remnants of nursery use, in
particular, rows of American holly (*Ilex opaca*) and citrus trees near the greenhouses. The surrounding formerly agricultural fields are now comprised of open turf, young woodlands, and thickets.

C4. **Unit 4: Service Landscape and Ravine around Powerhouse and Service Buildings**

This area is down slope and west of the plateau of Units 1 and 2. It encompasses about 21 acres defined by somewhat circuitous access roads that accommodate the steep grades and slopes. Woodland cover of varying age and quality is prevalent in the area. Buildings in Unit 3 range from the 19th century Ice Plant to the contemporary Warehouse and Laundry building.

C5. **Unit 5: Civil War Cemetery and West Slope**

Covering the western and southwestern slopes, this area of about 31 acres is principally young woodland cover with the exception of the cemetery area and the extreme southern tip of the unit, south of a contemporary materials dump. The Civil War Cemetery is the primary cultural resource in this area.

D. **2007 LANDSCAPE CHARACTER AND EXISTING CONDITIONS PLAN**

The following narrative describes the character of the hospital landscape in 2007 according to character-defining features, while specifically referring to Plans VI.2 through VI.10 and existing conditions photographs. Character-defining features as specified by federal guidance include:

- **Natural Systems and Features**—Natural aspects that often influence the development and resultant form of a landscape
- **Land Uses and Cultural Traditions**—Organization, form, and shape of the landscape in respect to land use; practices that influence land use, patterns of division, building forms, and the use of materials
- **Spatial Organization and Land Patterns**—Arrangement of elements creating the ground, vertical, and overhead planes that define and create spaces; the location of buildings and structures in the landscape
- **Views and Visual Relationships**—Features that create or allow a range of vision which can be natural or designed and controlled
- **Topography and Drainage**—Three-dimensional configuration of the landscape surface characterized by features and orientation; onsite drainage flows relating to topography
- **Vegetation**—Indigenous or introduced trees, shrubs, vines, ground covers, and herbaceous materials
- **Circulation**—Spaces, features, and materials that constitute systems of movement
- **Constructed Water Features**—The built features and elements that utilize water for aesthetic or utilitarian functions
- **Landscape Structures**—Three-dimensional constructs such as houses, barns, garages, stables, bridges, and memorials
VI.7
Heritage Landscapes and Robinson & Associates, Inc.

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- **Small-scale Features, Site Furnishings and Objects**—Elements that provide detail and diversity combined with function and aesthetics
- **Archaeological Sites**—Sites containing surface and subsurface remnants related to historic or prehistoric land use

These landscape character-defining features are used throughout this CLR to focus on the definition and details of the West Campus as it has evolved through time to the present. The following text refers to Plan VI.2 which portrays and presents the existing conditions of the landscape using the character-defining features listed above. This landscape plan contains full color-coded enumeration of landscape materials and composition as identified from available source material at a scale of 1”= 400’. Existing conditions structures, circulation, and vegetation are highlighted with different colors by type and material and listed in the symbol key. Detailed vegetation and built elements plans are also described in their respective sections.

**D1. Natural Systems and Features**

Natural systems and processes often direct the development and form of a landscape. At St. Elizabeths Hospital, the Anacostia River is the primary factor and cause of land form development. The West Campus is characterized by the prominent terrace overlooking the Anacostia River (see Figure VI.1). The soils of the bluff include Pliocene and Pleistocene river terrace deposits of gravel, sand and loam.\(^5\) Prior to late 19\(^{th}\) century modifications of the river channel, the slopes of the bluff formed part of the riverbank of the Anacostia.

The historical development of the west bank of the Potomac River during the colonial period left the St. Elizabeths Hospital vicinity as a largely rural zone within Washington DC. This pattern of land use persisted into the 19\(^{th}\) century when a large, available, and rural location was sought for the first national mental health institution. The physical separation and visual connection between the hospital site and the urban core of the capital led to the bluff’s selection. Similarly, the selection for locating the capital related to the defensible, surrounding topographic bowl of which St. Elizabeths Hospital is now a part.

Today, the Anacostia region of Washington DC preserves remnants of its once rural character with several large, contiguous tracts in forest, agricultural, and other low intensity land use. St. Elizabeths Hospital West Campus contributes to this condition and provides wildlife habitat in a primarily urban region. The woodland cover and connections to other adjacent wooded parcels offer protection to many species of wildlife including large mammals such as white-tailed deer. Endangered bald eagles are reported to be nesting in the mature woodlands of Units 4 and 5 overlooking the area west of the power plant and warehouse.\(^6\)

**D2. Land Uses and Cultural Traditions**

The land uses and cultural traditions that characterize the landscape of St. Elizabeths Hospital today relate more to the rehabilitation of the campus and its conversion to new uses than to its historical function. Some historic land uses persist although the campus remains largely vacant with the exception of security personnel and the periodic presence of government contractors and work crews. Recently reestablished tree maintenance and turf mowing has shifted the campus
landscape toward its former characteristics when it was carefully stewarded as the hospital grounds. Recent work to secure the campus includes repairing dilapidated boundaries with chain link fencing. While this work evokes the condition of a historically enclosed and secure campus, the repair work is of a temporary nature as it was observed as a partial replacement that may be completed or replaced with additional fencing. The repaired fencing does not conform to the historic boundaries of the campus.

Enduring cultural traditions at St. Elizabeths Hospital include the veneration of the Civil War Cemetery by historical societies and the cultivation of food crops at the community garden near the Greenhouse Complex. The community garden program was started in 1998 by Urban Oasis and ended in 2005. This program was based on outside volunteers that cultivated garden areas formerly tended by residents and patients during the period of significance. Though the community gardens are no longer actively operated, remnants of them can still be seen in the landscape. These remnants are evidence of continued horticultural operations and land uses, and cultural traditions that began during the period of significance and were sustained to some degree into the early 21st century. The cemetery and the agricultural fields in the area of the former community gardens remain in historic locations. In recent years, at least one historical society visited the fenced Civil War Cemetery overlooking the core of Washington DC, as seen in Figure VI.2. Although the former community gardens represent a small remnant of the former agricultural land usage, the persistence of farming and horticultural legacy into the 21st century at the hospital was maintained by volunteer efforts. Figure VI.3 shows garden plots south of the Greenhouse Complex in Unit 3. Continued land uses and cultural traditions are exemplified by the remnant gardens and cemetery visitation.

The potential exists to reestablish and enhance some historic land uses on the West Campus. Increased site occupation with a resident or commuting population combined with appropriate stewardship of the campus grounds would enhance the historic, therapeutic value of the landscape that is now primarily experienced by security personnel. Additionally, the tradition of supporting the surrounding urban landscape could be reestablished with the reactivation of an institution that draws from a local labor force. St. Elizabeths Hospital West Campus no longer supports surrounding neighborhoods as it did traditionally, though generations of residents who served the hospital during its active period still reside in the historic Anacostia district.

D3. Spatial Organization and Land Patterns

The spatial organization of the West Campus corresponds strongly to topography and sequence of building construction, as outlined in the delineation of the five landscape units. The principal areas of designed landscape are arrayed atop the plateau and framed by 19th and early 20th century buildings and circulation patterns in Units 1 and 2. The three-dimensional organization and land patterns of the plateau are shaped principally by the system of drives and adjacent building masses. Discreet spatial zones within Unit 1 include the component landscapes north and south of the Center Building, the site of the former West Lodge Building southwest of the Center Building, the Athletic Field landscape, and the landscape between the Allison Complex and the brick perimeter wall. Discreet landscapes in Unit 2 include the large central lawn west of Administration (A), B, C, and M Buildings and the landscape around J, K, and L Buildings.
The slopes adjacent to the plateau encompass service areas, the Civil War Cemetery, woodlands and meadows of Units 3, 4, and 5. The spatial organization of these lands is linked to sloping topography, a skeleton of roads and vegetation in meadows, woodlands, and in the case of the cemetery, trees over lawn. The historic, direct riverfront access and river edge were removed in the early 20th century with railroad and highway construction. Discreet spatial zones in these Units include the Point landscape of Units 1 and 3, the lawn and trees around Burroughs Cottage, and the Civil War Cemetery.

D4. Views and Visual Relationships

Views within the West Campus are generally constrained by surrounding building mass. The spatial zones noted above constitute distinct visual spaces. In Units 1 and 2, open lawn areas with an arboretum-like tree collection create centralized green spaces with a perimeter of historic buildings and structures. Near the edges of the green spaces, views of turf and trees are frequently internalized by clusters of buildings. Figure VI.4 shows the central lawn of Unit 2 with individual trees and walks flanked by the perimeter Buildings A, B, C, and M. Outside of the core ring of buildings, views open from the plateau and offer broad panoramic vistas to the north and west (see Figure VI.1). In particular, Golden Raintree Drive the winding overlook drive that divides Units 1 and 3 provides stunning northern views over the Anacostia and Potomac Rivers and the Monumental Core of the capital. In between building mass and vegetation, the high ground of Units 1 and 2 also provides episodic views out to the north and west. The western side of J and K Buildings present a smaller vista across the river. Cedar Drive between Gate No. 1 and Golden Raintree Drive also offers slot views to the north over the Point.

Units 3, 4, and 5 lie downhill from the plateau resulting in different visual relationships than Units 1 and 2. In these low-lying areas, views are largely determined by dense woodland edge and open spaces such as clearings and roads. Within the wooded areas, the structure and type of forest community determines views. For example, the older beech and oak grove in the Power House ravine of Unit 3 affords more expansive views below the canopy than do the young wooded thickets that characterize Units 3 and 5. The open understory of the Civil War Cemetery in Unit 5 offers long views across the river to the west. At a larger scale, the two Power House smokestacks draw visual connections between elements in the skyline of the Monumental Core of the city. Indeed, the wooded Anacostia riverbank of Units 3 and 5 make up a component of the largely vegetated topographic bowl surrounding the capital.

D5. Topography and Drainage

The distinctive topography at St. Elizabeths has been shaped by both natural processes and human manipulation. While the overall shape of the upland plateau and sloping sides is a result of historical fluvial geomorphology associated with the Chesapeake Bay watershed, many areas exhibit disturbed soils and altered topography principally due to construction activities. The designed landscape and buildings are sited on a plateau overlooking the confluence of the Anacostia and Potomac Rivers at an elevation of 150 to 170 feet above sea level. The plateau is relatively level and makes up the eastern half of the West Campus. The topography in this area
was altered slightly for the construction of buildings and associated tunnels, walks, circulation systems, and a pond that was once south of the Center Building.

