

3.0 AFFECTED ENVIRONMENT

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3.1 CULTURAL RESOURCES

This section documents the cultural resources located on the Eisenhower Memorial site and within the surrounding area. This information was derived from NRHP nominations, historic maps, and field survey, as well as from a Phase 1A archeological study and two determinations of eligibility that were prepared in support of this document. For the purposes of this document, cultural resources impact topics include: prehistoric and historic archeological resources; historic (above ground) properties, including historic structures and districts; and cultural landscapes, and visual resources. Ethnographic resources and museum collections were dismissed as impact topics.

The National Historic Preservation Act (NHPA) of 1966 is the guiding legislation for the preservation of historic properties. As broadly defined by 36 CFR 800, historic properties are “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places.” According to the NHPA, properties that qualify for inclusion in the NHRP must meet at least one of the following criteria:

- Criterion A: Be associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion B: Be associated with the lives of persons of significance in our past;

Criterion C: Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

Criterion D: Have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

Properties that qualify for the NRHP must also possess integrity, which is defined as the ability of a property to convey its significance. The seven aspects of integrity are location, design, setting, materials, workmanship, feeling, and association. The term “eligible for inclusion in the NRHP” describes properties formally designated as eligible and all other properties determined to meet NRHP Criteria.

In accordance with Section 106 of the NHPA, federal agencies are required to consider the effects of a proposed project on properties listed in, or eligible for listing in, the NRHP. NPS has entered into consultation with the State Historic Preservation Officer (SHPO) and other interested agencies and individuals to identify historic properties that could be affected, to assess potential adverse effects, and to resolve the adverse effects through mutually agreed upon avoidance, minimization, or mitigation measures.

An initial step in the Section 106 process is the determination of the area within which historic properties will be affected or are likely to be affected. The area of potential effects (APE) as defined by 36 CFR 800.16(d) represents “the geographic area within which an undertaking may directly or indirectly cause alterations in the

character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.” An APE had previously been defined through the Site Selection Section 106 Process that concluded in 2006. For the development of the preferred Memorial design (the current undertaking), NPS initiated consultation with the DC SHPO in April 2010, and in consultation with the DC SHPO, defined the area of potential effects (APE) of this undertaking.

For the Eisenhower Memorial design, the Primary APE for above-ground historic resources includes the facades of buildings that are adjacent to the project site. As part of the current consultation effort, a broader secondary APE was defined which represents the area within which the proposed Memorial has the potential to have both direct effects and indirect visual effects on historic properties. The secondary APE was presented at the combined NEPA scoping/Section 106 meeting held on April 22, 2010, as well as at a consulting parties meeting on May 21, 2010. For more details regarding consulting parties, please refer to Section 5 of this document.

Both the primary and secondary APEs for historic above-ground resources are identified in Figure 3-1. Historic properties that lie within this area are listed in Table 3-1 and located in Figure 3-1.

Note that this list includes listed properties, properties determined eligible, and properties that may be eligible but have not yet been evaluated. The secondary APE is identical to the study area for visual resources.

Table 3-1: Historic Resources within the Area of Potential Effects

HISTORIC STRUCTURES AND DISTRICTS
L’Enfant Plan of the City of Washington
U.S. Capitol Building and Grounds
Lyndon Baines Johnson Building and plaza
Orville and Wilbur Wright Buildings
U.S. Botanic Garden
Hubert Humphrey Building
Wilbur Cohen Building
CULTURAL LANDSCAPES
The Mall (and its Contributing Features)
Union Square

Source: AECOM, 2010

In deriving the APE for archeological resources, it was determined that the proposed project’s only effects on archeological resources would occur as a result of ground-disturbing construction activities. Thus, the APE for archeological resources is the four-acre Memorial site, also delineated in Figure 3-1.

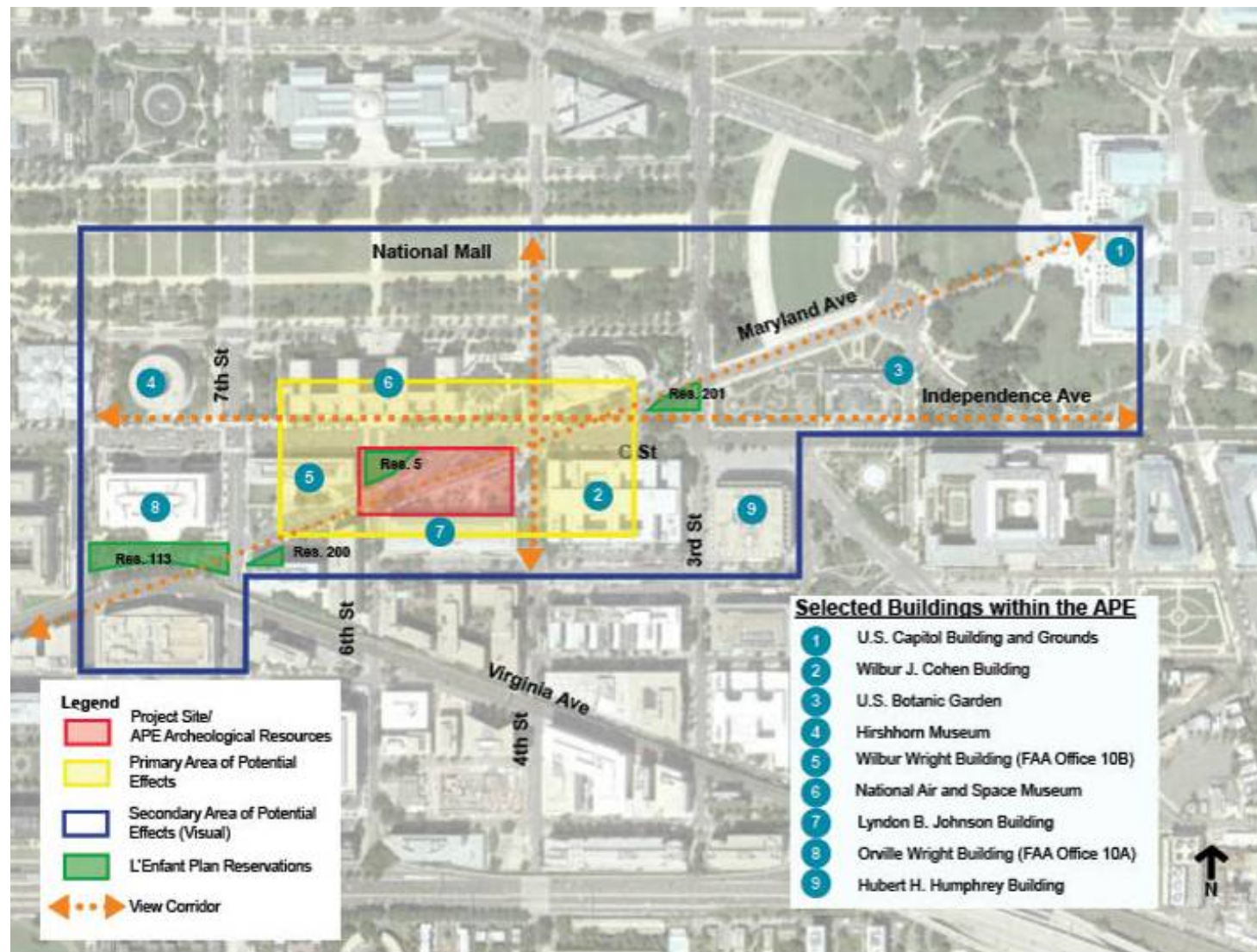


Figure 3-1: Area of Potential Effects (APE)

Source: AECOM, 2010

3.1.1 Archeological Resources

A Phase 1A Archaeological Survey for the Eisenhower Memorial was conducted in April, 2011. This survey described the prehistoric and historic contexts, a review of previously surveyed archeological resources, an assessment of the site's sensitivity to archeological resources, and a summary of recommendations. The information presented below reflects information provided in the Phase 1A survey.

Local Context

The Potomac River Valley has a rich history of human occupation dating back at least 10,000 years. Prior to the 19th century, Tiber Creek drained a large portion of what is now downtown Washington, flowing north of the Memorial site along the Mall. The waterway met Goose Creek approximately two blocks east of the site, and then turned south where it became St. James Creek. Because of its proximity to important waterways, the project area would have been an ideal setting for different activities throughout many periods of prehistory, including fishing, hunting, and cultivation. Native American settlements are known to have existed in the Tiber Creek area, but none have been documented within close proximity to the Eisenhower Memorial site.

The earliest urban development in Southwest DC grew out of Pierre Charles L'Enfant's 1791 Plan for the Capital City. In addition to establishing the roadway network in central Washington, the plan envisioned a canal that would connect the Potomac and the Anacostia Rivers along Tiber Creek. The Washington City Canal opened in 1815 and was a key element in the commercial and residential development of Southwest. Following the Civil War, with an influx of freed slaves, thousands of row houses were built and

numerous businesses were established and expanded. The largest growth in the area was in alley dwellings – small row houses built along alleys in city blocks. These dwellings, due to their limited light, and lack of sanitary sewage and water, created unhealthy living conditions for residents.

By the early 20th century, Southwest DC had come to be viewed as a slum. Beyond concerns from reformers about the unhealthy living conditions, the rise of the City Beautiful movement brought pressures to clean up the city, particularly those areas around the Capitol. The Senate Park Commission Plan (also known as the McMillan Plan), prepared in 1901, and later plans produced by the National Capital Park and Planning Commission, began to focus on the redevelopment of both the Federal Triangle area and portions of Southwest DC with a series of monumental federal buildings. By 1946, with the establishment of the Redevelopment Land Authority (RLA), the concept of large-scale urban renewal in the city had taken hold.

The product of “redevelopment theory”—the idea that a revitalized downtown would draw people back from the suburbs—urban renewal gained traction in Southwest DC with the release of the National Capital Park and Planning Commission's *1950 Comprehensive Plan*. This plan defined Southwest DC as one of the “Principal Problem Areas in the District of Columbia.” In 1956, redevelopment plans were approved for Project Area C, which encompassed the Eisenhower Memorial site, and in 1959 ground was broken on the Federal Office Building (FOB) 6, which would later be named in honor of Lyndon Baines Johnson, the first of several federal buildings under this program.

Between 1961 and 1976, eight more headquarters buildings were constructed in Southwest, both by GSA and by private developers: FOB 10, which is composed of two buildings located between 6th

and 9th Streets, SW, FOB 10A (the Orville Wright Building) and FOB 10B (the Wilbur Wright Building); FOB 8, located on C Street, SW, between 2nd and 3rd Streets; FOB 5, also known as the James V. Forrestal Building, located between 9th and 12th Streets, SW on Independence Avenue; the U.S. Department of Housing and Urban Development (HUD) Building, also known as the Robert C. Weaver Building, located at the southwest corner of 7th and D Streets, SW; the Nassif Building, constructed on a speculative basis by a private developer and formerly occupied by U.S. Department of Transportation (DOT), located at the southeast corner of 7th and D Streets, SW; the Reporters Building, also privately developed, located at the northeast corner of 7th and D Streets, SW; and the Hubert Humphrey Building, constructed by GSA for the Department of Health and Human Services (HHS), located at the southwest corner of 2nd Street, SW and Independence Avenue.

