4.0 J. Edgar Hoover (JEH) Parcel

Chapter 4 describes the existing conditions of the affected environment and identifies the environmental consequences associated with the exchange and future redevelopment of the JEH parcel. A detailed description of the methodologies employed to evaluate impacts for each resource and the relevant regulatory framework is given in chapter 3, *Methodology*.

GSA intends to exchange the JEH parcel to partially fund the consolidation of the FBI HQ at a new site. Because the exchange is considered part of the Proposed Action, GSA must assess the indirect effects of its action to exchange the JEH parcel even though the exchange would occur later in time (40 Code of Federal Regulations [CFR] 1508.8). To do this GSA has developed two Reasonably Foreseeable Development Scenarios (RFDSs), which are essentially "what-if" development scenarios for future private redevelopment of the JEH parcel. They are GSA's estimate of what could be reasonably developed by a private developer on the parcel in the foreseeable future. The RFDSs are not GSA's suggestions or proposals for future use or design of the JEH parcel and have been developed in this Environmental Impact Statement (EIS) for environmental impact analysis purposes only. GSA has no decision on the future redevelopment of the site.

RFDS 1 assumes an adaptive reuse of the current JEH building, while RFDS 2 assumes the demolition of the JEH building and redevelopment of the parcel to maximize development capacity while adhering to applicable land use controls and applying recent urban development trends. See section 2.4.4 for a more detailed descriptions of each RFDS.

The existing JEH building

Figure 4-1: J. Edgar Hoover (JEH) Parcel Overview

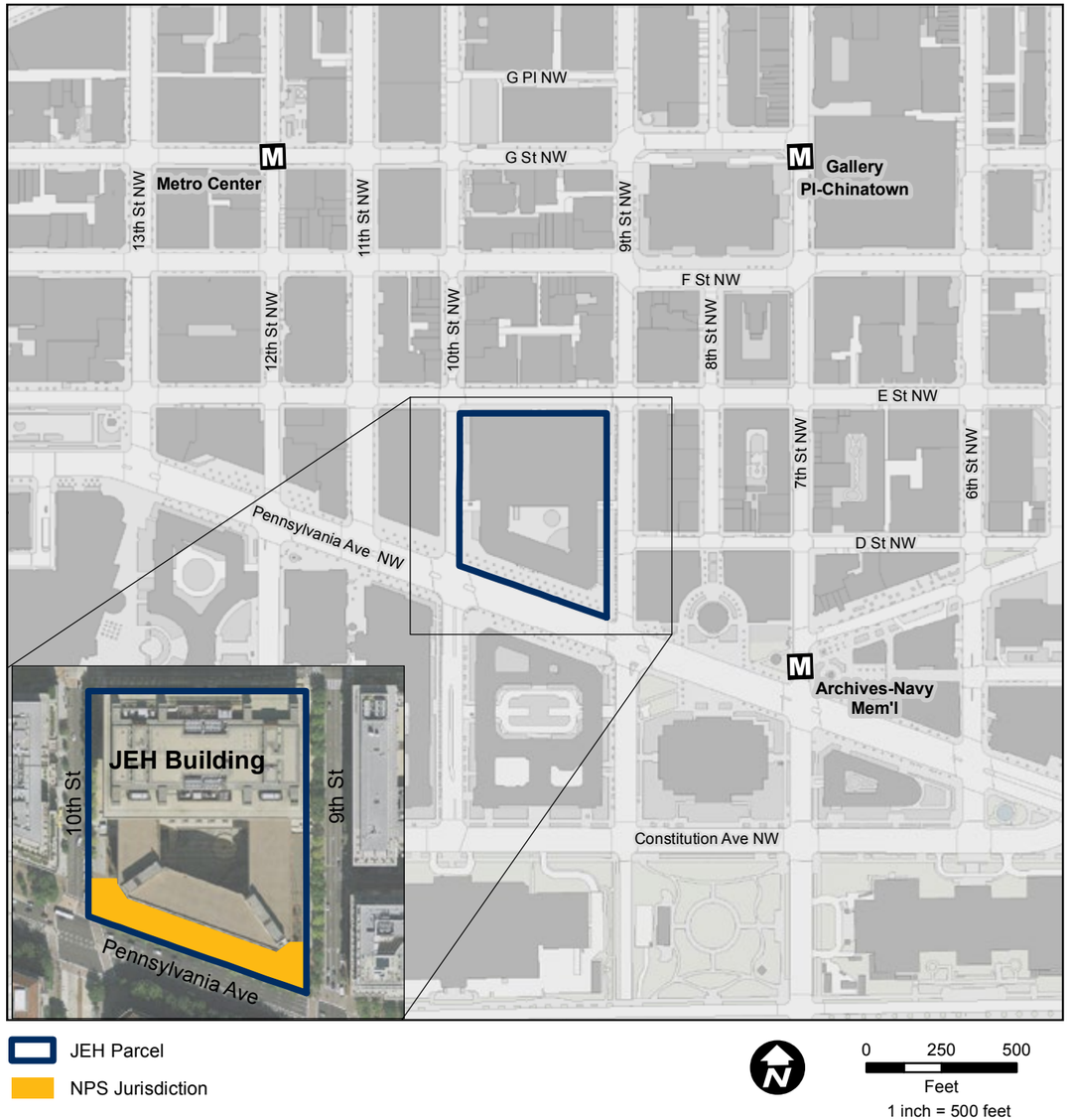
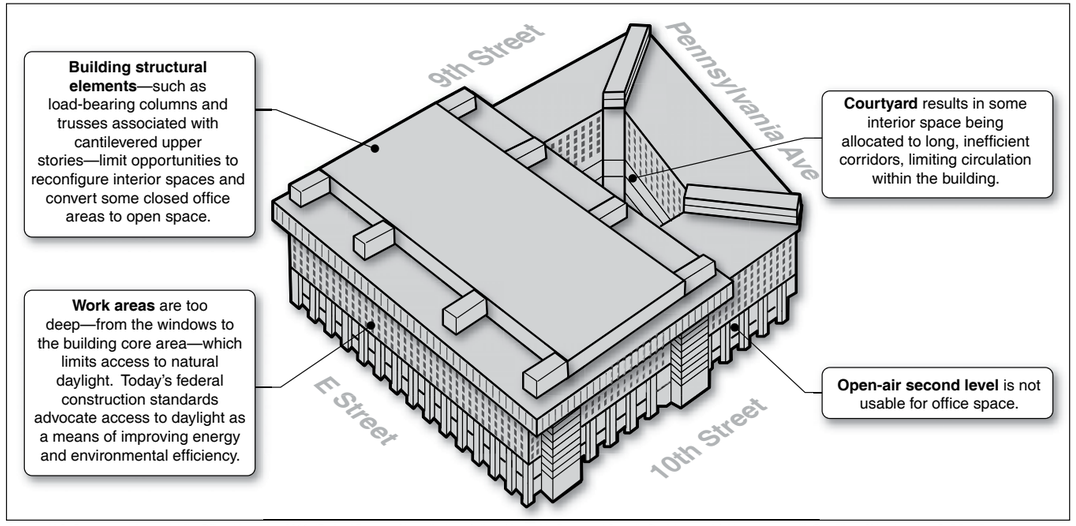