The west side of the property slopes down moderately to the northwest by the overlook, and more steeply by the Civil War Cemetery. This sloping topography of the West Campus affords some views across the Anacostia River to the city of Washington DC. This sloping topography is also characterized by a number of ravines that historically carried surface water runoff from St. Elizabeths to the Anacostia River. Two ravines, one north of the Burroughs Cottage and the greenhouses and one north of Q Building were filled and regraded between 1961 and 1966. The ravine west and south of the Powerhouse remains today and is a distinct topographical feature.

In terms of drainage, an early concern for the removal of surface water at St. Elizabeths Hospital altered natural drainage patterns. Standing water was considered a health issue and a subsurface drainage system was developed. Various watercourses were redirected to an extensive underground drainage system in the early construction of the hospital grounds. Fresh water was provided by two springs that are no longer extant. The hospital also had direct access to the Anacostia River via a wharf located west of current Interstate 295. Changes in the Anacostia channel and construction along the banks for the railroad and U.S. Navy Reservation severed the connection between St. Elizabeths and the adjacent river.

Today, intermittent streams in the remaining ravines channel overland and subsurface drainage from higher elevations of the campus to the Anacostia River. The stream banks are highly eroded and contain remnants of failed concrete erosion control structures. Figure VI.5 shows the deteriorated drainage structure and paved channel between Golden Raintree Drive and Sweetgum Lane. Additionally, the hospital is located within the 178-square mile Anacostia River Watershed, a relatively small component of the Potomac River Watershed that flows into the Chesapeake Bay. Subsurface and overland flow from the West Campus forms part of the 33-square mile Downstream Anacostia River Subwatershed.

D6. Vegetation

Comprised of groups of plants, individual plants, agricultural fields, planting beds, formal and informal tree groves, woodland, meadow, and turf, vegetation is a historically significant character-defining element of the landscape at St. Elizabeths Hospital. For the West Campus, the most distinctive vegetative feature is the deciduous, evergreen and ornamental tree collection planted in an arboretum that offers scenic beauty, shade and horticultural education. Remarkably, a number of trees planted at the outset of hospital’s development remain on the campus today, and some individual trees pre-date the development of the asylum. Many of these trees attest to use of a therapeutic landscape at Kirkbride-influenced mental hospitals as an important part of patient treatment. Overall, the collection of trees is largely healthy, although the decline of old trees is noted throughout the core campus area.

Some 639 trees and stumps are located on the plateau of Units 1 and 2 and about 300 additional trees in Units 3, 4, and 5 contribute to approximately 900 individually surveyed trees on the West Campus. Arboreal diversity at the hospital includes at least 160 species, which are listed in Appendix A.
Woodland cover is found throughout ravines and slopes in Units 3, 4, and 5. Young, volunteer growth makes up the majority of the woodland cover in these units although each contains discreet areas of high-quality woodland as well as mature, individual trees. In Unit 3, a grove of large tulip poplar (*Liriodendron tulipifera*), American elm (*Ulmus americana*), oak (*Quercus* species), and hickory (*Carya* species) lines the ravine along Sweetgum Lane. Of additional note, an older row of American hollies (*Ilex opaca*) lines the entrance of Sweetgum Lane. In Unit 4, significant groupings of large trees are located in the ravine south of the Power House and hillside north of Holly Street. Species within the Power House ravine include American beech (*Fagus grandifolia*), tulip poplar (*Liriodendron tulipifera*), and oak (*Quercus* species) as shown in Figure VI.6. The largest trees in the Unit 5 woodland are along the West Campus perimeter due west of the Building Q parking lot. This relatively small patch of large oaks (*Quercus* species), black tupelo (*Nyssa sylvatica*), and American beech (*Fagus grandifolia*) is a component of a larger grove located west and outside of the St. Elizabeths Hospital boundary. A small patch of bamboo (*Phyllostachys* species) is spreading into this area from a neighboring residential property. The remaining woodlands in Units 3, 4, and 5 contain primarily pioneer species and late-20th century regeneration with limited groups of older trees. Much of the Unit 3 woodlands are former agricultural fields and orchards. Meadow cover near the plateau allows for wide panoramic vistas.

D7. Circulation

Circulation patterns and materials contribute to the particular character of the West Campus of St. Elizabeths Hospital. Roads, drives, trails, walks, paths, parking and loading areas interweave and form a network of collectively and individually significant elements. Gracefully sweeping curvilinear circulation patterns are suggestive of design influences of Andrew Jackson Downing (1815-1852) and the Beautiful, Picturesque, and Gardenesque design styles and have defined the St. Elizabeths Hospital landscape since its earliest days.

This flowing circulation network was continually developed for the benefit of patients throughout the late 19th century. Early walks at St. Elizabeth’s Hospital are noted “Exercise & Pleasure Roads & Walks” and are distinguished from “Agricultural Roads” on the 1872 Topographical Plan. While many of the original road alignments exist at the West Campus, expansion of parking areas and road widths has modified several areas of the historic hospital landscape. This issue is particularly prevalent around the south side of the Center Building and elsewhere in Unit 1 of the early campus core. Throughout the campus core, many buildings have changed functions, resulting in the removal and alteration of historic path layouts. Though circulation patterns have been altered, the form of the historic circulation pattern is still visible today, making the drives and walks contributing features to the landscape.

Alignment, width, surface and edge treatment and materials contribute to the character of circulation features. Road and walk materials at St. Elizabeths have changed over time, though the drives and some walks retain their characteristic curvilinear alignments. Early photographs show roads to be compacted earth and gravel with cobble gutters, though current roads and walks are primarily asphalt (74% or 655,558 square feet) and concrete (24% or 213,981 square feet). Today, “Old Concrete” roads consist of 14% of the vehicular roads, and many of these drives
mark routes that appear on the circa 1947 Overall Plan. Figure VI.7 shows an “Old Concrete” road with concrete curbs and a concrete walk. Historic road edge details included cobblestone gutters that drained to a subsurface system. No cobble gutters remain at surface level today; the majority has been replaced by concrete curbs and curb drain inlets. However, some cobble gutters may exist under pavement. Most curbs are concrete (93.6%), but a small number of stone curbs accent various streets, notably Pine Street from Gate House No.2 and Redwood Drive west of Hitchcock Hall and the Administration Building. Existing brick roads and walks are primarily contained within Unit 1. It is likely that these paths were established in the last decades of the 19th century. Herringbone brick patterns are visible on paths surrounding many of the structures associated with the initial waves of building on the West Campus; however, now a number of connecting brick paths are buried just under the surface of the lawns.

Vestiges of a now-abandoned, single-track railroad spur remain at St. Elizabeths Hospital in the western portion of the site. The majority of tracks have been buried or removed, though the historic alignment of the railroad track persists today as Ash Street and an unpaved roadway that leads north before exiting the property at Stevens Road near the interstate. A currently active railroad line west of the interstate once connected to the spur and is the property of CSX Transportation. The tracks that paralleled the alignment of Interstate 295 and were known as the Coal Spur and lead to Benning Yard.

D8. Landscape Structures

Landscape structures complement historic buildings and comprise some of the most unique features of the West Campus cultural landscape. The stone and brick perimeter wall along Martin Luther King Jr. Avenue is an excellent example of these distinctive elements (see Figure VI.8). Other walls, fences, steps, bridges, arbors, summerhouses, and the ruins of farm buildings form the collection of landscape structures at St. Elizabeths Hospital. The perimeter wall, constructed from 1858 to 1869 and altered in 1924 behind the Administration Building, is divided nearly in half by linear footage with the 1850s construction of brick (2,034 linear feet) and the 1860s construction of stone (2,001 linear feet). The remainder of the perimeter is more recent chain link fence in fair to poor condition. Over 16,500 linear feet of other walls and fences are found in the West Campus, in addition to an 8-foot chain-link security fence installed along the woodland edge of Units 3 and 5 in 2006 (see Figure VI.6). Stone capped brick steps and a retaining wall complement the brick building façade on the northwestern side of the Center Building (see Figure VI.9).

Several styles of historic metal handrails remain on the campus in Units 1, 2, and 3. While some are historic fences, others are more recent. Only freestanding rails not connected to buildings are assessed. All handrails range from fair to buried/missing condition. Metal picket fence is found along the eastern edge of the Civil War Cemetery in Unit 5 with chain link fencing enclosing the cemetery to the north, south, and west. Stone and brick retaining walls form the most historically important elements of this collection. Stone walls and steps around the Ice Plant have a similar construction style and detailing to the stone walls at the Greenhouse Complex. Many of these walls are deteriorating because of slope failure. Throughout the upland plateau of the campus, growth of aggressive plants such as Tree-of-Heaven (Ailanthus altissima) is causing the failure of walls, steps, and paving. Other landscape structures on the West Campus are functional and in
good to fair condition. Two bridges, one brick and the other concrete, are in fair but sound condition. The historic brick bridge is an extension of a tower near the Ice House. The contemporary concrete bridge spans a small, highly eroded stream adjacent to Sweetgum Lane northwest of the overlook on Golden Raintree Drive, just downstream from the outfall in Figure VI.5.

Three modest landscape buildings remain on the West Campus, including two small, summerhouses and a wire-frame arbor. Two 30-foot wide cross-shaped summerhouses are located in the lawn near Martin Luther King Jr. Avenue in the southwest corner of Unit 1. Figure VI.10 shows the westernmost summerhouse with a remnant of a bench. These roofed, open wooden structures are the remaining built elements that demonstrate hospital resident use of the outdoors for enjoyment. A domed metal arbor adjacent to Staff Residence No. 2 also provides evidence of a vine-covered Victorian summerhouse placed within the landscape. Figure VI.11 shows the condition of the arbor with a variety of vines in 2004. The structure has since been cleared of all constricting vines whether historic plantings or contemporary vines.

D9. Constructed Water Features

Designed water features such as fountains, pools, cascades, and irrigations systems no longer exist as character-defining features on the hospital grounds. Except for one small fountain basin in the enclosed garden southeast of the Center Building entrance, visible historic water features on the West Campus have been removed. Figure VI.12 shows the brick coping on the three-tiered fountain. No surface evidence remains of the large pond that existed south of the Center Building through the mid 20th century. The two historical springs with designed grottos no longer exist since their removal during campus alterations over the past century. One spring was lost when a ravine was filled in the northeast of the Unit 3.