Constructed over a span of more than 17 years, these diverse buildings were designed by an array of architectural firms, some local and others of national importance. While each building is distinct, all are unified in their use of the Modern style, be it articulated as Formalism, Brutalism, Expressionism, or the International Style.

Site History

As depicted in L'Enfant's 1791 plan for the city, Maryland Avenue visually connected the U.S. Capitol Building with the Potomac River (see Figure 3-9). Bisecting the Memorial site, Maryland Avenue had a right-of-way of 160' in width, which has since served as the build-to line, the point to which buildings can be constructed. The 1791 L'Enfant Plan calls for 10-foot-wide foot ways and 30-foot-wide walks of trees on both sides of an 80-foot carriage way. By 1851, Maine Avenue had been installed north of and paralleling Maryland

Avenue. South B Street, which ran approximately along the current alignment of Independence Avenue, terminated at 6th Street. This formed an irregularly shaped parcel, defined by two diagonal avenues to the north and south and north-south gridded streets to the east and west. This parcel, a portion of which is included in the Memorial site, is identified as Square D in an 1857 map of the city by Albert Boschke (Figure 3-2). In subsequent Baist Real Estate maps Square D is termed Reservation D (in order to avoid confusion, this document will consistently refer to the parcel as Reservation D). The southern portion of the Memorial site was identified as Square 492.

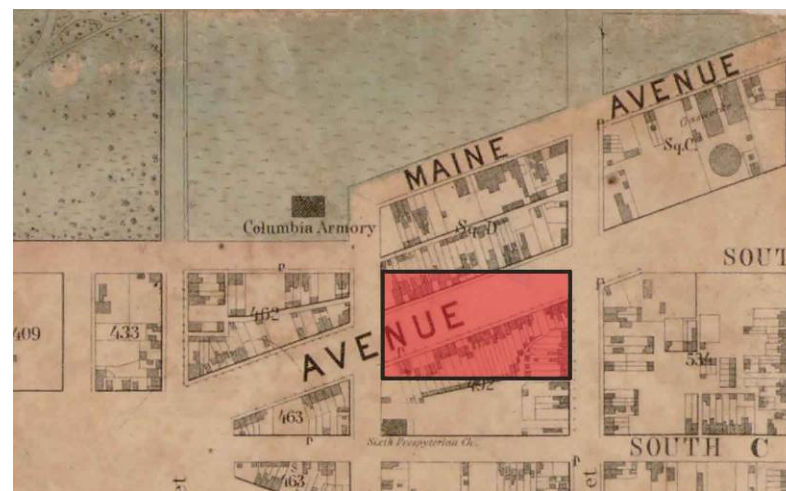


Figure 3-2: A. Boschke 1857 Map of Washington City, District of Columbia, with Reservation D and Square 492 north and south of Maryland Avenue, respectively

Source: Library of Congress, Geography and Maps Division

Boschke's 1857 map of Washington, DC shows that structures existed on most of Square 492, except for the southern central portion of the square that fronted C Street. Buildings fronted Maryland Avenue and 4th Street (historically known as 4 and One-Half Street) and included alley structures behind them (Figure 3-2). Boschke's map indicates that at this time the Sixth Presbyterian Church was located on the corner of 6th and C Streets. Reservation D was also developed with structures and included an alley running generally east to west, parallel to Maine Avenue. The blocks were made-up of a combination of brick and wood-framed dwellings of varying sizes, many two-story with porches and alley sheds.

An 1888 Sanborn Fire Insurance Map shows denser development on Square D and Square 492 than Boschke's 1857 map with most of the previously vacant lots having been developed (Figure 3-3). The 1888 map shows buildings, stables and two alleys (Armory St. and Aiken Alley) in Square 492. The railroad abutted the western edge of the site, running north along 6th Street from the Baltimore and Potomac Railroad roundhouse directly south of the site. Maryland Avenue cut diagonally through the Memorial site from the northeast to the southwest. Buildings, stables and two alleys were located on Reservation D, with businesses clustered on the eastern side of Reservation D fronting both Maine and Maryland Avenues and 4th Street. These businesses included several industrial structures including a planing mill, a lumber shed, and a foundry. Census records indicate that residents included families, boarders, and lodgers, and that the population was ethnically and racially diverse.

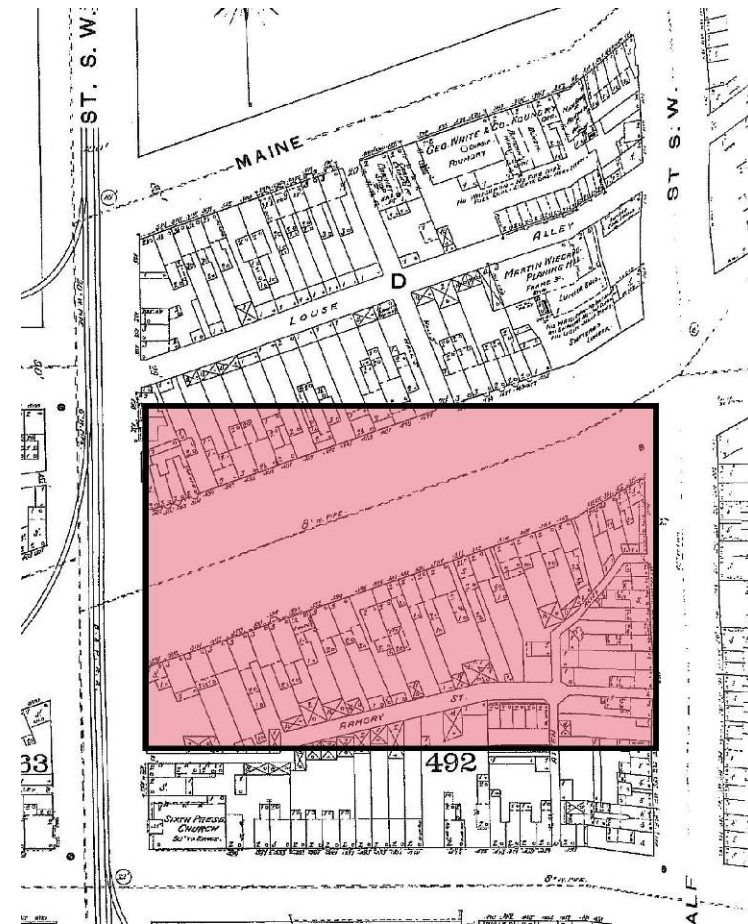


Figure 3-3: Sanborn Fire Insurance Map 1888

Source: Library of Congress Geography and Maps Division

Historic maps and Census records suggest there was little change in building patterns between 1888 and 1930. A 1939 photo of Southwest DC illustrates the density of development within the area (see Figure 3-4). However, according to Baist maps of the site, by 1903, the historic Maryland Avenue cartway, the way or road for carts or vehicular traffic, had been reduced to 60 feet in width, with 15 foot sidewalks and 35 feet of side yard on each side. Baist maps also indicate that the cartway was reduced from 60 feet to 50 feet between 1903 and 1911 (Figures 3-5 and 3-6). By approximately 1940, the buildings and structures on Reservation D had been demolished, in part to make way for Independence Avenue which would form the southern edge of the Mall. Land records indicate that by the end of 1941 the construction of Independence Avenue was complete, including a spur off of Maryland Avenue that connected it to Independence Avenue at mid-block. A 1945 Baist Real Estate Survey Map shows that a temporary building for the Veterans Administration had been constructed on the north side of Independence Avenue, across from the Memorial site (Figure 3-7). In 1957, residents of Square 492 were relocated to make way for Federal Office Building (FOB) 6, now known as the LBJ Building.