D10. Small-scale Features, Furnishings and Objects

The West Campus contains numerous small-scale features, furnishings, and objects. Benches, signs, lights, flagpoles, fire hydrants, metal pedestal grills, and institutional drinking fountains dot the landscape of the hospital in varying conditions. A few mid-20th century benches are found near buildings and in wooded areas throughout Units 2 through 5. Figure VI.13 shows a wood slat bench with concrete supports. Other benches present on the campus landscape have green-painted, wood slats with metal straps. Figures VI.10 and VI.14 portray metal and wood bench remnants under a summerhouse and in the woodlands on the northern slope of Unit 3. The range of historical lighting strategies is revealed by the remnants of lamp bases outside the Center Building and several types of electric floodlights. The arrangement of these furnishings shows the implementation of different and disjunctive lighting phases. Four contemporary flagpoles are found on the West Campus including at the terminus of the Gatehouse No.1 entrance, northwest of the Center Building, outside of Staff Residence No.1, and across from the entrance of the Administration Building. Objects such as planters, fountain pedestals, and birdfeeders also contribute to the character of the landscape. Figure VI.15 shows a concrete birdbath and possibly a concrete drinking fountain or birdbath beside an ornate iron fence in the same Center Building courtyard as the small fountain. A concrete and stone birdbath, planter or fountain is also found behind Hagen Hall and in the sunken garden at the Greenhouse Complex.
Most of these greenhouses have missing glass, deteriorated framing, and decaying structural members. The most notable small-scale object group in the West Campus landscape is the collection of Civil War Cemetery grave markers (see Figure VI.2). Over 200 headstones are arranged in 22 rows on the historic southern bank of the Anacostia River.

D11. Archaeological Sites

Given the long history of occupancy and recorded intensity of use at St. Elizabeths Hospital, the West Campus appears to have a high potential for archaeological sites. Ironically, findings from a 2005 Phase I archaeological survey indicate that relatively few areas of the hospital landscape are likely to contain an abundance of prehistoric or historic subsurface cultural materials. The Combined Phase I Archeological Survey produced by Hunter Research, Inc. in 2005 is a volume of the Building, Landscape, and Archaeological Assessment Plan – St. Elizabeths Hospital West Campus. The survey follows the recommendations of the St. Elizabeths Hospital Archaeological Management Plan by Engineering Science, a section of the 1993 Devrouaux & Purnell Architects-Planners, P.C., St. Elizabeths Hospital Historic Resource Management Plan.

The Phase I survey included results of historical research, a field survey, shovel testing, and metal detector scans. Over the entire West Campus, 360 shovel tests were excavated, based on a 100-foot grid, in areas likely to contain cultural materials. A total of 605 artifacts were recovered which was a lower number than anticipated. Overall recovery of materials over the entire campus included few prehistoric materials, no colonial artifacts, no historic materials earlier than the last quarter of the 18th century, and only small quantities of later 18th and 19th century materials. Hunter Research recovered a small quantity of early 20th century materials from the Power House dump site. Based on the survey, four areas at the hospital either contain a relatively high concentration of artifacts or indicate the likelihood of containing informative cultural materials. These areas include:

- The point of Golden Raintree Dr. in northern Unit 1 with prehistoric potential
- Orchard Area in northern Unit 3 with 19th-century hospital-era potential
- Power House dump in southeastern Unit 4 with 20th-century hospital-era potential
- Civil War Cemetery in northern Unit 5 with Civil War era potential

A cluster of prehistoric artifacts including shaped stones make up some of the materials retrieved from undisturbed soil layers in northern Unit 1. The cluster is located on the inside bend of Golden Raintree Drive as it sweeps toward a view over the Anacostia River to the National Mall. Hunter Research, Inc. recommends Phase II archaeological investigation of this area.

The historical orchard area west of Sweetgum Lane in northern Unit 3 contains many surface traces of hospital-era cultural materials. Surface remnants include the foundation footprint of an early 20th century building, fence posts, American holly (Ilex opaca) orchard rows, and historic road beds. These landscape features, soil conditions, archaeological data, and documentary studies indicate the likelihood of subsurface artifacts that could inform the understanding of the relationship between hospital and landscape. Further investigation in this area may substantiate the presence of hospital and pre-hospital era cultural materials.
A 20th-century dump is located in the ravine directly southwest of Power House. The variety of utilitarian china, among other artifacts from the first half of the 20th century, contributes to the understanding of daily life at St. Elizabeths Hospital. Hunter Research, Inc. proposes the protection of this area until additional investigation is conducted.

The most visually prominent archaeological site on the West Campus is the Civil War Cemetery located in northern Unit 5. Surface artifacts include many headstones marking grave sites of Civil War soldiers who died while being treated at St. Elizabeths Hospital during the war. While much of the cemetery is enclosed by a contemporary metal fence, additional grave sites are located outside of the fenced area. Findings from metal detector surveys conducted by Chicora Foundation, Inc. in early 2007 reveal additional metal crosses south of the cemetery perimeter fence (see Figure VI.16). These metal crosses were historically located within the perimeter fence and later moved likely by either a groundskeeper or visitor to the site. Figure VI.17 shows the location of the metal crosses on the recently cleared ground plane between the cemetery and the Warehouse and Laundry Building.

Hunter Research, Inc. contends that the nature of historical land use and construction for modern transportation have altered the potential for archaeological sites at St. Elizabeths Hospital. It is likely that relatively little trash remained on the site from the hospital period due to an increased awareness during the late 19th century of modern cleanliness and hygiene standards. The necessarily high-level of campus maintenance limits the potential of artifacts to be found near the existing buildings. In addition, in Unit 3, grading for the construction of Interstate 295 in the 1960s has covered evidence of the early historical wharf and other archaeological resources associated with the bank of the Anacostia River.

E. EXISTING TREE AND SHRUB ASSESSMENT

This section presents the tree and shrub inventory for the entire campus and focuses on detailed analysis of the ornamental landscape conditions of Units 1 and 2. Overall campus findings are updated from the 2005 Cultural Landscape Assessment and also cover wooded areas of Unit 3, 4, and 5. Both Units 1 and 2 have a similar landscape character of mature deciduous and evergreen trees over turf grass set on the upland plateau. The trees found in both units are similar in their variation, species composition, spacing, and size. Because the landscape of these two units is so similar, Heritage Landscapes assessed the plateau landscape vegetation and tree collection of Units 1 and 2 as one composition.

The combined landscape of Units 1 and 2 is characterized by the distinctive arrangement of curvilinear drives accessing buildings, and large, open areas of trees over turf grass with walks. Unit 1 was first developed around the Center Building and has many distinctive vegetation elements (see Figure VI.18). Twelve grand white oaks remain in the historic allée lining the original entrance road shown on the 1860, 1872, and 1895 plans. Today this allée is in decline, but its historic significance as a remnant of the original landscape design is undeniable (see Figure VI.19). The overlook loop shown in Figure VI.1 has open lawn with a number of large, old deciduous and coniferous trees, including white pines, Canadian hemlock, and two very large
deodar cedars. A collection of grand mature white, red, pin, and willow oaks is found to the western side of the Center Building. The lawn to the northeast displays a mix of deciduous elm, beech, maple and oak, with clusters of American holly. Groupings of large, impressive southern magnolia trees are found to the south of the Center Building.

Unit 2 was developed beginning in 1902 with the second phase of building construction. This unit has a similar character to Unit 1, and has some key vegetation elements, including a grouping of five very large and declining English elm trees. Many of the same mixed hardwood species from Unit 1 are found in Unit 2, including elms, oaks, beech, maple, and horse chestnut. Evergreen trees such as large white pines and Atlantic cedar are found individually and in pairs. A large cluster of American holly trees is found in the center oval-shaped lawn area and many southern magnolias are planted in Unit 2 (see Figures VI.20 and VI.21).

F. TREE COLLECTION ASSESSMENT METHODOLOGY

Heritage Landscapes conducted detailed field reconnaissance to assess the condition of the St. Elizabeths landscape between 2004 and 2007. Both built elements and vegetation were assessed using a rated scale. Two teams carried out the review focusing on the built elements of landscape including drives, walks, walls, water features, furnishings, and site objects, and on vegetation, principally addressing free-standing trees. Shrubs and ornamental vines were also identified. Overall, more than 900 trees and shrubs were mapped and assessed on the St. Elizabeths West Campus. The initial 2005 field mapping was carried out using 1988, 1994, and 2002 aerial photographs as base plans. The expanded and updated vegetation survey was carried out in 2006 and 2007 using AutoCAD base plans created in 2005. During the 2007 field inventory, all woodlands on the campus were studied and characteristic species were noted. In wooded areas, significantly larger and older trees generally larger than 12-inch diameter of the tree at breast height (dbh) were individually assessed by condition code.

Trees, shrubs and vines were identified by genus and species from observation. Cultivars (cultivated varieties, or cv) are somewhat difficult to determine in the field and planting records or previous tree mapping were not available and may not exist. Therefore, only genus and species were noted unless obvious characteristics were able to provide cultivar information as well. Trees were assessed by canopy, trunk, and root condition, and given the corresponding code listed on the existing conditions base map. Shrubs were also identified by genus and species and located on the base map. The complete list of inventoried vegetation is in Appendix A.

The code for trees consists of 6-9 digits, for example: Qph36A1U2. The first 2 or 3 letters designate the genus and species. A full key of the genus and species codes is presented in Appendix A. The next 1 or 2 numbers refer to the diameter of the tree at breast height (dbh) Dbh is measured on the uphill side of the tree at 4.5 feet above ground level. For trees with multiple stems, the diameters of individual trunks were recorded at dbh and added together to find the total diameter. The following letter (A-E) shows the condition of the canopy. The next number (1 or 2) refers to the condition of the trunk. The following letter (U or R) designates the condition of the roots. If an M is the last digit following the root code, the tree has multiple stems. If a
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Chapter VI: St. Elizabeths Hospital Existing Landscape

number is the last digit(s), it describes the number of stems the tree has. The canopy, trunk, and root codes are keyed out as follows:

**Canopy**
- **A** Good: full crown, vigorous growth, no immediate care required
- **B** Fair: minor problems, maximum of 2” deadwood, minor pruning recommended
- **C** Poor: major problems, deadwood of 3 or more inches and not more than six branches, major pruning recommended, monitor for hazard, possible removal
- **D** Failing: major dieback in crown, near dead or standing dead, hazard to be removed
- **E** Dead: Stump or depression (tree identified if possible)

**Trunk**
- **1** No visible damage
- **2** Damage including wounds, mushrooms, cracks, or minor decay issues

**Roots**
- **U** Unrestricted: open
- **R** Restricted: Enclosed within 8-10 feet on one or more sides by roads, sidewalks, buildings, or other objects.

Canopies were rated in alphabetical order from A to E. An A-rating indicates trees in good condition with full crowns, vigorous growth and no maintenance required. B signifies canopies with minor problems, such as minimal deadwood up to two inches in diameter. Routine maintenance pruning will aid tree health and appearance. The C-rating is applied when major deadwood is present on up to six branches with diameters of 3 inches or more. Pruning should be done for the health and longevity of the tree and for potential hazard control. A rating of D signifies major dieback in the crown indicating that the tree is in serious decline and an arborist should review the tree for potential removal or significant repair. A D-rating is also used for standing dead trees. An E-rating is used for stumps or depressions where a tree has been removed, with stumps identified where possible.

Tree trunks were given a rating of 1 or 2. Trunks in good condition with no visible problems or minor ones that will be outgrown were rated 1. Trunks with any damage including cracks, wounds, fungus, and visible decay were rated as 2.

The rating system used for assessing the root zone uses U for unrestricted space for growth, and R for restricted space. Restriction is usually caused by adjacent sidewalks, roads or buildings and in a few cases by crowding. Generally, trees with obstructions within 8 to 10 feet were coded as R. The degree of restriction is relative to the mature size and root-space of a particular tree. For example a mature oak will need more root space than a flowering crabapple. The ratings serve as a guide to enable rapid determination of the needs of individual trees within the campus and determine possible methods of care, maintenance, removal and replacement where needed. The mapping will allow maintenance crews and/or arborists to pinpoint problem areas with minimal in-field investigation. Individual tree assessment in woodlands does not necessarily relate to
quality of woodland or to the significance of an individual tree as all trees assumed to be older or larger were assessed and recorded.

Existing conditions vegetation plans, Plans VI.3 to VI.6, show updated 2007 tree and shrub locations and corresponding assessment codes that describe genus, species, diameter, and canopy, trunk, and root condition for trees within each of the four quadrants of the core campus. This six to nine digit code is keyed out on Plan VI.6: Existing Conditions Vegetation Plan.

G. UNITS 1 AND 2, TREE ASSESSMENT RESULTS

The St. Elizabeths West Campus has an incredible tree collection in an arboretum-like setting. Many of the largest are more than 100 years old and were planted either in the early phases of St. Elizabeths or by previous owners before it was established as a hospital. Alvah Godding, the son of the second superintendent, Dr. William Godding (1877-1899) brought many rare trees to St. Elizabeths from his travels abroad. The collection continued to be developed principally through the 19th and early 20th century. Today the still remarkable inventory of trees also shows considerable loss over recent years.

A total of 639 trees in Units 1 and 2 were identified and assessed in the 2005 Landscape Assessment Plan. The 2007 field assessment notes the removal of several trees identified as poor quality in 2005. Taken as a general condition of the tree collection on the plateau, findings from 2005 assessment remain valid for 2007. These trees consist of 102 different species and 52 different genera of more than 160 species reported for the West Campus as a whole. Deciduous trees make up most of the collection at 51% (323 trees), the most prevalent trees being 34 specimens of *Quercus alba* (white oak), 33 specimens of *Ulmus americana* (American elm), and 20 specimens of *Ulmus procera* (English elm). Evergreen trees make up a substantial portion of the collection at 31% (196 trees) and the most numerous species are American holly (*Ilex opaca*) with 71 specimens, Southern magnolia (*Magnolia grandiflora*) with 44 specimens, and *Pinus strobus* (Eastern white pine) with 16 specimens. Ornamental trees make up only 13% (85 trees) of the collection. The most common ornamental species are *Prunus serrulata* (Japanese cherry) with 27 specimens and *Magnolia stellata* (star magnolia) with 15 specimens. The remaining 5% (35 trees) were not identified by type. Of the 639 trees, 66 were stumps or depressions where trees were removed, leaving 573 standing trees.

G1. A Mixture of Dominant Trees and Specimens

The tree collection at St. Elizabeths West Campus consists of large groups of dominant trees as well as numerous small groups or individual specimens, adding to the arboretum-like setting of the campus landscape (see Figure VI.18). The predominant trees on the West Campus are oak, elm, magnolia and holly. The 10 most prevalent tree species are *Ilex opaca*, *Magnolia grandiflora*, *Quercus alba*, *Ulmus americana*, *Ulmus procera*, *Prunus serrulata*, *Quercus phellos* (willow oak), *Pinus strobus*, *Acer saccharinum* (silver maple), and *Magnolia stellata*. Together, these 10 species total 294 trees, or 46% of the collection. The other 92 species (309 trees) make up 49% of the collection, with the remaining 5% being 36 stumps or trees that are not identified by species. Examples of tree species that number between 6 and 14 include: *Tsuga*
canadensis (Canadian hemlock), Aesculus hippocastanum (Common horse chestnut), Cedrus deodara (Deodar cedar), Zelkova serrata (Japanese zelkova), Cornus florida (flowering dogwood), Ginkgo biloba (ginkgo), Metasequoia glyptostroboides (dawn redwood), and Platanus occidentalis (American sycamore). Examples of trees that number between 2 and 5 are: Cedrus atlantica (blue atlas cedar), Fagus grandifolia (American beech), Koelreuteria paniculata (golden raintree), Diospyrus virginiana (common persimmon), Cladastis kentukea (yellowwood), and Catalpa bignoides (southern catalpa). Single specimens include Cryptomeria japonica (Japanese cryptomeria), Carya ovata (shagbark hickory), Aesculus carnea (red horse chestnut), Betula alleghaniensis (yellow birch), Torreya nucifera (Japanese torreya), Quercus robur (English oak), and Sequoiadendron giganteum (giant sequoia). The wide variety of types of trees present at St. Elizabeths demonstrates an active effort to maintain the grounds as an arboretum for the education and enjoyment of patients.

G2. Tree Sizes and Approximate Ages

The age to diameter ratio of trees varies by species, spacing, and site conditions. In general, Heritage Landscapes finds that deciduous trees in the Washington DC area with a diameter at breast height (dbh) of over 30”, and evergreen trees with a dbh of over 20” are about 100 years old with variations by species and growing conditions. Of the 323 deciduous trees and stumps assessed at St. Elizabeths, 135 or 42% are 31” or more in diameter. Of the 196 evergreen trees and stumps, 95 or 49% are 21” or more in diameter. In the landscape of St. Elizabeths, roughly two groups of historical tree plantings are found. One is about 70 years and older, represented by deciduous trees or stumps with diameters of 25” and larger and evergreen trees or stumps with diameters of 17” or more. This group of trees dates from the pre-hospital and early hospital time periods and consists of 269 trees (42%). The second group is about 15 to 69 years old, and corresponds to the late hospital period, represented by deciduous trees with 10” to 24” diameters, and evergreen trees with 7” to 16” diameters. 211 trees, or 33%, can be attributed to this second group. Many of these trees may have been planted in the late 1960s and early 1970s as a result of the loss of the American elms. Most of the ornamental trees on site are from this time period. Many of the smallest diameter trees are volunteers, such as tree-of-heaven (Ailanthus altissima) and American elm, which have established in the last 15 years since maintenance of the West Campus landscape has declined. There are 41 trees (6%) on site with diameters of 9” or less for deciduous trees and 6” or less for evergreen trees. Sixty trees (9%) were not measured for dbh.

G3. General Tree Condition

Tree canopy health as a whole is fair, with the majority of trees rated B or C. 46 trees (7%) were assessed an A-rating for canopy health indicating no remedial work needed and very limited deadwood. A B-rating was given to 231 (36%) of the trees, which indicates that minor pruning is needed. Major pruning and a loss of canopy vigor was noted in 193 trees (30%) which were given a C-Rating. 77 trees (12%) were D-rated as they were failing or standing dead, with major dieback in the crown. 67 trees (10%) were E-rated for stumps or depressions, and 26 trees were not assessed for canopy health because they did not possess a canopy that could be assessed. The low number of A-rated trees can be the result of lack of recent tree maintenance and the advanced age of much of the tree collection.
A total of 269 trees (42%) had no trunk damage and were 1-rated. 282 trees (44%) were rated 2 with trunk wounds or damage. 88 trees were either stumps or depressions and were not coded for trunk condition because no trunk could be assessed.

### Trunk Condition

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<th>2</th>
<th>Stumps or Not Coded</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Trees</td>
<td>269</td>
<td>282</td>
<td>88</td>
</tr>
<tr>
<td>% of Trees</td>
<td>42%</td>
<td>44%</td>
<td>14%</td>
</tr>
</tbody>
</table>

Root space was restricted for 197 trees (31%), meaning that roads, sidewalks, or buildings were impediments to full root growth. Root space was unrestricted for 366 trees (57%). The remaining 76 trees were either stumps or not coded for root space.

### Root Space

<table>
<thead>
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<th>Restricted</th>
<th>Unrestricted</th>
<th>Stumps or Not Coded</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Number of Trees</td>
<td>197</td>
<td>366</td>
<td>76</td>
</tr>
<tr>
<td>% of Trees</td>
<td>31%</td>
<td>57%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Many of the trees on site date from the 19th century, planted in the early stages of St. Elizabeths or by previous owners. The largest trees on the West Campus with over 25” diameters are generally in decline and the majority require pruning or removal. Only 3 trees (1%) in this group were rated A for canopy health, and 78 (29%) were rated B for canopy health. 116 trees (43%) were given a C-rating, 51 (19%) were rated D, and 17 (7%) were stumps rated E, with 2 remaining trees not coded for canopy health. While many of the oldest trees on site are in decline, some remain healthy. 32% of the trees 25” and over that are still standing were rated an A or B, and can be restored to health with minor pruning.

### Canopy Health of Trees with Diameter of 25” and Larger

<table>
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<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>Not Coded</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<td>78</td>
<td>116</td>
<td>51</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>% of Trees</td>
<td>1%</td>
<td>29%</td>
<td>43%</td>
<td>19%</td>
<td>7%</td>
<td>1%</td>
</tr>
</tbody>
</table>

A former white oak allée is one group of the oldest specimens on the West Campus. The alignment, shown in Figure VI.19 that is just offset from the Gatehouse No. 1 entrance, is a remaining design element from the 1860 Topographical Plan of the hospital grounds. These trees
are vestiges of the original entrance drive. The dbh of these white oaks ranges from 30 to 60 inches, with C and D canopies ratings. All of the roads on the historic plan are tree-lined, and remnants of these are found throughout the campus landscape.

**G4. Tree Assessment Observations**

The West Campus is a highly diverse designed landscape with over 50 genera and 160 tree species represented. A distinct palate of favored trees is used on site. The most widely used tree is the American holly, with 71 planted on the plateau and about 90 more in a plantation in Unit 3. The second most widely used tree is southern magnolia, with 44 planted on site. Both trees are broadleaf evergreens, which may indicate a design intent to keep a green landscape throughout winter for patient benefit. Representative examples of these two trees at St. Elizabeths are shown in Figure VI.21

Overall, tree health on the West Campus of St. Elizabeths is fair. Most of the trees are rated B or C for canopy health, which would correlate with good to fair ratings. In 2005, 66 stumps (10% of trees) were recorded, indicating substantial recent loss of mature trees. By 2007, more stumps were recorded, resulting from the removal of many large trees in poor condition. About half of the trees have trunk damage, and about half do not. The majority of trees are not restricted in root growth, indicating that much of the collection is planted in open lawn areas, not directly next to roads, buildings, or sidewalks. In 2007, many trees and shrubs were noted with recent pruning in a damaging manner, which may negatively affect the vegetation in the future.