Figure 3-4 Southwest DC, D.C. July 1939

Source: Library of Congress, Prints and Photographs Division

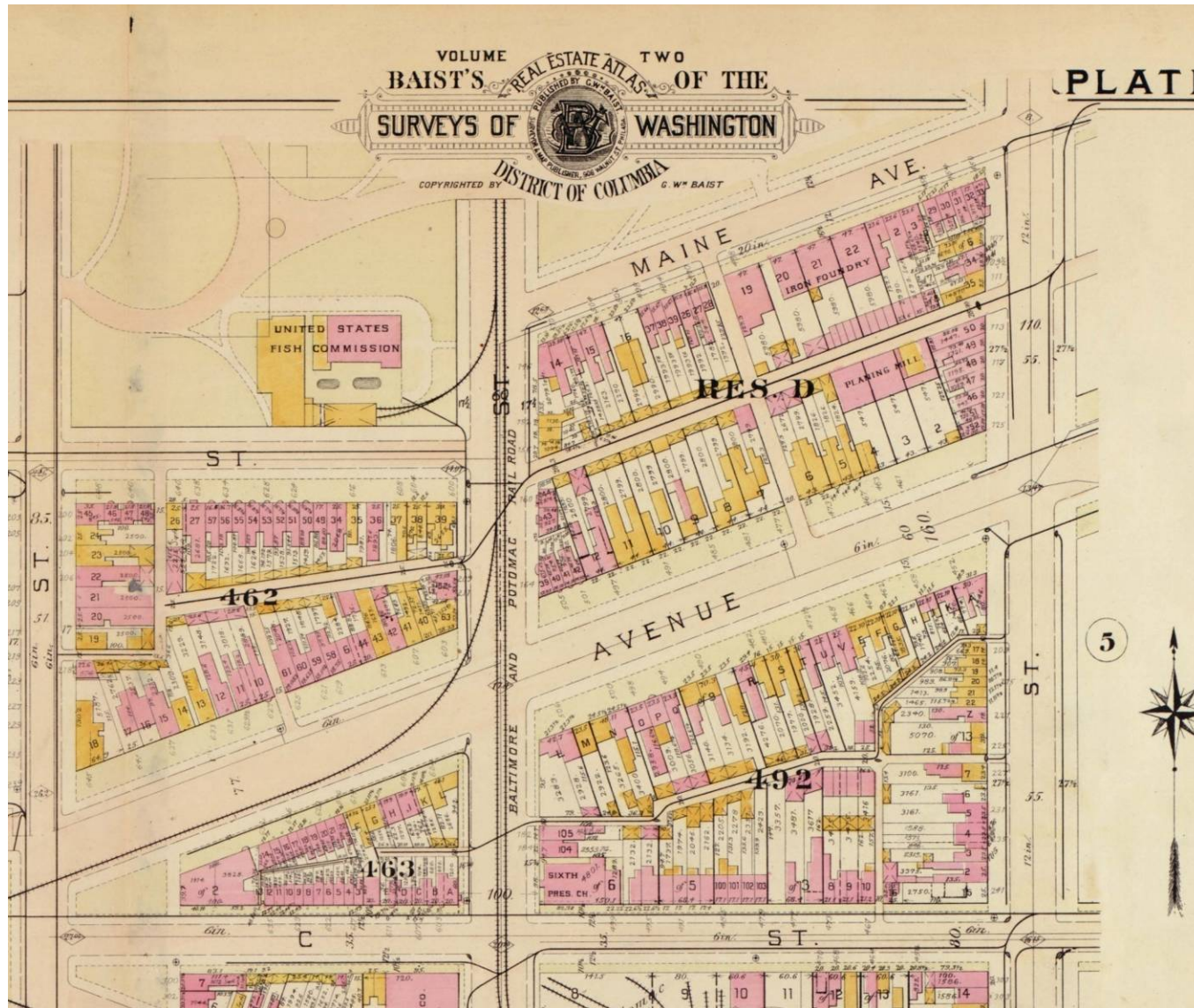


Figure 3-5: Baist Real Estate Survey Map 1903

Source: Library of Congress Geography and Maps Division

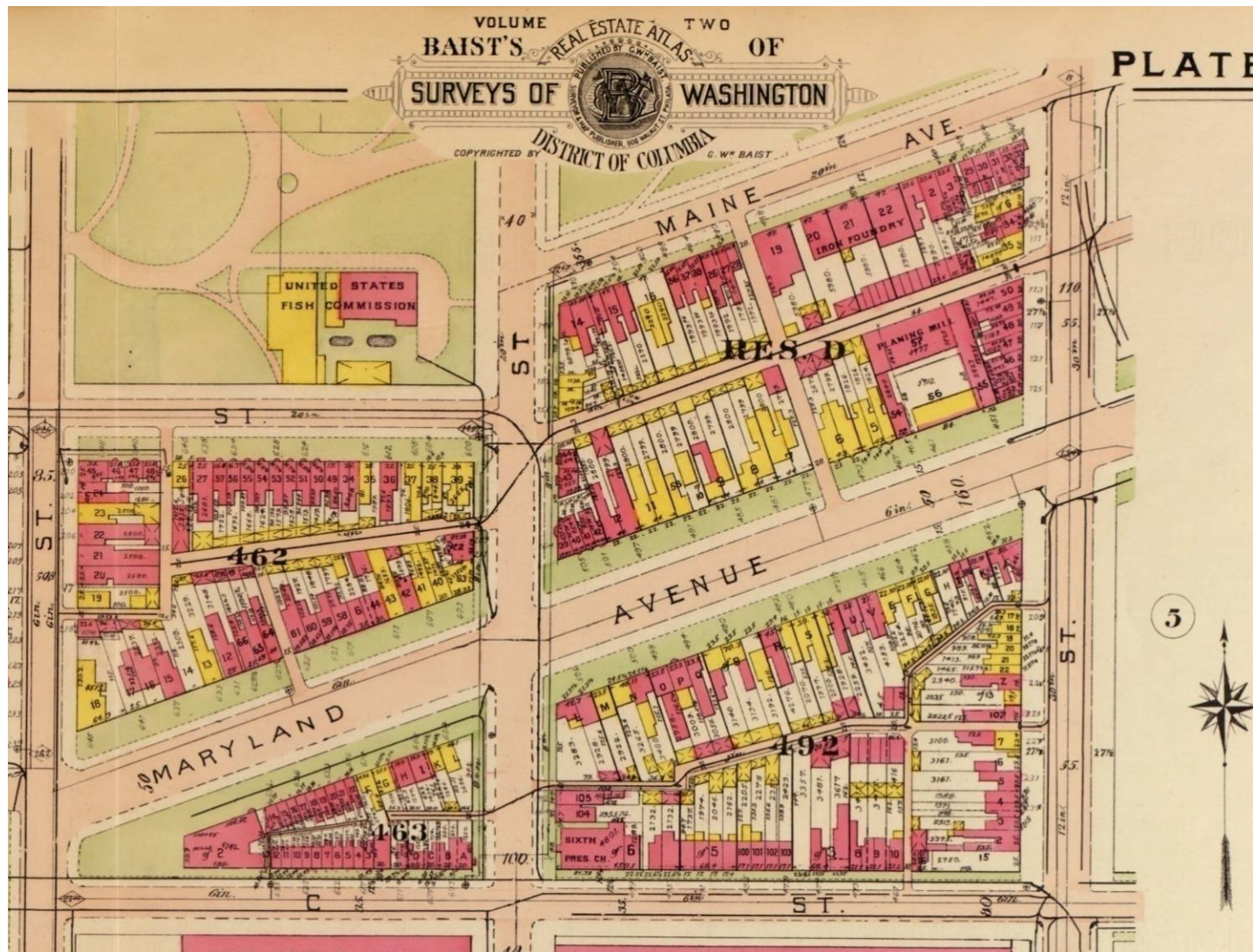


Figure 3-6: Baist Real Estate Survey Map 1909-1911

Source: Library of Congress Geography and Maps Division

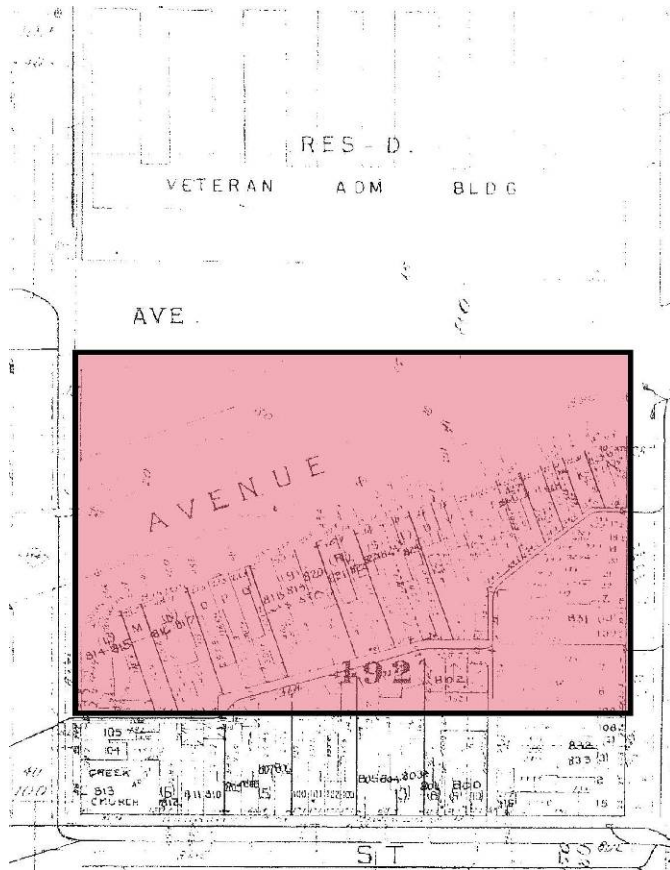


Figure 3-7 Baist Real Estate Survey Map 1945

Source: Library of Congress Geography and Maps Division

Constructed by GSA between 1959 and 1961, FOB 6 originally housed a portion of the headquarters function of the National Aeronautics and Space Administration (NASA), as well as employees of the U.S. Department of Health, Education and Welfare. A landscaped plaza was installed between the north face of the building and Maryland Avenue. This plaza comprises the

southeastern portion of the Memorial site. Maryland Avenue was further altered during this time period, with the single spur to Independence Avenue becoming a double spur and parking added along the side of the remaining portions of the diagonal Avenue. In addition, the northeastern end of this portion of Maryland Avenue was altered such that through traffic would not enter at the Independence Avenue and 4th Street intersection, but instead would be deposited on 4th Street just south of the intersection. This configuration persists today.

Archeological Potential

Given the proximity of the project site to Tiber, Goose, and St. James Creeks, prehistoric use of the area is likely. The possibility of alluvial deposits could have led to the preservation of prehistoric archeological sites and features; however, intensive urban development may have already impacted such sites and features. Given the historic development on the project site, it is possible that sub-surface features associated with the mid-19th to mid-20th century residential and commercial uses remain capped below fill across the project site, with the exception of the southernmost 22 to 52 feet bordering the LBJ Building, where a below-grade basement is located. The portion of Reservation D at the northwest portion of the site is considered to have moderate potential for prehistoric resources and moderate to high potential for historical archeological resources. The portion of Square 492 within the project area (excepting the location of the below-grade basement) is considered to have moderate potential for both prehistoric and historic resources. This applies to the portions of the plaza where subsurface development did not occur, particularly if these areas were covered with fill following demolition of the residential structures. The Maryland Avenue right-of-way within the project area is also considered to have moderate potential for both

prehistoric and historical archeological resources. Prehistoric archeological deposits could be buried beneath fill and remnants of the historic road surface could be buried beneath the current roadway. Excavations in nearby historic Reservation C for the National Museum of the American Indian revealed that a construction sequence similar to what took place at Square 492 did result in the preservation, beneath layers of deep fill, of domestic deposits from the 19th and early 20th century residential use of the area.

3.1.2 Historic Resources

This section documents historic resources, including historic structures and districts, as well as cultural landscapes, located within the APE. Buildings located within the Mall Historic District, a documented cultural landscape, are discussed under the heading Cultural Landscapes.

Historic Structures and Districts

Lyndon Baines Johnson Building and Designed Landscape

Originally known as Federal Office Building 6, the building located immediately adjacent to the south edge of the Memorial site was built as part of Washington's urban renewal efforts (Figure 3-8). It was designed for GSA by the architectural firms of Faulkner, Kingsbury & Stenhouse, and Chatelain, Gauger & Nolan, and constructed between 1959 and 1961. The building's long rectangular form anchored by granite-veneered pilotis, flat roof with setback top stories, and austere clean lines created by limestone panels and glass-curtain walls were designed to deliberately harmonize with the rigorous geometry of the granite and aggregate concrete hardscape and low-lying, light-tracery landscaping of the site. The union of building and site through materials and design is a hallmark of the Modern Movement, as expressed by the LBJ Building.

The building environs, including a plaza on its north side, are the work of the landscape architecture firm of Collins, Simonds & Simonds. Typical of modern design during this period, the landscape and building were designed together, with the outdoor space intending to serve as an extension of the indoor space. The plaza was planned as a series of interpenetrating spaces, including raised

terraces, three outdoor rooms, and a sunken courtyard. As originally designed, clusters of tall Southern Magnolia were located at the eastern and western ends of the plaza, while shorter saucer and star Magnolia were to be located at the center. Several of the trees remain. Bordered by granite-edged pits, these trees appear to have been scattered randomly across the plaza. Due to their height at maturation, together with their placement, these trees would have served to provide intermittent views of the east and west ends of the building's north façade, and fuller views of the upper stories of the center section of the building. Over time, many of the specimens have been replaced with other species. The plaza makes up the southeastern portion of the Memorial site.



Figure 3-8 North Elevation of the Lyndon Baines Johnson Building
Source: AECOM 2010

A 2011 determination of eligibility for the building and landscape concluded that the property is eligible for listing in the National Register under Criteria A and C for its significance in the areas of politics/government, landscape architecture, architecture, and community planning/development. It is eligible under Criterion A

as a key component of GSA's master plan for the design, construction, and funding of federal office buildings in the District of Columbia between 1956 and 1966. The location of the LBJ Building was the result of the first cooperative response by the federal government to the National Capital Planning Commission's 1950 Comprehensive Plan for the District of Columbia and the removal of temporary federal office buildings from the National Mall. The LBJ Building also reflects the direct participation of the federal government in the redevelopment plans for Southwest Washington, becoming the first federal office building constructed specifically as part of the Southwest Urban Renewal Plan. Furthermore, it is eligible under Criterion C as the most successful component of the Southwest Rectangle, a grouping of Modernist buildings at the southern edge of the National Mall. Significant to its mid-century aesthetic is the holistic treatment (hardscape and landscape) of the trapezoidal site, a character-defining aspect of Modernist design. It retains sufficient integrity of location, design, setting, materials, workmanship, feeling and association to convey its significance.

L'Enfant and McMillan Plans

The Memorial site is bordered and bisected by streets originally planned by Pierre Charles L'Enfant in the 18th century (Figure 3- 9). L'Enfant's 1791 Plan for Washington, one of the best American examples of a comprehensive Baroque city plan, defined the physical and symbolic character of the nation's capital through its arrangement of buildings, parks, roadways, and views. Maryland Avenue, 4th Street, and 6th Street were all components of L'Enfant's original design. As planned by L'Enfant, Maryland Avenue was a 160'-wide diagonal thoroughfare connecting the U.S. Capitol building with the Potomac River. Fourth and 6th Streets, which define the eastern and western boundaries of the Memorial site, were part of L'Enfant's orthogonal street grid.

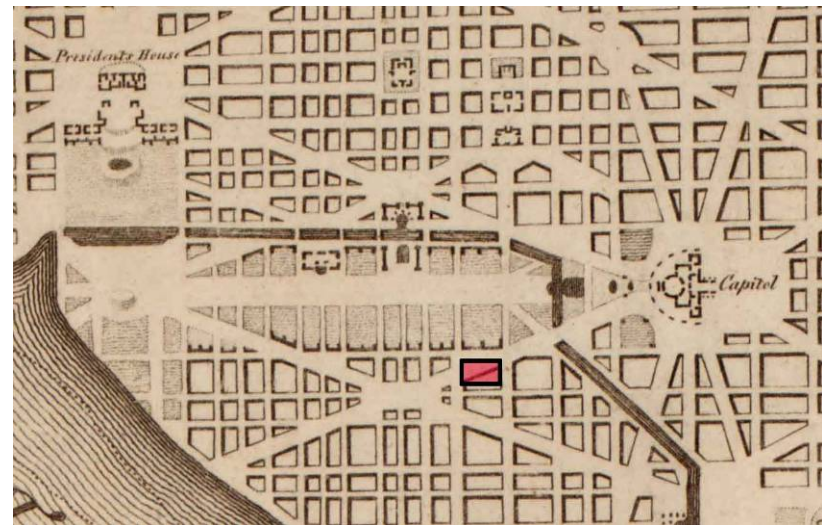


Figure 3-9 L'Enfant Plan as engraved by Andrew Ellicott, 1792

Source: Library of Congress, Geography and Maps Division

At the turn of the century, the McMillan Commission expanded on L'Enfant's Plan in a manner consistent with the City Beautiful movement, extending the National Mall and terminating several visual axes with monuments (Figure 3-10). The McMillan Plan envisioned Maryland Avenue as a broad, tree-lined thoroughfare that provided a visual connection to the U.S. Capitol building. The Plan also established Independence Avenue (formerly South B Street) as a continuous east-west axis along the southern boundary of the Mall, altering the street pattern in the vicinity of the site. The L'Enfant Plan is listed in the NRHP. A draft National Historic Landmark nomination was also prepared in 2002. The nomination recognizes components of the McMillan Plan that contribute to the plan of the city. Maryland Avenue is a Contributing Major Avenue, Independence Avenue (B Street South) is a Contributing Major Street, and 4th and 6th Streets are both Contributing North-South Streets. In addition, Maryland Avenue is a Contributing Vista along the radiating avenue to the U.S. Capitol, and 4th Street has a Contributing Vista along the major cross-axes to Judiciary Square. The northwestern portion of the site is a small component of Reservation 5, the balance of which comprises a portion of the Mall. Although historic maps of the area completed prior to the construction of Independence Avenue considered the NPS parcel together with the portion of the Mall directly northeast to be a single block (see Figure 3-6), the NPS parcel is not considered to be part of the Mall. Reservation 201 northeast of the Memorial site, and Reservations 200 and 113 southwest of the Memorial site, are considered to be contributing elements to the L'Enfant Plan (see Figure 3-9).

The Plan meets National Register Criterion A for its relationship with the creation of the new United States of America and the creation of a capital city. It meets Criterion B because of its

association with Pierre Charles L'Enfant and subsequent groups responsible for the planning and design of the city. It meets Criterion C as a representative example of a Baroque Plan with Beaux Arts modifications.

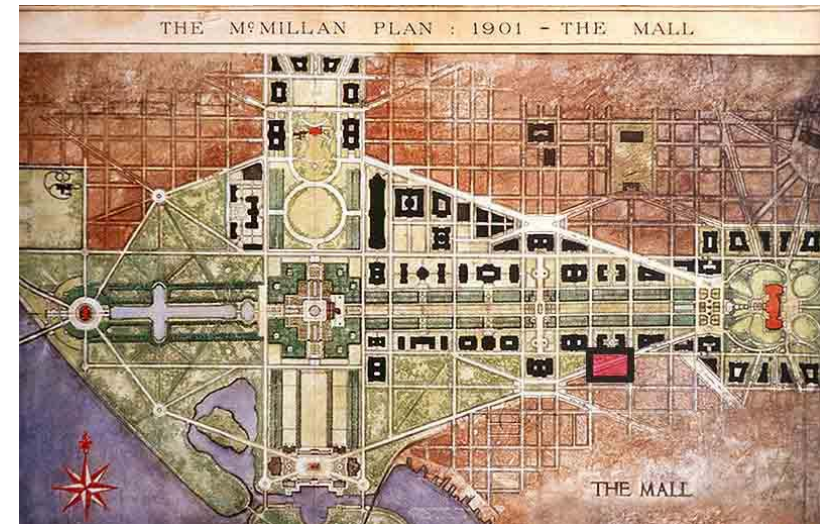


Figure 3-10 McMillan Plan
Source: NCP

Orville Wright and Wilbur Wright Buildings

The Orville and Wilbur Wright Buildings (Figure 3-11), located to the west of the Memorial site on Independence Avenue, were designed by the firms of Holabird & Root & Burgee, together with Carroll, Grisdale & Van Alen. Although constructed in 1963 as separate structures, the Orville Wright Building and the Wilbur Wright Building (FOB 10A and FOB 10B, respectively) were designed as one federal office building. The Orville Wright Building, located between 7th and 9th Streets, has served since its completion as the headquarters of the Federal Aviation Administration (FAA) and is the larger of the pair. The Wilbur Wright Building, located between 6th and 7th Streets, originally housed headquarters functions of NASA, including the Office of Manned Space Flight. It is now occupied by the FAA. These buildings are characterized by their smooth, flat facades that are composed of a glass and marble grid. The larger Orville Wright Building is raised on pilotis and measures 10 stories high, while the Wilbur Wright Building is six full stories with a lower level partially below grade.

A DOE was prepared in 2011 for the Wilbur Wright Building recommending its eligibility for listing in the NRHP. It was determined eligible under Criterion A because of its association with urban renewal in Southwest DC and under Criterion C as a representative example of modern design in Washington during this period. The Wilbur and Orville Wright Buildings are considered eligible as an ensemble based on their intrinsic design relationship.



Figure 3-11: Orville and Wilbur Wright Buildings

Source: AECOM, 2010

Wilbur J. Cohen Building

East of the Memorial site, the Wilbur J. Cohen Building was constructed in 1939 for the Social Security Administration (Figure 3-12). The structure is representative of the Stripped Classical style with its bands of vertically oriented windows. The building is significant under Criterion A for its role in city planning in Washington, DC. It is significant under Criterion B both as an example of Stripped Classical design and as the last work of Charles Klauder, a prominent architect known for his skill in melding historical references with modern programmatic needs. It is further significant for its association with the Social Security Administration and the New Deal. The Wilbur J. Cohen Building was listed in the DC Inventory of Historic Sites and the NRHP in 2007.



Figure 3-12: Wilbur Cohen Building
Source: AECOM, 2010

Hubert Humphrey Building

Located on Independence Avenue between 2nd and 3rd Streets SW, the Hubert Humphrey Building was constructed in 1977 to house the U.S. Department of Health and Human Services (Figure 3-13). Designed by Marcel Breuer and Herbert Beckhard, the precast concrete structure is an example of Brutalism. The design is characterized by its four corner towers, heavy concrete and glass facades, angled fins on its upper story, and open plaza. It has not yet been evaluated for its eligibility for the NRHP.



Figure 3-13: Hubert Humphrey Building
Source: AECOM, 2010

U.S. Capitol

The U.S. Capitol is one of Washington's and the nation's most iconic buildings. Located approximately ¼ mile northeast of the site, the Neoclassical style structure was designed by William Thornton in 1793, and then renovated and expanded in the 19th century by Benjamin Latrobe, Charles Bulfinch, and Thomas U. Walter (Figure 3-14). The structure is characterized by a large columned portico on the east and west fronts of the building, and a massive dome. The monumental building is sited on an original L'Enfant Appropriation and is set within a landscape designed by Frederick Law Olmsted. Both the Capitol dome and the grounds are directly visible from the Memorial site. The Capitol was designated a National Historic Landmark in 1960 and listed in the DC Inventory of Historic Sites in 1964.



Figure 3-14: U.S. Capitol Building

Source: AECOM, 2009

U.S. Botanic Garden

The U.S. Botanic Garden, located northeast of the Memorial site within the Capitol Grounds, showcases diverse vegetative species and ecosystems in varying climatic exhibits (Figure 3-15). The garden was originally established by Congress in 1820 and remains one of the largest of its kind in North America. Designed in the Beaux Arts style by Bennett Parsons & Frost in 1902, the garden was listed in the DC Inventory of Historic Sites in 1964.



Figure 3-15: U.S. Botanic Garden

Source: EDAW, 2008

Cultural Landscapes

The Mall

The Mall was a key component of the L'Enfant and McMillan plans for the city. The Mall extends from the Capitol Grounds on the east to 14th Street on the west, and from Pennsylvania and Constitution Avenues on the north to Maryland and Independence Avenues on the south. The NPS parcel, although part of Reservation 5 which includes portions of the Mall, is not considered to be part of the Mall (Figure 3-16).

Numerous national museums line the Mall, and a tree-lined greensward runs through the center. The Mall was listed in the DC Inventory in 1964 and the NRHP in 1966. It is also a contributing element to the L'Enfant Plan. In 2006, a cultural landscape inventory was completed for the Mall which identified contributing features and concluded that the Mall clearly has national significance. The following character-defining features proximate to the Eisenhower Memorial are listed as contributing features to the cultural landscape:

- Views to building facades from the Mall
- View up 4th Street, a cross-street
- Historic circulation of 4th Street



Figure 3-16: The National Mall

Source: EDAW, 2008

Located at the eastern edge of the Mall, Union Square connects it to the U.S. Capitol grounds. Union Square is the section of the Mall located between 1st and 3rd Streets, N.W. and S.W., Pennsylvania Avenue, N.W., and Maryland Avenue, S.W. The wedge-shaped site lies at the foot of Capitol Hill and functions as an intermediate landscape between the central landscape of the Mall and the U.S. Capitol Grounds. The enormous memorial to Ulysses S. Grant (installed 1922) extends for 252 feet across the site's east end, parallel to and a short distance from 1st Street. Planting beds at the ends of the platform help tie it visually to the ground. A six-acre wedge-shaped pool, with a broad, simple limestone coping, occupies the central third of the site and is set slightly below ground level. The vista to the U.S. Botanical Garden is a contributing element of the cultural landscape.