Tree age can be estimated by diameter, site history, and popularity by era. However, precise age can be determined with a core sample when trees are removed. As D-rated trees are removed, growth rings should be counted and recorded to develop a sampling of tree age records by species. In terms of current trees, groups can be judged to relate to building construction periods and other factors. For example, many large elms and oaks around the Center Building are assumed to be contemporaneous with the architecture. These trees are probably about 150 years old, assuming they were planted in the 1850s and 1860s. Many oaks and elms in the southern part of the campus are estimated to be about 100 years old, assuming they were planted at the time adjacent buildings were constructed in the early 1900s. The decline of the American elm due to Dutch elm disease in the 1960s had a significant impact on the St. Elizabeths landscape. Today, only 13 American elms over 26” in diameter remain. The even aged planting of Japanese zelkova is most likely a result of the loss, as zelkovas were believed to be the most appropriate replacement for American elm, having a similar vase-shape canopy structure. This information combined with the 11” and 21” diameter range of the zelkova trees leads Heritage Landscapes to believe they are about 30 to 45 years old.

Evergreen trees make up approximately 31% of the collection. American holly and southern magnolia make up the majority of the evergreen specimens, as discussed previously, but many conifers exist as well. Several species of conifers are over 100 years old including 16 eastern white pine trees ranging from 22” to 72” dbh, 13 Canadian hemlock trees with 10” to 42” dbh, blue atlas cedars with 25” to 54” dbh, and Deodar cedars ranging from 11” to 72” dbh. The age of these trees indicates that they were probably part of the early hospital planting period. The blue atlas cedars are shown in Figure VI.22.
Additionally, there are several uncommon conifers on site that may have been introduced in the early 1900s by Alvah Godding, the son of the second superintendent, who reportedly brought trees to St. Elizabeths from his travels. Japanese torreya, giant sequoia, and Japanese cryptomeria are examples of uncommon conifers to the eastern United States. Dawn redwood, Japanese larch (*Larix kaempferi*) and bald cypress (*Taxodium distichum*) are examples of deciduous conifers found in the collection. Many of these unusual specimen trees are planted near the Center Building. The areas around the Center Building also boast the most ornamental tree and shrub plantings, and appears to have been the focus of the ornamental gardening efforts. Although the largest and oldest trees are in decline, they are an important part of the history of St. Elizabeths hospital, and efforts should be made to perform the required maintenance to ensure their continued survival.

G5. Shrub and Vine Inventory Results

Historically, the landscape of the West Campus was open with trees dotting the open lawns and few shrubs. Today, the West Campus has few shrubs compared to the number of trees. Seventeen shrub stumps were noted. These old plants were recently cut to the ground while still living, and may or may not grow back in time. Many of the existing shrubs, including the flowering shrub in Figure VI.23, are located around the Center Building and Hitchcock Hall. Common shrub species are *Chaenomeles speciosa* (7 shrubs), *Vitex agnus-castus* (6 shrubs), *Taxus x media* (4 shrubs), and *Ilex crenata* (4 shrubs). Appendix A lists all shrub species and codes.

H. UNITS 3, 4 AND 5 WOODLAND AND MEADOW ASSESSMENT RESULTS

Units 3, 4, and 5 are on the down slope periphery of the plateau and make up the wooded, meadow, and agricultural edge to St. Elizabeths West Campus. Unit 3 is made up of approximately 27 acres of woodland, 9 acres of meadow and 4 acres of greenhouses, buildings and former gardens. Historically, most of the Unit 3 woodland area was open and about half was in agricultural use as recently as 1966, according to aerial photos. Since then, woodland cover has regenerated and expanded with an even-aged stand of a mixture of native and non-native trees, with a mostly non-native shrub and vine understory. The 40-year old regenerating woodland (Figure VI.14) is made up of white oak, red oak, black cherry, American elm, sassafras, black locust, tulip-tree, white mulberry and empress tree, with shrubs and vines including Tartarian honeysuckle, Japanese honeysuckle, and grape vine. Along the edges, large native trees make up the overstory, with smaller non-native and native succession taking place in the understory. About 90 American holly trees organized in six rows of approximately 15 trees are in the southwest part of Unit 3, historically used by St. Elizabeths as gardens and plantations. The land around the overlook drive is meadow to preserve the view out over Washington DC. Greenhouses, a nursery, remnants of former garden plots, Burroughs Cottage, and an area that used to be a ravine make up the eastern part of Unit 3. This portion is relatively open and is kept in meadow, except for the area along the road, which is planted in ornamental and shade trees. Figure VI.3 shows the open greenhouse landscape. The nursery is overgrown with rows of very
tightly planted white pine, dawn redwoods, citrus and chamaecyparis trees. A circular planting of seven American holly trees is also in the vicinity of the nursery.

Unit 4 is found to the west side of the plateau and contains a large ravine and woodland in the vicinity of the Power House and the Ice Plant. The edge around the ravine is made up of mature mixed oak woodland. The western edge of Unit 4 is regenerating, young woodland made up of native and non-native trees, with a mostly non-native shrub layer consisting largely of honeysuckle. This edge abuts Unit 5, and was cleared sometime between 1966 and 1978, according to aerial photos.

Unit 5 forms the southwestern and western edge of St. Elizabeths West Campus and is made up of about 31 acres of woodlands of varying ages. The Civil War Cemetery is found on the slope to the west of the plateau, and is a unique cultural resource. The cemetery, shown in Figure VI.2, is set within a mature hardwood forest with oaks, ashes, walnuts, tulip trees, elms, and cherries forming the overstory. Most of Unit 5, with the exception of the northern slopes around the cemetery, is a regenerating young woodland. According to aerial photos the middle (western) part of this woodland was cleared between 1966 and 1978. This portion is made up of young native and non-native trees with a non-native shrub understory consisting largely of honeysuckle.

The far southwestern part of Unit 5 was wooded until sometime between 1961 and 1966. Today, it is young woodland regeneration. The 1966 aerial shows that the area to the southwest was clear cut, and excavation and earth movement took place. A narrow strip of trees remains between the buildings, lawns and the logged area. The overstory trees along this edge consists mainly of mature chestnut oak, which may be indicative of the dominant species of the mature forest logged in the 1960s. Additional species present include white mulberry, tree-of-heaven, box-elder, black locust, empress tree and black cherry, some of which are non-native invasive plants, and all are indicative of disturbed urban areas.

I. EXISTING BUILT ELEMENTS AND HARDSCAPE ASSESSMENT

Similar to the arrangement of plantings throughout the St. Elizabeths West Campus, hardscape and built elements were designed and arranged for aesthetic, therapeutic, and utilitarian purposes. Much of the original layout of roads, walks, and walls remains today despite the replacement of materials and the addition and loss of various landscape features. A small number of notable landscape structures such as rustic stone walls and summerhouses exist on the campus. Nearly all historic designed and natural water features have been eliminated or severely altered on the campus. One small fountain basin and a few degraded streams remain. A range of institutional furnishings and objects are found throughout the campus although the most historically significant objects are grave markers at the Civil War Cemetery.

This section continues the assessment of features that characterize the landscape of St. Elizabeths West Campus. It covers the discussion of circulation, landscape structures, water features, and site furnishings and objects by landscape unit. The features assessed in this chapter correspond to the hardscape and built elements of the hospital campus. Plans VI.7 to VI.10, Existing Conditions Built Elements Plans accompany this chapter. The plans show the property in four quadrants at
150-scale and depict road, curb, walk, and wall and fence locations as well as an assessment code that describes the material and condition of each feature.

J. BUILT ELEMENTS AND HARDSCAPE ASSESSMENT METHODOLOGY

Heritage Landscapes undertook a survey of the hardscape and built elements of St. Elizabeths as a component of the conditions assessment in 2005. The 2007 field review to update findings of the assessment found very few changes to the condition of extant built elements on the West Campus. Primary changes included the recordation of an earthen road and the addition of a perimeter chain link fence in Units 3 and 5. Results from the 2005 assessment remain valid for 2007. Key built elements were selected, surveyed, and coded by material and condition to understand the state of campus hardscape and to make recommendations for its preservation. These elements included the circulation system of walks, roads, and curbs, walls and fences.

A total of 890,469 square feet of roads, 37,730 linear feet of curbs, 58,307 linear feet of walks, and 18,965 linear feet of walls and fences on the West Campus were mapped and assessed. Field mapping was initially carried out using 1988, 1994, and 2002 aerial photographs as base plans. Field notes were transferred to AutoCAD and used to update the 1947 Army Corps of Engineers survey base plan. Field staff used the updated base plan, aerial photographs, and an established protocol for assessing materials and conditions. The feature, material, and condition codes are keyed as follows:

<table>
<thead>
<tr>
<th>Feature</th>
<th>R</th>
<th>Road</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>Curb</td>
</tr>
<tr>
<td></td>
<td>W</td>
<td>Walk</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Wall or Fence Barrier</td>
</tr>
<tr>
<td>Material</td>
<td>N</td>
<td>New Concrete</td>
</tr>
<tr>
<td></td>
<td>O</td>
<td>Old Concrete</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Concrete (no distinction)</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>Asphalt</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Brick</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>Gravel or Dirt</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>Stone</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>Chain Link/Wire Mesh</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>Metal Handrail/Picket</td>
</tr>
<tr>
<td>Condition</td>
<td>1</td>
<td>Good: Little or no repair necessary; minor superficial damage</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Fair: Minor repair for safe use, prevention of deterioration, and maintenance of consistent aesthetic quality</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Poor: Replacement required for expected use; material integrity failed</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Buried/Missing: Partially or entirely unobservable at ground plane</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>Not Coded: No assigned value</td>
</tr>
</tbody>
</table>
The built elements and hardscape conditions rating protocol was developed by the assessment team using observed failure points of onsite features and materials. Roads, curbs, walks, and walls and fences were assigned material and condition codes based on the salient characteristics of any given element for a predefined unit of measure. For example, a primarily asphalt road with occasional concrete pads and repair patches would be identified as “asphalt.” The quality of the repaired section would then determine the condition rating of Good (1), Fair (2), Poor (3), or Buried/Missing (4) for units of twenty feet. Condition codes were assigned by the incidence of problem areas and particular characteristics within each twenty-foot section. If the same asphalt road had more than five large cracks, chipped repair patches, or other problems within the same twenty-foot section, that section would be assigned the code RA3, meaning Road-Asphalt-Poor. If those problems were distributed along a road such that only one problem occurred within a single discreet twenty-foot section, the road would be coded RA1 meaning Road-Asphalt-Good.