Although not identified as contributing elements in the NRHP nomination, the museums on the Mall are generally considered to contribute to its historic significance. These include the Hirshhorn Museum, designed by Gordon Buntshaft of Skidmore, Owings, and Merrill, and NASM, designed by Gyo Obata of Hellmuth, Obata + Kassabaum, both with visual connections to the Eisenhower Memorial site. NASM, located directly north of the Memorial site, is modern in style, consisting of a series of repeating rectangular blocks made of Tennessee Pink Marble. The Hirshhorn Museum, located northwest of the Memorial site, is also modern in style, its primary mass being cylindrical in form.

3.2 VISUAL RESOURCES

The following discussion of visual resources addresses both the existing visual character of the areas surrounding the Memorial site, as well as views and vistas in the vicinity of the site. For the purposes of this analysis, the term “vista” defines views of primary importance that were specifically planned, designed, and implemented, while the term “view” describes those unplanned views that resulted from the construction of other features. Due to the site location, views and vistas are generally afforded along streets that border and bisect the site, as well as across the plaza located north of the LBJ Building. Two major view corridors, Maryland Avenue and 4th Street, are both recognized as contributing vistas within the NRHP nomination for the L'Enfant Plan.

Memorial Site

The Memorial site is made up of three visually distinct areas: the GSA parcel that includes the plaza in front of the LBJ Building; the Maryland Avenue right-of-way; and the NPS parcel that contains community gardens and a small fitness area.

Due to the angle of Maryland Avenue, the plaza on the north side of the LBJ Building (Figure 3-17) is irregular in shape. Made up of a series of interpenetrating spaces, it follows a grid, responding to the symmetry of the LBJ Building. The two raised entry terraces are largely open paved areas that correspond to the openness of the building entrances. The terraces are accessed by stairs on three sides and each terrace has been retrofitted with accessible ramps.



Figure 3-17: Existing Plaza in front of Lyndon Baines Johnson Building

Source: AECOM, 2010



Figure 3-18: Maryland Avenue Right-of-Way and Parking

Source: AECOM, 2010

Flanking the raised entry terraces are more densely planted outdoor rooms, each differing in size and shape. Within these areas, shrubs and trees of varying sizes appear randomly placed. A sunken courtyard, accessed by a series of steps, is located at the east end of the plaza. Views from Maryland Avenue across the plaza towards the LBJ Building are filtered by vegetation. The north face of the LBJ Building, which borders the Memorial site, receives little direct sunlight. Indirect light is afforded by the large number of the building's windows.

The Maryland Avenue right-of-way runs diagonally through the Memorial site, physically and visually separating the GSA parcel from the NPS parcel (Figure 3-18). The area is visually disjointed, made up of a web of paved vehicular travel lanes, irregularly shaped grassy parcels, and a small surface parking lot. The Maryland Avenue right-of-way is directly on axis with, and provides views to, the U.S. Capitol Building.

The NPS parcel is triangular in shape and bordered on three sides by roadways (Figure 3-19). At the southwest end of the parcel is a small paved area that is used as an exercise course. The balance of the parcel is made up of open lawn and a series of community garden plots. The largest of these plots is bordered by a split-rail fence. Several trees dot the parcel and a small shed borders the fence on its south side. Lines of street trees on the north and west sides filter views to and from Independence Avenue and 6th Street. The community gardens and exercise course are not historic resources.



Figure 3-19: NPS parcel with community gardens and exercise course and NASM in the distance

Source: AECOM, 2010

Surrounding Visual Environment

The Memorial site lies within an area of monumental federal buildings located south of the Mall. While diverse in form and materials, they are largely unified in their use of pre-modern and modern styles including Stripped Classicism, the International Style, Formalism, and Brutalism.

North of the Memorial site, a series of mid-rise museum buildings line the south side of the Mall. NASM fills three full city blocks; its planar façade serves to visually enclose the Memorial site and obscures views of the open space of the Mall further to the north. The Hirshhorn Museum and NMAI which flank NASM to the west and east, respectively, are similar in height, but display softer curved forms. A wide, tree-lined sidewalk runs along the north side of Independence Avenue, physically separating the museum buildings from the roadway.

The south and east sides of the Memorial site are also visually defined by large mid-rise structures. The Wilbur Cohen Building (Figure 3-20) lies to the east of the Memorial site across 4th Street. A narrow planting bed divides the sidewalk from the west face of the building, and a line of street trees filter views between the Cohen Building and the Memorial site. The LBJ Building, filling two full city blocks, spans the southern boundary of the Memorial site, providing a continuous building line and obstructing views of the neighborhood to the south (see Figure 3-18).

Light entering and views from buildings affect their working environment. The LBJ Building receives little direct sunlight through its north side. Instead, the windows allow indirect sunlight to reach the building. On the lower floors, this sunlight is filtered by trees in the plaza and along the streets. The views from the

northern portion of the building are primarily unobstructed, with the exception of lower floors, where trees intermittently obscure views outside.



Figure 3-20: The Wilbur Cohen Building located directly east of the Memorial site

Source: AECOM, 2010

While the north, east, and south sides of the Memorial site are tightly defined, the area to the west is more open, due primarily to the diagonal alignment of the Maryland Avenue right-of-way. Directly west of the site, the Wilbur Wright Building (Figure 3-21) is set back from Maryland Avenue, allowing for a terrace and lawn on the building's south side. South of the Wilbur Wright Building across Maryland Avenue, the Capitol Gallery also has an open feel, with a plaza, Metrorail entrance, and lawn filling the space between the face of the building and the roadway. The Orville Wright Building one block further west breaks the open feeling of the area, obscuring views in this direction.

The Cohen and Wilbur Wright Buildings receive direct sunlight through their western and eastern sides, respectively, depending upon the time of day. Windows allow direct and indirect sunlight to reach the building. On the lower floors, this sunlight is filtered by trees. The views from these portions of the buildings are primarily unobstructed, with the exception of lower floors, where trees intermittently obscure views outside.



Figure 3-21: The Wilbur Wright Building and intersection of 7th Street and Maryland Avenue located west of the Memorial site
Source: AECOM, 2010

View Corridors

Maryland Avenue

As designed by L'Enfant, Maryland Avenue was a wide diagonal thoroughfare intended to visually connect the U.S. Capitol with the Potomac River. Over time, the roadway has been fragmented such that it does not consistently follow the historic view corridor. In some blocks, buildings define the edges of the view, but for many blocks the buildings are aligned east-west along grid streets and thus have substantial setbacks from Maryland Avenue (Figure 3-22). In these blocks where the buildings are not aligned to Maryland Avenue, the street wall lacks definition.

Through the Memorial site, the Maryland Avenue roadway diverges from its historic alignment with the U.S. Capitol Building. The vista northeast from the site is framed by buildings and terminates at the Capitol dome, with portions of the dome partially obscured by existing street trees. The vista southwest from the site also varies in composition. Street trees and buildings with large setbacks line Maryland Avenue to the south, loosely defining the edges of the vista. From the Capitol steps the expansive vista southwest along Maryland Avenue does not reach the waterfront, but rather terminates at Reservation 113 two blocks west of the Memorial site.



Figure 3-22: Maryland Avenue view corridor looking northeast towards the U.S. Capitol Building from the 7th Street

Source: AECOM, 2010

Independence Avenue

Independence Avenue is a broad, six-lane, two-way street. While many of the buildings that line Independence Avenue are similar in height, they vary in setback, form, and materials, forming an inconsistent building line along the avenue (Figure 3-23). Vistas are framed by street trees of varying sizes. The lines of street trees and buildings are broken by open spaces and roadways, including the Memorial site between 4th and 6th Streets. The vista to the east along Independence Avenue, defined by mid-rise buildings and framed by street trees of varying sizes, follows the roadway up to Capitol Hill. The vista to the west along Independence Avenue is interrupted by the arched pedestrian bridges that connect the U.S. Department of Agriculture buildings on either side of the avenue.



Figure 3-23 Independence Avenue view corridor from 7th Street

Source: AECOM, 2010

4th Street

In Southwest, DC, 4th Street is a wide four-lane right-of-way, a major visual corridor in L'Enfant's Plan for the city. North of Independence Avenue, the view corridor opens to incorporate the greenspace of the Mall. The vista north along the corridor terminates at the National Building Museum (Figure 3-24). The vista south along the right-of-way is framed by the greenspace of the Mall and narrowed by the canopies of mature street trees. In the block south of Independence Avenue, at the Memorial site the Wilbur J. Cohen Building provides a sharply defined edge to the vista on the east side, while the open space of the LBJ plaza is visible on the west edge of the vista. The vista looking south from the Memorial site is tightly framed by the Wilbur Cohen and LBJ Buildings, as well as lines of street trees. One block further south, the vista is bordered on both sides of the roadway by a consistent building line. The view corridor terminates at the railway infrastructure at Virginia Avenue, several blocks south of the Memorial site.



Figure 3-24: 4th Street view corridor looking north from Independence Avenue

Source: AECOM, 2010

3.3 PARK OPERATIONS AND MANAGEMENT

The northwest corner of the project site is under the jurisdiction of the National Mall and Memorial Parks (NAMA), which is part of the National Capital Region of the National Park Service. NAMA manages various NPS units on the National Mall, which received approximately 22 million visitors in 2008, and sites in the northwest section of Washington, DC that provide visitors with opportunities to commemorate presidential legacies; honor the courage and sacrifice of war veterans; and celebrate the United States commitment to freedom and equality. Included in NAMA are the Washington Monument, Lincoln Memorial, and Jefferson Memorial; World War II Memorial, Korean War Veterans Memorial, and Vietnam Veterans Memorial; and areas focusing on recreation, such as the National Mall and East and West Potomac Parks (NPS, 2010).

NPS manages and maintains over 1,000 acres in NAMA, including more than 80 historic structures and over 150 major named historic parks, squares, circles and triangles such as Dupont Circle, Farragut Square, and Columbus Plaza at Union Station (see Figure 3-25). NAMA has employed an average of 378 full-time equivalent employees to manage its parkland since 1996 (NPS, 2010). Its management structure is divided into six divisions under the Office of the Superintendent: Administration, Facilities Management, Interpretation and Education, Permits Management, and Resource Management. Budgets are not assigned to specific memorials or areas of the park, but rather come as one appropriation. Operation and management activities range from interpretation to security to maintenance.

At the Eisenhower Memorial site, NPS does not have staff dedicated to its parcel. As such, no ranger is present on-site. Mowing and other landscaping activities for the Memorial site occur on a regular basis during the year as part of a coordinated program for multiple sites within NAMA. NPS also maintains the approximately fifteen pieces of metal and plastic exercise equipment and associated signs at the site.

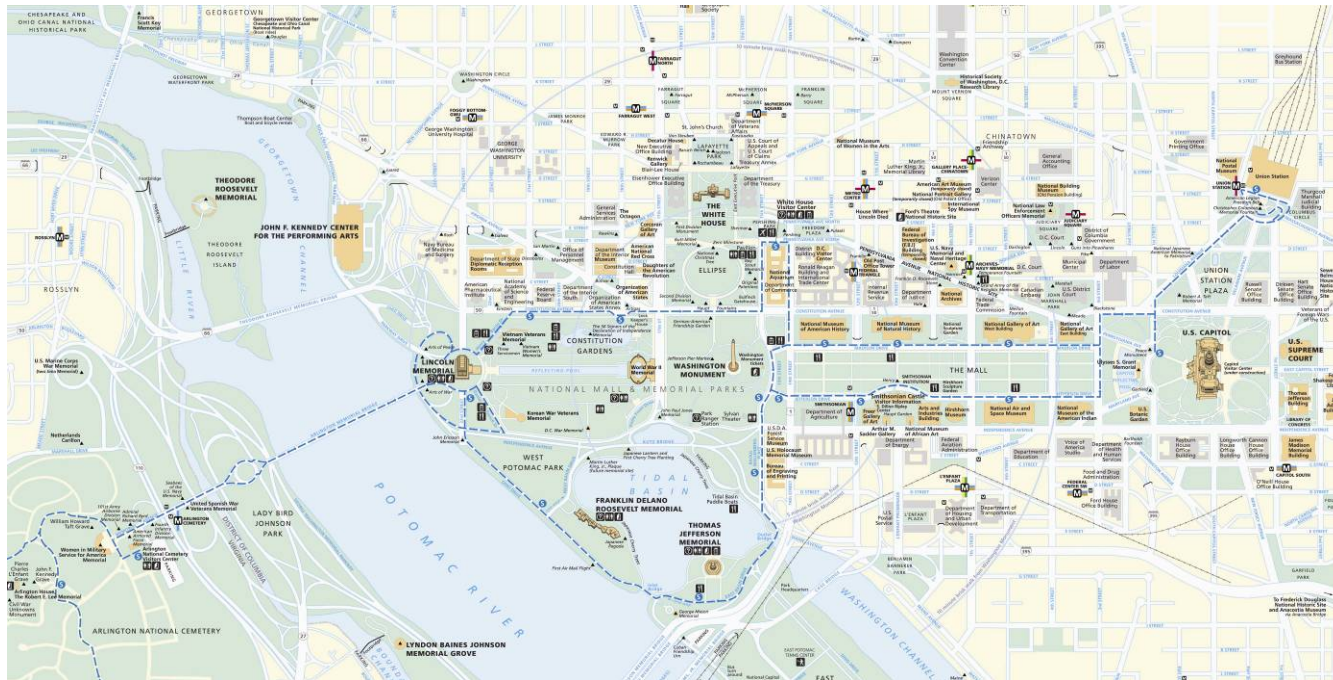


Figure 3-25: Map of the National Mall and Memorial Parks (portion of jurisdictional area)

3.4 SOILS

The Eisenhower Memorial site is regionally located within the geological province of the Atlantic Coastal Plain Region, where natural sedimentary materials of sand, clay, and silt overlay crystalline bedrock. The surrounding area has been historically developed by the placement of fill material upon a geologic terrace above the Potomac River floodplain. The terrace deposits have been encountered at depths of 32 to 44 feet below the ground surface (Smithsonian Institution, 1993).

The surface soils of the area are classified as Urban Land Association, which are soils that have been previously disturbed, cut, or filled, and may be covered by impervious surfaces. Existing fill material may be present on the site at varying depths and, based on previous investigations at the adjacent NMAI, may contain foreign materials and trace petroleum odors due to historical use of the area (Smithsonian Institution, 1993).

The majority of the site soils, as well as those surrounding the site, have been altered and covered with grassed areas and impervious surfaces such as asphalt streets and concrete sidewalks and plazas. A total of 0.9 acres of productive soils are at the Memorial site. The NPS parcel within the site is predominantly grassed open space, as well as 0.15 acres of community gardens. The majority of the GSA parcel within the site consists of a paved plaza and sidewalks to the LBJ Building. The Maryland Avenue right-of-way is largely covered by pavement, with some grassed areas.

A preliminary soil investigation was conducted on behalf of the EMC. Upon reviewing limited soil data available from Washington Metropolitan Area Transit Authority (WMATA) soil borings, the study found that there appears to be no geotechnical findings that would limit the construction of the Eisenhower Memorial (EarthTech, 2005). The study extrapolated that the soil condition at the Memorial site consists of approximately 15 to 25 feet of fill material over original ground, which is typically mixed sands and gravels with some debris. The original ground is likely to consist of 10 to 20 feet of silts over stiff sand clay of Cretaceous Age as deep foundation material (EarthTech, 2005).

A Geotechnical Engineering Report, prepared for EMC in 2010, built on the previous studies. The 2010 report used eleven soil borings in its investigation and determined that the majority of the site is covered with 8-19 feet of fill material, followed by varying degrees of sand/silty clays, gravel, and sand (AECOM, 2010a). One site probe at the northeastern corner of the site had no fill.

Sampling for an Environmental Hazards report, also prepared for EMC in 2010, discovered petroleum-impacted soils at the site (AECOM, 2010b). These are likely a result from the historic use of the site as a filling station. The concentrations detected do not exceed any established screening level or cleanup standard.

3.5 TRANSPORTATION

3.5.1 Vehicular Traffic

Roadways

The Eisenhower Memorial site is an assembly of parcels comprising a total of approximately four acres in Southwest DC, near the U.S. Capitol. To the south of the site lies the LBJ Building. The other sides are bounded by the following streets:

- Independence Avenue to the north;
- 4th Street to the east; and
- 6th Street to the west.

Within the site, Maryland Avenue runs from 6th Street to Independence Avenue, crossing the site diagonally, southwest to northeast. This divides the site into two triangular parcels. A spur road from Maryland Avenue leads to 4th Street, further dividing the site. One block to the west, 7th Street is an important roadway in the vicinity of the site. The roadways on and surrounding the site are shown in Figure 3-26, and are described as follows:

- *Independence Avenue* is a two-way, eight-lane minor arterial street. It connects the U.S. Capitol and numerous federal buildings, including the Departments of Health and Human Services, Transportation, Energy, and Agriculture, as well as several Smithsonian Institution museums on the Mall. No on-street parking is allowed during peak hours (Monday through Friday, 7:00 a.m. to 9:30 a.m. and 4:00 p.m. to 6:30

p.m.). During off-peak periods, the roadway operates as a six-lane street with parking.

- *Maryland Avenue* essentially functions in two different ways near the site. Between 7th Street and Independence Avenue, it runs diagonally for about two city blocks and is classified as a collector facility. From 7th Street to a point 150 feet east of 6th Street, this road is a two-lane street with parking prohibited during the same peak periods described above. Functioning differently, the remainder of Maryland Avenue eastward to Independence Avenue is a six-lane divided, urban street, except when parking is allowed, during which times it operates as a four-lane street. Maryland Avenue intersects with Independence Avenue mid-block between 6th and 4th Streets as a yield-controlled intersection. Traffic can egress and ingress Maryland Avenue only during gaps in traffic flow along Independence Avenue. Dual right turn movements are allowed from eastbound Maryland Avenue to eastbound Independence Avenue during the morning and evening peak periods. It is relatively unusual to have a yield traffic control for this situation. Northeast of the site, Maryland Avenue continues across Independence Avenue, crossing 3rd and 1st Streets until it terminates at the U.S. Capitol grounds.
- A one-way *Maryland Avenue Spur* road runs from Maryland Avenue along the northern edge of the LBJ Building site to 4th Street, just south of Independence Avenue, at a stop sign-controlled “T” intersection. The spur road provides egress from a small parking lot to the north and offers curb parking along the south side.

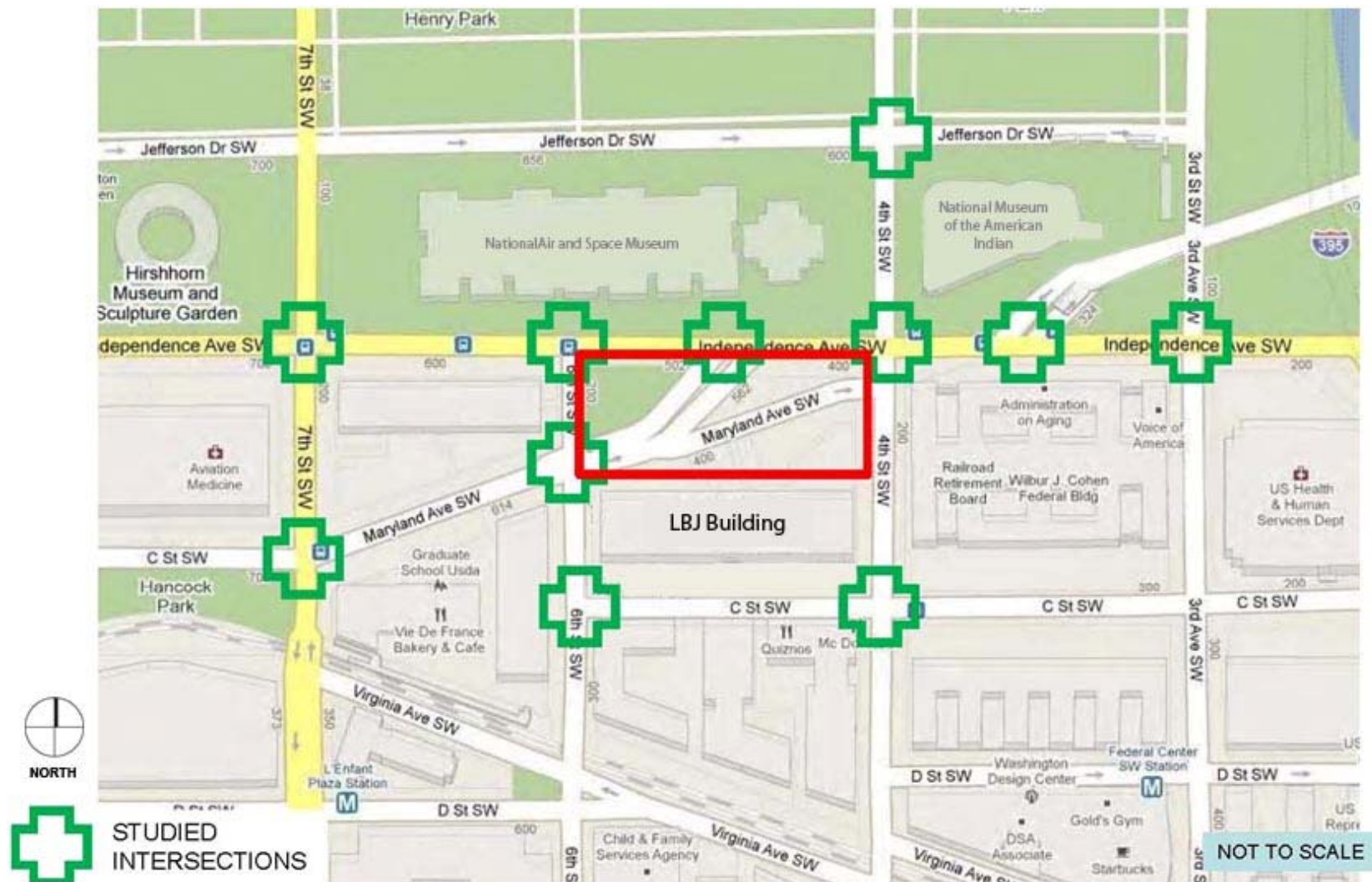


Figure 3-26: Studied roadways and intersections
 Source: AECOM, 2010

- *4th Street* runs as a north-south collector road along the east side of the Eisenhower Memorial site and the LBJ

Building, and forms an intersection with Independence Avenue. A minor intersection is also formed with the Maryland Avenue spur road. In this area, 4th Street operates as a two-lane street with parking allowed on the west side during off-peak hours. South of the site, 4th Street continues under Interstate 395 (I-395) to I Street.