Using the rating protocol, the materials of roads, curbs, walks, and walls and fences were noted for comparative purposes. Roads are comprised of old concrete, new concrete, asphalt, brick, or gravel/dirt. Compared to new concrete, old concrete is visibly worn with a surface revealing small exposed brown aggregate. Road sections of old concrete often correspond to the layout and widths of roads drafted on the 1947 Army Corps of Engineers Topographic Survey. Newer concrete has been added for road expansion and resurfacing. Parking and loading areas are included in the category of roads. Entire brick road sections are present only in two areas—behind Building Q and under the porte-cochere at the Center Building north entrance. The tawny orange color of road brick differs from the red clay brick of walks and other pedestrian areas. Curb materials include concrete and stone, both light brown limestone and quarried granite.

Similar to roads, walk materials vary between concrete, asphalt, brick, and gravel/dirt. Steps along walks were assessed as part of the walk. Steps that lead from building entrances were not assessed. Walls and fences throughout the campus consist of concrete, stone, brick, chain link, metal handrail or pickets. Walls made up of various materials were coded by the most prevalent material. For example, a brick panel wall with a stone base and cap will be labeled “brick.” The stone and brick perimeter walls found mainly along Martin Luther King Jr. Avenue were assessed using the same codes as other stone and brick walls onsite. In one instance, the assessment of stone retaining walls between the Construction Shops and Ice Plant includes stone steps that are not associated with a walk but are integral to the retaining walls. Using the previously discussed protocol, the table below lists the combination of assessment codes by feature, material, and condition.

<table>
<thead>
<tr>
<th>Built Elements and Hardscape Assessment Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROAD</td>
</tr>
<tr>
<td>Good</td>
</tr>
<tr>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Concrete - New</td>
</tr>
<tr>
<td>RN1</td>
</tr>
<tr>
<td>Concrete - Old</td>
</tr>
<tr>
<td>RO1</td>
</tr>
<tr>
<td>Brick</td>
</tr>
<tr>
<td>RB1</td>
</tr>
<tr>
<td>Asphalt</td>
</tr>
<tr>
<td>RA1</td>
</tr>
</tbody>
</table>
Plans VI.7 to VI.10 show the condition codes for built elements throughout St. Elizabeths Hospital West Campus. The ratings will serve as a guide for GSA, helping to quickly determine the needs of individual built elements and specific areas within the campus and possible methods of care, maintenance, removal and replacement where needed. The mapping allows maintenance crews and specialists to pinpoint problem areas with minimal in-field investigation.

K. BUILT ELEMENTS AND HARDSCAPE ASSESSMENT RESULTS

This section presents the findings of the built elements and hardscape condition assessment. Results are organized by landscape unit, features in the rating protocol, and additional character-defining features. In general, the highest concentration of all built elements is found in Unit 1 and Unit 2, the designed landscape on the upland plateau. Not surprisingly, these units have the largest quantity and the highest concentration of older built elements and hardscape features such as brick walks, old concrete paths, and stone curbs. Units located downhill from the plateau have different characteristics. Units 3 and 4 contain the highest concentration of edge barrier elements in terms of walls and fences. In particular, the most common elements in Unit 3 are
property boundary chain link fences and perimeter walls, while Unit 4 contains the highest number of retaining walls, due to steeply sloping topography. Unit 5 contains the largest extent of gravel/dirt walks and metal fence largely extending beneath the woodland cover.

K1. Unit 1 Built Elements Assessment

K1.1 Circulation
The circulation elements in Unit 1 consist of the remaining original pleasure drive and walk network and more modern paved parking and road expansion zones. The informal, curvilinear drives and walks closely align to the circulation patterns established in the late 19th and early 20th centuries and retain a high degree of character in terms of location although materials have been altered. For example, Cedar Drive, the northern entry drive that leads to the north side of Center Building, exists largely as it appears on the 1860 Topographical Plan. To the south, Hemlock Drive, the current straight road leading to the southern entry of the Center Building, exists as it appears on the 1872 Topographical Plan, but not with the curving alignment shown on the 1860 Topographical Plan. The diversion of the southern branch of the entry road, away from the old oak allée, first appears on the 1908 Plan. Segments of the drive system have been widened while other drives remain at their historic, relatively narrow widths. These remaining narrower roads are an important character-defining feature. Modern parking lots are located behind buildings and alongside drives in specific areas.

Unit 1 contains 350,846 square feet and 39% of all roads on the West Campus. The majority of these roads are asphalt in fair (33%) and poor (37%) condition, with the remaining 30% in good condition. The next largest road type is concrete in fair (40%) to poor (40%) condition. 42,735 square feet (96%) of new concrete roads are in fair condition. Unit 1 contains more square feet of pavement than other units, due to the large number of small contemporary parking areas throughout the unit. Consequently, Unit 1 contains a slightly shorter total distance of curb length than Unit 2 (16,168 linear feet vs. 16,356 linear feet). Curbs are generally concrete in fair (48%) to poor (21%) condition. The remaining curbs are stone and total 672 feet, with 58% of them in good condition. Brick paving is the oldest pavement in Unit 1 and is concentrated around the Center Building. All 873 square feet of brick paving is in poor condition. Figure VI.4 shows a typical section of roads and drives.

On the West Campus, Unit 1 contains 37% of concrete walks, 95% of brick walks, and 100% of asphalt walks. 70% of all walks in Unit 1 are in fair condition. Most of the brick walks in Unit 1 surround buildings. The red bricks assessed correspond to early path layouts and may date to the late 19th century. The path along the west wing of the Center Building corresponds to the path shown on the 1872 Topographical Plan. Like the bricks used in the Nichols and Godding-era buildings, it is likely that the path bricks were quarried from nearby or onsite clay sources. Most brick walks are in fair condition although 9% of brick walks were covered by lawn with some exposed bricks at areas of thin soil; 9% are in poor condition and less than 1% is in good condition. Many upturned bricks and sections in poor condition are the result of heavy machinery used in the recent mothballing operations.

VI.27
Heritage Landscapes and Robinson & Associates, Inc.
K1.2  Landscape Structures
Notable Unit 1 landscape structures include a considerable length of brick walls, metal handrails, and three landscape buildings. 256 feet of interior brick walls and 256 feet of perimeter brick walls are contained within Unit 1; respectively, these walls account for 45% and 66% of brick walls at the West Campus. The entire brick perimeter wall and 82% of other Unit 1 brick walls are in fair condition requiring minor repairs in terms of cleaning and pointing deteriorated joints to prevent additional deterioration. Shared by Units 2 and 3, the brick perimeter wall is shown on the 1860 Topographical Plan. Unit 1 contains the largest concentration of green metal handrails on the West Campus. The 1477 linear feet of handrails include historic and recent metal fence. 52% is in fair condition while 48% is in poor condition or uprooted and in process of removal. Historic metal fences remain in fair and poor condition near the Center Building and around a summerhouse to the east.

The three landscape buildings in Unit 1 include two small summerhouses and a wire frame arbor. The summer houses located in the lawn south of Gatehouse No. 1 and east of Alison D and Relief have cross-shaped, gabled roofs with wooden pillars and a brick base (see Figure VI.10). The summerhouse closest to Relief is connected to the larger brick walk network of Unit 1, while the other is isolated in the lawn and partially surrounded by a circular metal tube fence. The summerhouses appear on the circa 1947 Overall Plan in locations that appear to be small groves of trees on the 1895 Geodetic Survey. The vine-covered wire frame arbor is located 17 feet east of Staff Residence No. 2 (see Figure VI.11). Steel tubes and braces comprise this 15 x 15 ft. structure, while vines obscure the two entrances. Structural tubular beams form an arched, circular ceiling springing up from each of the four post corners from height of 6 feet to about 9 feet. The arbor is in fair to poor condition exhibiting rust and metal deterioration from exposure, ground contact of structural posts and weathering.

K1.3  Water Features
Currently there is one significant water feature in Unit 1. A 10-foot diameter concrete fountain basin is located in the partially enclosed garden space framed by the walls of the southern façade of the Center Building (see Figure VI.12.) The fountain has brick coping around the outer edge. Historically, a small pond was located in the lawn south of the Center Building. This pond appears to have been shaped into a circular form as early as 1895. This basin was modified at various times until the removal of its concrete form between 1966 and 1978. Drinking fountains and utility manholes throughout grounds indicate the extensive subsurface drainage system, which was observed from the surface.

K1.4  Site Furnishings and Objects
Unit 1 site furnishings and objects include historic benches, a brick barbeque grill, drinking fountains, flagpoles, lamp or light bases, and fragments of fountain pedestals. Historic benches are metal strap with painted green wood slats. All historic benches are in poor condition or have deteriorated into fragments and have been removed from their original locations. The brick barbeque grill is associated with the small courtyard behind Staff Residence No. 3. The grill is in poor condition with brick loss and mortar deterioration. Drinking fountains from the last decades of patient occupancy are located at the tennis courts and across the south parking lot from Garfield/Center Building. These appear to be in fair condition although no functional assessment was conducted. Two flagpoles in Unit 1 are located in the entrance loop to Staff
Residence No.1 and in line with the entrance across from Gate House No.1. Both are in good condition. Fragments of fountain or birdbath pedestals are found behind Hagen Hall and on the south side of the Center Building. A small concrete pedestal in poor condition is located in the courtyard behind Hagen Hall. Its sculpted form includes figures of long-necked birds. The enclosed garden space east of the Center Building entrance contains a birdbath in fair condition, (Figure VI.15) and remnants of a decorative stone pedestal in poor condition. Outside the Center Building entrances are remnants possible lamp bases. Across from the north entrance of the Center Building, a shaped cast concrete footer is found near the road. At the south entrance, historic iron bases that were once supported light poles and luminaries flank the entrance steps.

K2. Unit 2 Built Elements Assessment

K2.1 Circulation

Unit 2 circulation is characterized by the extension of sweeping drives and paths that predominate Unit 1. The principal organization of the road network was established between 1872 and 1908, and includes a road leading from the current East Campus underpass to the Center Building by 1872 and an additional entry gate off Martin Luther King Jr. Avenue by 1895. Figure VI.24 shows a typical drive and walk intersection.

Road materials in Unit 2 include large extents of asphalt and concrete. Asphalt dominates road types with 275,465 square feet covering 42% of asphalt on the West Campus. Of this, 49% of the asphalt is in fair condition while 24% and 27% are in good and poor condition, respectively. Unit 2 also contains a large amount (36,842 square feet) of old concrete roads, the majority of which is in poor condition. 72% of stone curbs and 41% of concrete curbs occur in Unit 2. The predominantly granite curbs are found in front of the Administration Building and Hitchcock Hall and along the entrance drive to Gate House No. 2. The stone curbs postdate 1895, since the curving form of the second entrance road was established between 1895 and 1908. 49% of these curbs are in good condition while the remaining are in fair (32%) and poor (17%) condition. Of the 14,616 linear feet of concrete curb, 46% is in fair condition while the remaining is in good (23%), poor (22%), or not coded (8%) condition.

The overall path network of Unit 2 is in fair condition. Except for 202 feet of brick walks in poor condition and 22 feet of stone steps in good condition, the vast majority (15,263 linear feet) of walks are concrete in good (50%), fair (23%), and poor (25%) condition.

K2.2 Landscape Structures

Walls are the most significant landscape structures in Unit 2. While large extents of concrete wall, metal rail, and chain link fence also occur in Unit 2, the stone and brick perimeter wall and a brick retaining wall near J and K Buildings make up the most historically notable structures. 14% of the brick perimeter wall occurs in Unit 2. This 298 feet section is part of the oldest section of perimeter wall on the West Campus and has 34% in good condition and 38% in fair condition. The stone section of the perimeter wall is a more recent vintage, constructed behind the Administration Building in 1924. The extent of this wall is contained within Unit 2. An additional 2,001 linear feet of stone perimeter wall is coded with 71% in good condition, 28% in fair condition, and 1% in poor condition. 72 feet of brick retaining wall can also be found in the vicinity of J and K Buildings.
This Z-shaped wall served as a retaining wall for the now-demolished Oaks Building near J and K Buildings that were constructed in 1902. Today, it supports an elevated rise on which a 60-inch diameter chestnut oak (*Quercus prinus*) grows.

**K2.3 Water Features**

No significant water features were assessed in Unit 2. In this unit as with other West Campus areas, an extensive underground drainage system exists that was developed early in the Hospital’s history. The subterranean system was not assessed in this study.

**K2.4 Site Furnishings and Objects**

Unit 2 contains few site furnishings. Historical benches, one swinging bench, one flagpole, drinking fountains, fire hydrants, and metal cooking grills make up the site furnishings of Unit 2. Historical benches are located throughout the unit and include two types—green-painted wooden slats with metal straps and wood slats with curved concrete arms (see Figure VI.13 for an example of the latter). All of the benches found in Unit 2 are in poor condition. The flagpole of Unit 2 is to the west of the Administration Building. The pole is in good condition although the pavement and walks around it are in poor condition. Figure VI.20 shows a green fire hydrant located along Spruce Street in Unit 2. The exposure of the lower base of the hydrant indicates subsidence, regrading, or other changes to the ground surface since the installation of the feature. Drinking fountains and metal cooking grills are found along walks and in lawns adjacent to residential buildings such as Buildings A, B, and C. These recent furnishings are in varying condition and likely postdate 1980.

**K3. Unit 3 Built Elements Assessment**

**K3.1 Circulation**

The circulation of Unit 3 mainly consists of asphalt and gravel roads down slope from Golden Raintree Drive and the service drives and parking at the Greenhouse Complex and Gate House No.1. Despite a comparatively small circulation network, Unit 3 contains some of the earliest road alignments on the West Campus. Sweetgum Lane angles southeast to northwest through the unit and largely conforms to the earliest river access from the plateau circa 1860. According to the 1895 Geodetic Plan, the lane’s current alignment was fully established by 1895.

Unit 3 contains 60,162 square feet of roads. This is 7% of all roads on the West Campus. 34% of these roads are in fair condition, 30% are in poor condition, 20% are in good condition, and 16% are buried. The majority of roads in Unit 3 are asphalt, with 44% (12,127 square feet) of the asphalt roads in good condition, 25% in fair condition, and 31% (8,455 square feet) in poor condition. The roads in the Greenhouse area, around Burroughs Cottage, and Sweetgum Lane are all asphalt. 21,830 square feet of roads in Unit 3 are new concrete and 62% of these are in fair condition. Unit 3 contains 56% of the brick road in the West Campus. This amounts to 1,124 square feet of brick around Burroughs Cottage; all are in poor condition. 9,815 square feet of buried gravel/dirt roads are in Unit 3, which is 37% of the gravel/dirt roads in the West Campus. The high percentage is attributable to the roads in wooded areas that once formed part of the hillside farms. 143 linear feet of concrete curbs are found in Unit 3, which is less than 1% of all curbs. All curbs are in poor condition.
Walks in Unit 3 are associated with woodland trails and access to Burroughs Cottage and the Greenhouse Complex. Only 2% of all walks are in Unit 3. Of these, the majority (1,181 linear feet) is concrete with 40% in fair condition, 37% in poor condition, and 1% in good condition. The remaining 21% are not coded. 67 feet of brick walks are found around Burroughs Cottage (see Figure VI.25). 84% of these brick walks are buried and 16% are in poor condition.

K3.2 Landscape Structures

Landscape structures in Unit 3 include a small concrete bridge, the ruins of a small building in the northern woodland area, and numerous walls and fences. The small concrete bridge is located off Sweetgum Lane and crosses a small but highly eroded creek before entering the lawn down slope from the overlook on Golden Raintree Drive. The foundations and other remains of a farm structure are located west of the bridge. Associated with the site is the remnant of a small arbor in poor condition. The structure, constructed of metal tubing, measures approximately 10 feet by 5 feet. Plant growth and fallen trees have collapsed portions of the arbor.

Unit 3 contains the highest concentration of walls and fences on the St. Elizabeth campus. This is due to long extents of chain link fence and perimeter wall as well as numerous walls in the Greenhouse Complex and the vicinity of Burroughs Cottage. Of the 6,103 linear feet of all walls and fences (30% of the campus) in the unit, 4,099 linear feet are chain link. This accounts for 45% of chain link fences overall on the West Campus. A substantial portion of the chain link fence in Unit 3 is not coded due to its relative inaccessibility. 17% of the chain link fence is in fair condition. These chain link fences are found around the nursery at the east edge of the unit and around the old orchards and plantations to the west. Much of the perimeter wall around Unit 3 is chain link. Poor condition, metal handrails also occur in Unit 3 near Burroughs Cottage. This section of approximately 168 linear feet of green handrail is not historically significant.

Unit 3 also contains a portion of the perimeter wall facing Martin Luther King Jr. Avenue and extending along the north edge of the site. Although the brick perimeter wall is shared with Unit 1 and Unit 2, 40% of the perimeter brick wall is in Unit 3. Most of this wall (81% or 664 linear feet) found in Unit 3 is in fair condition. 38% of non-perimeter, stone walls are located in Unit 3. All 218 linear feet of these walls are in fair condition. Figure VI.26 shows part of the stone walls around the Greenhouse Complex. Unit 3 contains 28% of all non-perimeter brick walls. The majority (72%) of the 127 linear feet of these brick walls are in fair condition. 1,181 linear feet of concrete walls are located in Unit 3; 97% of which are in poor condition.

K3.3 Water Features

One persistent stream remains in Unit 3. Significant drainage from the Hospital’s underground system finds an outlet into Unit 3 due north of the Center Building’s entrance where a large ravine drops from the plateau. The stream has highly eroded banks. Several concrete and stone structures designed to mitigate erosion have failed (see Figure VI.5). Historically, the northwest boundary of Unit 3 touched the bank of the Anacostia River. This shoreline has since been filled and the river redirected. In addition, a 50-foot deep ravine and a spring were located north of Burroughs Cottage until a time between 1961 and 1966, when aerial photographs show that the ravine was filled and the watercourse altered.
K3.4 Site Furnishings and Objects

The collection of site furnishings and objects is relatively sparse in Unit 3. The majority of the unit is woodland regrowth from abandoned fields and pasture; nevertheless, the eastern section of the unit contains a limited number of furnishings and objects mainly related to the Greenhouse and former community garden space. The westernmost, north-south aligned Greenhouse contains a small sunken garden at its north end. The garden holds two planters or birdfeeders that complement the garden walls made of concrete with inlaid cobblestones. The birdfeeders are in fair to poor condition and have stones missing from the dentil-style stone coping. One of the birdfeeders is visible in the left side of Figure VI.26 at the edge of the dentil-patterned stone wall. Other objects and furnishings in the area are related to the former community garden located west of the Greenhouse Complex. Though the community gardens are no longer actively operated, remnants are visible in the landscape. These remnants are evidence of continued horticultural operations, land uses, and cultural traditions that began during the period of significance and were sustained to some degree into the early 21st century. Items associated with campus renovation efforts such as trailers, a portable toilet, signs, tools and work implements, water hoses, and stakes account for the remaining site furnishings and objects of Unit 3.

K4. Unit 4 Built Elements Assessment

K4.1 Circulation

Circulation materials in Unit 4 mostly consist of asphalt and old concrete roads and concrete, brick, and gravel paths. The unit contains the majority of the service and utility infrastructure of the campus. Roads with hairpin turns for traversing the steep topography were in place as early as 1872. The 142,611 square feet of roads found in Unit 4 account for only 16% of all roads on the West Campus. The majority of these roads are asphalt, with 36% in good condition, 11% in fair condition, and 23% in poor condition. 12% of the old concrete roads are in Unit 4, and they are all in poor condition. Unit 4 contains 4% of the new concrete roads on the West Campus, and they are all in good condition. All curbs in Unit 4 are concrete, with the majority (66%) in fair condition, and 32% in good condition.

Unit 4 contains 5% of all walks on the West Campus, 36% of the gravel/dirt walks, 7% of the concrete walks, and 3% of the brick walks. Of the 1,956 linear feet of concrete walks, the majority are in good (40%) and fair condition (38%). The 920 linear feet of brick walk is found adjacent to the Ice Plant, historically the oldest structure in the unit. 93% of these brick walks are buried and in unknown condition. All walks vary in condition, with 27% buried, 25% in good condition, 24% in fair condition, 15% in poor condition, and 9% not coded.

K4.2 Landscape Structures

Walls and fences dominate the collection of landscape structures in Unit 4. The unit contains one of the highest concentrations of walls on the West Campus, largely due to the number of concrete and stone retaining walls in the steeply sloped unit. For the entire West Campus, 5,736 linear feet, or 28% of walls and fences, are found in Unit 4 including 56% of the concrete walls, 46% of stone walls, and 36% of chain link fence. No metal rail or picket fence is found in Unit 4. 38% of the walls and fences in Unit 4 are in good condition. Most of the concrete walls (73%) are in good condition. Extensive stone walls are found near the Ice Plant. Most of the 3-foot thick stone walls (69%) are deteriorating due to material and slope failure. Many of these walls
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have pointed, dentil-type stonework at the top of each wall similar to some of the stone walls in the greenhouse complex. Only 2 feet of the brick wall are in poor condition in this unit. The majority of coated chain link fence is in good condition. A small brick bridge connects the Construction Shops of Unit 1 with a small tower adjacent to the Ice Plant. The bridge is in fair to good condition and appears to be structurally sound.