- *6th Street* serves as a north-south, four-lane collector street with no on-street parking allowed during peak hours. During off-peak periods, 6th Street operates as a two-lane street. Bordering the west side of the Eisenhower Memorial site, 6th Street intersects Maryland Avenue and Independence Avenue across from NASM.
- *7th Street* is an important north-south, six-lane collector street with intersections at Maryland Avenue and Independence Avenue. During off-peak periods, when parking is permitted, the street operates as a four-lane facility.
- *Regional roadway access* is provided from the site to I-395 via 14th, 12th, 9th, or 3rd Streets or via Washington Avenue. I-395 provides access to Virginia and the Capital Beltway (I-495) to the west and provides access to southeast Washington, Maryland and the Capital Beltway via Interstate 295 (I-295).

Intersections

Intersections involving the site roadways (described above) are controlled by electronic traffic signals or signage, and include:

- Independence Avenue at 4th Street (signalized);
- Independence Avenue at Maryland Avenue, between 4th and 6th Streets (yield sign);
- 6th Street at Independence Avenue (signalized);
- 6th Street at Maryland Avenue (signalized);
- 7th Street at Independence Avenue (signalized); and
- 7th Street at Maryland Avenue (signalized).

Additional intersections around the site include:

- 3rd Street at Independence Avenue (signalized);
- Independence Avenue with Maryland Avenue, between 3rd and 4th Streets, east, at NMAI (yield sign);
- 4th Street at C Street (signalized);
- 4th Street at Jefferson Drive (signalized); and
- 6th Street at C Street (signalized).

The unsignalized, yield-controlled intersection of Maryland Avenue and Independence Avenue requires traffic movements from Maryland Avenue to wait for a break or opening in the flow of traffic to turn onto Independence Avenue. This can create delays and driving hazards during peak traffic periods. In addition, this Traffic on the roadway network around the site operates efficiently and has excess capacity under most circumstances. However, traffic can be constrained due to the intermittent movement of taxis, buses, service vehicles, and police, and from visitors searching for parking spaces, particularly before and after events on the National Mall.

Transportation Studies

A number of traffic studies for the development of a presidential memorial at this site have been conducted. A preliminary study of vehicular and pedestrian traffic, and parking for the site was prepared for EMC in October 2005 as part of the due-diligence site assessment of the site for the proposed Eisenhower Memorial. The study identified existing roadways, vehicular traffic, and parking on and adjacent to the site.

In order to determine the area's traffic demand, manual traffic turning movement counts were taken in September, 2005 during mid-week days for three, two-hour peak periods (morning, mid-day, and evening) at the four major intersections on and adjacent to the site. At that time, it was concluded that vehicular traffic volumes on the Maryland Avenue segment within the site were comparatively low and substantially below the capacity of this existing configuration. The traffic signals and unsignalized intersections typically operate with very little delay or stacking of vehicles. Traffic volumes were heaviest on Independence Avenue, with the heaviest

intersection is located mid-block on Independence Avenue between the intersections of 4th and 6th Streets with Independence Avenue. This creates additional vehicle turning movements (unsignalized) between the turning movements at the two signalized intersections.

traffic headed west in the morning peak and conversely, headed east in the evening peak (Earth Tech, 2005).

A more detailed Traffic Impact Study was prepared on behalf of EMC in February, 2006. The traffic impact study looked at traffic patterns, volumes, and level-of service (LOS). Supplemental traffic counts were taken at the intersections of 7th Street with Independence and Maryland Avenues during the same periods as the October 2005 study. A Saturday peak period (1:00 p.m. to 2:00 p.m.) was added for these two new intersections and the four site intersections (EarthTech, 2006). The traffic study concluded that all intersections in the study area operated at an overall LOS C, except for the unsignalized intersection of Independence Avenue with Maryland Avenue (west), which operated at a LOS D.

An additional study of the site and the potential traffic impacts of the proposed Eisenhower Memorial was undertaken in 2010. This study evaluated turning movements, LOS, and traffic counts at the site. The results indicated that existing conditions were very similar to those in the previous studies. The intersections typically operate with very little delay or stack of vehicles, and the heaviest traffic volumes are along Independence Avenue headed west in the morning peak hours and headed east in the evening peak hours (AECOM, 2010d).

Peak Traffic Volumes

The highest traffic volumes occurred during four peak periods (see Table 3-2 below):

- Weekday morning (7:00 a.m. to 9:00 a.m.);
- Weekday mid-day (12:00 noon to 2:00 p.m.);
- Weekday evening (4:00 p.m. to 6:00 p.m.); and
- Weekend peak hour (Saturday 12:00 noon to 2:00 p.m.).

In 2010, AECOM analyzed the Average Daily Traffic (ADT) volumes for roadway links, which were derived from District Department of

Transportation (DDOT) 2008 traffic volumes. The results are shown below.

The heaviest traffic movements occur on Independence Avenue, with the highest volumes of 2,804 vehicles occurring during the weekday evening peak between Maryland Avenue and 4th Street. Volumes dropped dramatically during the peak mid-day (1,433 vehicles). The predominant direction of flow is eastbound during the evening peak period, and westbound in the morning peak period (2,350 vehicles). Maryland Avenue on-site experiences its highest volumes (279 vehicles) during the evening peak period in the eastbound direction, turning right (east) at the yield-controlled intersection to join the predominant eastbound traffic on Independence Avenue during the evening peak period.

Table 3-2: Existing Peak Travel Volumes

Roadway Segment (between intersections)	AM Peak Volumes	Mid-day Peak Volumes	PM Peak Volumes	Sat. Peak Volumes
Independence Avenue (Maryland Ave and 4 th Street)	2,350	1,433	2,804	1,023
Independence Avenue (6 th Street and Maryland Avenue)	2,168	1,352	2,516	975
Independence Avenue (7 th Street and 6 th Street)	2,361	1,526	2,679	1,033
Maryland Avenue (6 th Street and Independence Avenue)	236	101	279	77
Maryland Avenue (7 th Street and 6 th Street)	259	64	197	65
7 th Street (Independence Ave and Maryland Avenue)	1,058	793	984	531
6 th Street (Independence Ave and Maryland Avenue)	273	213	240	101
6 th Street (Maryland Avenue and C Street)	290	251	400	103
4 th Street (Independence Avenue and C Street)	346	286	447	207

Source: AECOM, 2010

The second-highest traffic volume in the site vicinity is observed on 7th Street between Independence and Maryland Avenues during the morning peak period (1,058 vehicles). During the mid-day peak, volume reduces to 793 vehicles.

Volumes on 6th Street are more balanced between morning peak (273 vehicles) and evening peak periods (240 vehicles) from Independence to Maryland Avenues. The highest volume (400 vehicles) on 6th Street occurs during the evening peak period from C Street to Maryland Avenue and drops to 240 vehicles north of the Maryland Avenue intersection. This decrease is a likely indication of vehicles turning northeast onto Maryland Avenue on-site to turn right (east) at the yield-controlled (unsignalized) intersection on Independence Avenue, rather than utilizing the 6th Street signalized intersection at Independence Avenue.

Traffic volumes on 4th Street are higher than on 6th Street, and are highest during the evening peak period (447 vehicles), predominantly headed northbound and turning right (east) onto Independence Avenue.

Level of Service Analysis

Level of Service (LOS) is a quality measurement of traffic flow in terms of speed and travel time, freedom to maneuver, comfort, and convenience. There are six LOS designations represented by the letters A through F, with LOS A representing the best operating conditions and LOS F representing the worst. Signalized intersection LOS is determined by seconds delay per vehicle. The designations are summarized in Table 3-3.

Table 3-3: Level of Service Standards

Level of Service	Signalized Intersections Average Control Delay (seconds/vehicle)
A	Less than 10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	More than 80

Source: AECOM, 2010

Generally, LOS C or better is desired; however, in major urban areas such as the District, LOS D is considered acceptable. LOS E and F are considered unsatisfactory because they are at or exceeding capacity, requiring an extra light cycle to pass through the intersection. Based on the 2010 analysis, all of the intersections studied operate at LOS C or better; exceptions include: the intersection of Independence Avenue and 3rd Street, which operates at LOS D in the evening peak hour and the existing unsignalized intersection of Independence and Maryland Avenues (East, at NMAI), which operates a LOS D in the morning peak hour. Table 3-4 shows the existing LOS conditions at the study intersections.

Table 3-4: Existing Level of Service Conditions

Location		AM Peak		Mid-Day Peak		PM Peak		Sat. Peak
	Delay/Sec	LOS	Delay/Sec	LOS	Delay/Sec	LOS	Delay/Sec	LOS
Independence Avenue at 4 th Street	11	B	11	B	14	B	17	B
Independence Avenue at Maryland Avenue (West)	15	C	15	B	16	C	14	B
6 th Street at Independence Avenue	17	B	8	A	14	B	8	A
6 th Street at Maryland Avenue	14	B	16	B	18	B	11	B
7 th Street at Independence Avenue	19	B	16	B	21	C	16	B
7 th Street at Maryland Avenue and C Street	11	B	8	A	8	A	8	A
3 rd Street at Independence Avenue	20	B	21	C	23	D	27	C
Independence Ave at Maryland Avenue (East, at NMAI)	32	D	17	C	15	C	23	C
4 th Street at Jefferson Drive	9	A	16	B	10	B	15	B
4 th Street at C Street	14	B	14	B	14	B	13	B
6 th Street at C Street and Garage Entrance	14	B	14	B	15	B	15	B

Source: AECOM, 2010

In addition to examining LOS for the intersections as a whole, the 2010 traffic analysis reviewed specific movements, i.e. lanes of traffic, at these intersections. Around the site, the following intersections with Independence Avenue operated at LOS D or better during peak periods:

- Saturday peak northbound 3rd Street; and
- Evening peak southbound 3rd Street.

The following intersections with Maryland Avenue operated at LOS D during peak periods:

- Mid-day peak eastbound at 6th Street ;
- Evening peak eastbound at 6th Street ; and
- Evening peak westbound 7th Street.

3.5.2 Parking

Parking facilities in the study area include metered parking, public agency permit (GSA), public garage, taxi zones, and bus zones. The Memorial site currently has a total of 67 parking spaces (53 metered, 14 permitted). The parking space distribution is as follows:

- Maryland Avenue (22 metered and 1 permitted)
- Maryland Avenue spur to 4th Street (11 metered and 11 permitted)
- One-way parking area (20 metered and 2 permitted)

The additional curb metered parking supply within walking distance is 197 spaces. Of those 197, 104 of them are on street sections bordering the site (Independence Avenue and 4th and 6th Streets). The curb metered parking duration in the area generally has a limit of two hours. Curb metered parking along Independence Avenue is prohibited Monday through Friday during the peak periods of 7:00 a.m. to 9:30 a.m. and 4:00 p.m. to 6:30 p.m. Not included in the total 250 curb metered parking supply, both on- and off-site, are 89 (including 13 on Maryland Avenue at the Memorial site) permitted spaces found within one block of the site.

A public parking garage is located at 500 C Street. The capacity of the garage with stacked parking is 634 vehicles. During stacked operation, the customers leave the keys with the attendant to park the car. The hours of operation are 6:00 a.m. to 9:00 p.m. on weekdays and 9:00 a.m. to 6:00 p.m. on weekends.