K4.3 Water Features
One notable water feature exists in Unit 4. A small intermittent stream drains the upper plateau of the West Campus through the steep ravine north of L Building. Historic, now-removed, railroad tracks between the Ice Plant and Power House straightened the watercourse in the ravine. Considerable erosion and slope failure in this area is accelerating the deterioration of landscape structures in the steepest sections.

K4.4 Site Furnishings and Objects
No notable site furnishings were observed or assessed in Unit 4.

K5. Unit 5 Built Elements Assessment

K5.1 Circulation
All roads and walks in Unit 5 are composed of gravel or earth. Except for 950 square feet of service road near Q Building in the south of the West Campus, all roads in Unit 5 are associated with the Civil War Cemetery. A total of 7,021 square feet of roads exist in the unit. This accounts for 37% of all gravel/dirt roads but less than 1% of all roads on the West Campus. All of these roads are in poor condition due to erosion and growth of vegetation. No roads have curbs. Similar to roads, less than one percent of all walks can be found in Unit 5. There are 420 linear feet of walks, all of which are gravel/dirt in fair condition and lead from Staff Residence No.1 to the cemetery. The walks make up 64% of all gravel/dirt walks on the West Campus and employ sleeper steps made from railroad ties.

K5.2 Landscape Structures
Walls and fences are the only notable landscape structures in Unit 5. Only 4% of walls on the West Campus are in this unit. 30% (760 linear feet) of all metal picket fences on site are in this unit. The metal picket fence forms the boundary on one side of the Civil War Cemetery with chain link surrounding the other three sides. Figure VI.2 shows the fence covered with vines. The cemetery perimeter also contains an 18 linear feet section of stone wall of undetermined age. This section of stone wall is in good condition.

K5.3 Water Features
No water features were assessed in Unit 5. Historically, the northwest boundaries of Unit 5 and Unit 3 touched the bank of the Anacostia River until the early 1900s when the bank was filled and the river was diverted.

K5.4 Site Furnishings and Objects
Grave markers in the Civil War Cemetery in Unit 5, shown in Figure VI.2, form the most significant small-scale object group in the West Campus landscape. Most of the headstones are in good condition. A previous study reported 225 grave markers arranged in 22 rows although
the current assessment only identifies 209 headstones. As mentioned above additional metal cross markers were found beyond the cemetery fence as shown in Figure VI.17, although these markers were moved from their original locations. The arrangement of visible headstones is depicted on Plan VI.10.

L. EXISTING LANDSCAPE SUMMARY

This chapter provides data on the existing character and conditions of the St. Elizabeths Hospital landscape based upon the St. Elizabeths Hospital West Campus Landscape Assessment Plan produced by Heritage Landscapes in 2005. The previous report informed the 2007 fieldwork and the assessment of recent changes for this CLR, particularly as a result of tree work conducted.

Landscape units and character-defining features within each unit are outlined and described for 2007. Additional details of landscape character are provided with the assessment and analysis of vegetation and built elements. Field mapping and the 2007 existing condition plans are derived from plans created for the 2005 assessment, which originated from a digitized 1947 Army Corps of Engineers Topographic Survey of St. Elizabeths Hospital. As such, current mapping and detailed plans are updated for 2007, but should not be construed as a formal property survey.
CHAPTER VI: ENDNOTES

1 Patricia O’Donnell, Peter Viteretto, Gregory De Vries, Tamara Orlow, and Thomas Helmkamp, *St. Elizabeths Hospital West Campus Landscape Assessment Plan*, Heritage Landscapes, Preservation Landscape Architects & Planners (authors), Farewell Mills Gatsch Architects (team leader) for U.S., General Service Administration, 2005.


3 Responsibilities for components of the Building, Landscape, and Archaeological Assessment – St. Elizabeths Hospital West Campus included Farewell Mills Gatsch Architects for building assessment, Heritage Landscapes for landscape assessment and Hunter Research for project history and archaeology.


6 Heritage Landscapes staff had visual identification of bald eagles on field visits to the West Campus in 2006. Areas of bald eagle nesting were shown to Heritage Landscapes staff by other consultants to GSA in the summer of 2006. Popular knowledge of nesting at St. Elizabeths Hospital is evident by publications such as: Larry Dine, “A Symbol of America,” *Washingtonian.com*, online newspaper, 1 July, 2006, found 02/02/2007 at http://www.washingtonian.com/articles/mediapolitics/1668.html.


8 Responsibilities for components of the Building, Landscape, and Archaeological Assessment – St. Elizabeths Hospital West Campus included Farewell Mills Gatsch Architects for building assessment, Heritage Landscapes for landscape assessment and Hunter Research for project history and archaeology.


Figure VI.1: A December 2004 image depicts the overlook drive at the northern Point of Unit 1 on the high plateau with a foreground of mature trees and open lawn and core of Washington, DC in the background. (CL-HL-101_0169.jpg)
Figure VI.2: This April 2005 image of the Civil War Cemetery reveals mature deciduous trees growing among the headstones and a vine-covered chain link fence. The cemetery plot on the north slope of Unit 5 faces the river and U.S. Naval Reservation. (CL-HL-2005-04-07gdv (50).jpg)
Figure VI.3: In December 2004, the open greenhouse landscape with community garden plots continued to maintain the hospital’s horticultural legacy in the foreground. This image was taken shortly before the community garden operations ended. Though the garden plots are no longer actively operated, remnants are evident in the landscape. The Greenhouse Complex and brick perimeter wall are visible in the background. (CL-HL-100_0029.jpg)
Figure VI.4: This December 2004 view of the central lawn in Unit 2 shows the typical curving alignment of the drives and sidewalks on the West Campus. The open green space with arboretum trees is framed by Buildings A, B, C, and M to the east. (CL-HL-100_0056.jpg)
Figure VI.5: A deteriorated drainage structure in the ravine between Golden Raintree Drive and Sweetgum Lane in Landscape Unit 3 shows considerable gullying and erosion under fallen concrete slabs in December 2004. (CL-HL-2004-12-16 (74).jpg)
Figure VI.6: This November 2006 image shows a recently erected chain link security fence that passes along the border between older American beech trees and young scrub vegetation in Unit 3. (CL-HL-2006-11-09-CT_18.jpg)
Figure VI.7: This December 2004 image depicts an example of an “Old Concrete” road at J Building, with concrete curbs and narrow walk. (CL-HL-100_022.jpg)
Figure VI.8: A December 2004 image illustrates the intersection of brick and stone construction along the frontage of the West Campus. These historic walls are in relatively good condition but require repointing and repair with limited reconstruction. (CL-HL-100_0095.jpg)
Figure VI.9: In November 2006, historic brick steps and retaining wall extend from the northern façade of the Center Building and show the expansion of building construction materials into the campus landscape. (CL-HL-2006-11-08-CT_12.jpg)
Figure VI.10: In December 2004, a remaining summerhouse is shown located in the lawn in eastern Unit 1. It was historically furnished with shrubs, fences, and benches for relaxing in the shade. An upturned metal and wood bench is visible behind a column. (CL-HL-101_0116.jpg)
Figure VI.11: In December 2004, the wire-framed summerhouse east of Staff Residence No.2 was entangled by a variety of vines that historically provided a shady resting spot. The vines have since been removed from the structure. (CL-HL-2004-12-16 (85).jpg)
Figure VI.12: This December 2004 image reveals the historic fountain with brick coping located in a courtyard east of the Center Building rear entrance. This is the only remaining constructed water feature in the West Campus landscape. (CL-HL-12-01-2004-101_0142.jpg)
Figure VI.13: Historic benches with concrete ends and wooden slat seats, backs, and pegs were found in the vicinity of A, B, and C Buildings in Unit 2 in December 2004. (CL-HL-01-12-04 (7).jpg)
Figure VI.14: This December 2004 view depicts woodland regeneration in Unit 3. Benches found throughout this area indicate it may have been used recreationally by patients. Alternatively, the bench may have been moved to this location as a means of temporary disposal sometime after the period of significance. (CL-HL-100_0053.jpg)
Figure VI.15: This December 2004 image depicts a concrete birdbath with a decorative metal fence in the background. The feature is located in the courtyard garden east of the Center Building entrance. (CL-HL-101_0144.jpg)
Figure VI.16: This January 2007 image shows a detailed view of an intact Southern Cross grave marker recovered outside of the perimeter fence of the Civil War Cemetery. (CL-Chicora-CompleteMarker-01-25-07.jpg)

Figure VI.17: Metal crosses were historically located within the perimeter fence and later moved likely by either a groundskeeper or visitor to the site. In January 2007, crosses were found outside the cemetery fence in the recently cleared, young woods between the Civil War Cemetery and the Warehouse and Laundry Building. (CL-Chicora-PartialMarkerSite-01-25-07.jpg)
Figure VI.18: A December 2004 panoramic view north of the Center Building shows a mixture of mature trees grown in an arboretum setting. (CL-HL-north-of-main-bldg-pano.jpg)

Figure VI.19: This December 2004 image depicts the white oak allée that spanned the original main entry road to St. Elizabeths Hospital and is approximately 150 years old. (CL-HL-2004-12-16 (08).jpg)
Figure VI.20: A December 2004 view shows large oaks and southern magnolias growing in open turf grass lawns in Unit 2 at St. Elizabeths Hospital. The exposed base of the fire hydrant indicates some changes to the surface grade along the street. (CL-HL-100_0013.jpg)
Figure VI.21: This December 2004 image shows a mature southern magnolia standing on the right side with an American holly tree in the left foreground of the image. These broadleaf evergreen trees contrast with the leafless deciduous trees in the background during the winter months. (CL-HL-101_0151.jpg)
Figure VI.22: A December 2004 image depicts blue atlas cedars and a standing dead eastern white pine with the Power House smokestacks rising from the ravine in the background. (CL-HL-100_0077.jpg)
Figure VI.23: This April 2005 image reveals a Camellia shrub in a courtyard of the Main Building. This is one of few shrubs on St. Elizabeths’ West Campus. (CL-HL-2005-04-07gdv (37).jpg)
Figure VI.24: This December 2004 image shows the intersection of the drive and walks with a modern concrete walk and curb cut along Redwood Drive. A concrete underground utility entrance is adjacent to the sidewalk. (CL-HL-100_0064.jpg)
Figure VI.25: This December 2004 detail image shows a brick walk near the Burroughs Cottage partially buried by decomposed leaves, soil, and vegetation. Elsewhere on site, brick walks display herringbone patterns (CL-HL-100_0037.jpg)
Figure VI.26: This December 2004 view of the Greenhouse Complex in Landscape Unit 3 shows deteriorated glasshouses, asphalt roads, and low stone walls with upright capstones in dentil forms. A cobblestone birdbath appears at the end of the stone wall in the foreground. (CL-HL-2004-12-16 (42).jpg)