Table 3-5: Parking by Type in Vicinity of Memorial

	Total	On-Site	Adjacent to the Site	Within 1 Block
Permit	89	14	n/a*	75
Metered	250	53	104**	197
Garage	634			634
Total	973	67	104**	906

*Permit parking adjacent to the site were not specifically calculated, but are included in the Within 1 Block.

**These parking spaces are included in the Within 1 Block calculation for metered parking spaces.

Source: AECOM, 2010

The overall total supply is 973 parking spaces, including curbside spaces (both metered and permitted) in and around the site and the parking garage (Figure 3-27).

Parking Demand and Supply

As part of the 2006 Traffic Impact Study, a parking field study was conducted to determine the number of parked vehicles in the vicinity of the Eisenhower Memorial site. The study was conducted between the hours of 11:00 a.m. and 1:00 p.m. Observations indicated that peak demand for parking is around noon. The field study showed that parking occupancies varied, from 58% occupancy along Independence Avenue in front of the site to 100% occupancy along Maryland Avenue, to the southwest of the site. Parking on the site, along Maryland Avenue and its spur, was

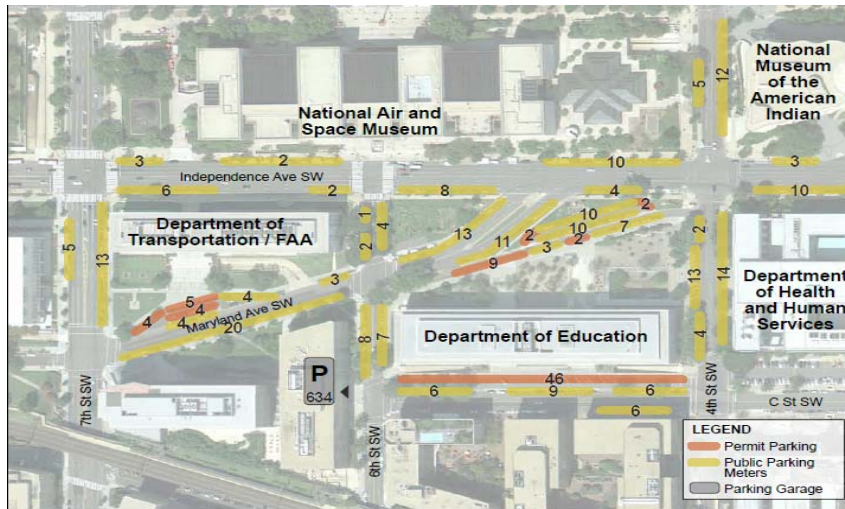


Figure 3-27: Parking supply in Memorial vicinity

Source: AECOM, 2011

approximately 70% occupied. South of the site, on-street parking was at or near capacity. The study also showed that in addition to Maryland Avenue located southwest of the site, 6th Street experienced 100% occupancy south of the site, and C and 4th Streets experienced 96% and 94% occupancy, respectively. In addition, the parking garage at 500 C Street operates at 64% occupancy during weekdays and much lower on weekends, according to garage records (EarthTech, 2006).

A new parking usage survey was performed in 2010 between 7:00 a.m. and 6:30 p.m. on two typical weekdays for street segments at and adjacent to the Memorial site, as opposed to those within one block of the Memorial site surveyed by the 2006 TIS (Table 3-6).

Table 3-6: Existing Available Memorial Site Parking

Time	Number of Empty Parking Spaces			
	Wednesday (On-Site)	Wednesday (Off-Site)	Thursday (On-Site)	Thursday (Off-Site)
7AM-8AM	33	62	38	64
8 AM-9AM	18	62	30	60
9 AM-10 AM	7	57	15	57
10 AM-11 AM	6	22	4	21
11 AM-Noon	8	14	6	8
Noon-1 PM	16	10	12	14
1 PM-2 PM	6	19	12	10
2 PM-3 PM	3	11	15	17
3 PM-4 PM	9	22	21	27
4 PM-5 PM	21	57	33	56
5 PM-6 PM	34	69	46	69
6 PM-6:30	46	71	47	63
Daily Average	33%	38%	44%	37%

Source: AECOM, 2010

Weekdays were chosen because those days would be the prevailing conditions, and they are typically busier than weekends. Wednesday and Thursday were selected to represent two average weekdays. The parking use survey did not include those metered or permitted spaces that were within one block of the site and were also on a street section that did not border the Memorial. The purpose of this new study was to assess existing parking conditions within the project site and its vicinity throughout the day, as opposed to only two mid-day hours. Based on the 2010 observations, an average of 33 and 44 percent of curb metered parking spaces at the Memorial site was available on the two weekdays surveyed (AECOM, 2010b). An average of 37 and 38 percent of available on-street metered parking at streets bordering the site (Independence Avenue and 4th and 6th Streets) was available (AECOM, 2010b).

3.6 VEGETATION

The site is located in an urban environment, in which the natural environment has been previously disturbed, developed, and partially restored. Limited vegetation on the site consists of landscaped grasses, shrubbery, trees, and community gardens.

The NPS parcel consists primarily of grassed, open space, occupied primarily with clusters of community garden plots of varying shapes and sizes, and a few small to medium trees. The DDOT parcel consists of the site roadways with open, grassed area between Maryland Avenue and the spur road parking lane, and a narrow strip of grassed area on the traffic island of Maryland Avenue. The GSA parcel contains minimal grassed areas with an open paved plaza with tree boxes, planters, and a below-grade, grassed patio. There is a narrow grass strip between the curb of Independence Avenue and the associated sidewalk on the northern perimeter of the site. The total vegetated area of the Memorial site is 0.9 acres.

There are 44 trees on the site (19 in the plaza, 25 along the street and throughout the site). Of the street trees, approximately 8 trees are large (20 inches or greater in diameter), 8 are medium-sized (less than 20 inches and greater than 6 inches in diameter), and 9 are small (6 or less inches in diameter). On the NPS parcel, there are 9 trees, including the street trees; there are 9 trees on the DC parcel, including 4 along Independence Avenue; and 26 trees on the GSA parcel, including 8 street trees.

Table 3-7: Existing Trees by Parcel

	NPS	GSA	DDOT
Street Trees	8	8	9
Plaza or Site Tree	1	16	
Total	9	26	9

The dominant species is Willow Oak (*Quercus phellos*) on Maryland Avenue south of Independence Avenue (Casey Tree Foundation Inventory, 2002, 2005, 2006), while the maple is the dominant street tree for Independence Avenue (NPS, 2010b). In the plaza, tree varieties include the Thornless Honeylocust, Southern Magnolia, Star Magnolia, and Littleleaf Linden. Beyond the plaza and street trees, there are five American Hornbeam trees and three concrete planters with junipers in the sunken courtyard.

3.7 VISITOR USE AND EXPERIENCE

The site primarily attracts employees seeking outdoor space for break times and lunch. The DED uses the site several times each year for events because the plaza can accommodate gatherings of the DED employees in the LBJ Building. Community gardeners use the 38 plots of the 0.15-acre community garden area. Visitors also use the existing exercise equipment at the NPS parcel. A large bell, owned by DED, sits in the LBJ Plaza.

Beyond the confines of the site, the adjacent monumental core attracts millions of visitors annually. The National Mall hosts an estimated 25 million visits each year. Special events, such as festivals and demonstrations, can draw hundreds of thousands of people to the National Mall. The adjacent museums attract over ten million people each year. Given its proximity to NASM and NMAI, many people pass by the Memorial site on their way to Metro or other locations.

Pedestrian and Bicycle Circulation

The Eisenhower Memorial site and the surrounding area provide a generally pedestrian-friendly environment, which includes sidewalks, crosswalks, pedestrian signals, proximity of National Mall trails, open park space, museums and other pedestrian attractions. Sidewalks exist along streets of the study area, and crosswalks have pedestrian signals except at the mid-block intersection of Maryland Avenue and Independence Avenue.

The 2010 transportation study analyzed pedestrian counts taken at the site during peak periods (AECOM, 2010). Peak periods for this purpose are defined as

- Weekday morning (7:00 to 9:00 a.m.)
- Weekday mid-day (12:00 to 2:00 p.m.)
- Weekday evening (4:00 to 6:00 p.m.)
- Weekend peak hour (Saturday 12:00 to 2:00 p.m.)

The analysis included the following intersections:

- Independence Avenue with 4th Street
- Independence Avenue with Maryland Avenue
- Independence Avenue with 6th Street
- Maryland Avenue with 6th Street

The analysis indicated that a total of 1,138 people were counted in the morning, 1,468 were counted midday, 2,922 were counted in the afternoon, and 4,154 were counted on Saturday. These values are well below the maximum capacity of the facilities. During large permitted events with high levels of attendance, a higher volume of pedestrians effectively use these intersections.

The site vicinity contains established bicycle patterns and encourages bicycle use. Madison Drive and Jefferson Drive along the National Mall are designated off-street trails. A signed bike route along 4th Street provides direct bicycle access to the site. There are no bicycle racks at the site. The recently launched Capital BikeShare also serves as an available public transit mode, with a bike station for rentals at 7th and C Streets, at the L'Enfant Plaza Metro station.

3.8 WATER RESOURCES

The Eisenhower Memorial site is located within the Potomac River drainage basin, a sub-basin of the Chesapeake Bay Watershed. The site drains towards the Tidal Basin and the Washington Channel. No permanent bodies of surface water are located on or near the site. The closest surface water bodies to the site, the Tidal Basin and the Washington Channel, lie within one mile of the Memorial and drain to the Potomac River (approximately 0.7 miles to the southwest).

Of the 4-acre site, approximately 3.3 acres (79 percent) of the site is made up of impervious surfaces, such as structures, streets, walkways, and parking areas. The permeable surfaces of the area are a combination of vegetated areas on the NPS parcel and the grassy areas of the Maryland Avenue ROW. Stormwater at the site infiltrates into the soil not covered by impervious surfaces at varying rates. Once saturated, these surfaces may behave as impervious surfaces. As a result, temporary puddles may occur. Stormwater runoff drains down slope, and requires stormwater collection systems to manage the runoff.

Currently, there are no stormwater retention facilities on the Memorial site. Stormwater is collected through five stormwater drains along the curbside of the roadways within and adjacent to the site, and discharged either to the District's combined storm and sanitary sewer system, or directly to the Potomac River. Some site runoff within the plaza is first captured by trench drains, which are then connected to the piped storm drain system. Stormwater from the site is directed either to the west into a 5 foot 8 inch diameter culvert along 6th Street, or to a 24-inch pipe culvert crossing 4th Street, near the intersection with Independence Avenue. The area in front of the LBJ Building is picked up by trench drains that connect

to a 15-inch pipe along Maryland Avenue that connects to the 24-inch pipe culvert at the intersection with 4th Street.

The District's combined sewer interceptor lines lead to the Blue Plains Treatment Facility where combined stormwater and sewage are treated to standards in accordance with the Facility's National Pollutant Discharge Elimination System (NPDES) permit prior to release as treated effluent to the Potomac River. In general, pollutants from roadways, such as fuel, oil, antifreeze, grease from moving and parked vehicles, sediment from disturbed or exposed soil, and solid wastes collected in catch basins or storm drains, can contaminate stormwater runoff. Therefore, contaminated stormwater can adversely affect the treatment process at the Blue Plains Facility.