Figure 4-2: Design Features that Limit the JEH Building's Efficiency



Source: U.S. Government Accountability Office. November 2011. "Federal Bureau of Investigation, Actions Needed to Document Security Decisions and Address Issues with Condition of Headquarters Buildings"

EFFICIENCY RATIO

The ratio of usable area (area inhabited/used) to rentable area (area available for use) on a property.

BRUTALIST ARCHITECTURE

A modern architectural style popularized between the 1950s and 1970s. It is characterized by its simple aesthetic theme and use of reinforced concrete to create bulky, modular structures.

View of JEH from National Archives Building along Pennsylvania Avenue NW

The approximately 6-acre JEH parcel contains a 2.8 million square foot (SF) building, which occupies an entire city block in Washington, D.C's Ward 2, bounded by 9th Street NW to the east, 10th Street NW to the west, E Street NW to the north, and Pennsylvania Avenue NW to the south (figure 4-1). The National Park Service (NPS) has jurisdiction of the sidewalk, extending from the face of the JEH building tot he curb, approximately 0.75 acres. If GSA seeks a transfer of jurisdiction from NPS to GSA for all or a portion of the property under NPS jurisdiction, NPS will need to agree to pursue the transfer of jurisdiction prior to the completion of the NEPA. Any NPS land transfer to GSA would be carried out in accordance with 40 USC, Sec. 8124, whereby the GSA would present the proposed transfer and all accompanying compliance documents to the NCPC for its recommendation, consistent with jurisdictional transfers among federal agencies. NPS has been consulted about the potential transfer of its jurisdiction during the preparation of the Draft EIS.

The building is a concrete structure constructed in the brutalist architectural style with an internal courtyard occupying a portion of the southern one-third of the parcel. The JEH building reaches 7 stories high (approximately 110 feet in height) on the Pennsylvania Avenue side and 11 stories high (approximately168 feet in height) on the E Street side. While no substantial changes to the building's structure have occurred since its completion in 1974, the FBI has implemented a variety of internal and external renovations to address security concerns, deteriorating building conditions, and space limitations (GAO 2011). Notwithstanding these improvements, the inefficiency of the original design limits the JEH building's efficiency ratio to 53 percent; 22 percent lower than GSA's efficiency target for new Federal office buildings, as shown in figure 4-2.

Currently, there is no through access for pedestrians, bicyclists, or vehicles across the parcel, and the building is not open to the public. Employee vehicles enter and exit the underground parking garage along both 9th and 10th Streets NW. Along Pennsylvania Avenue, the parcel contains a broad brick sidewalk, lined with street trees, planters, benches, and lighting fixtures which was implemented by the Pennsylvania Avenue Development Corporation (PADC) as part of a unified streetscape plan for Pennsylvania Avenue.

4.1 Affected Environment

The following sections describe the Affected Environment relevant to the JEH parcel and associated study areas for each resource topic evaluated in this EIS.

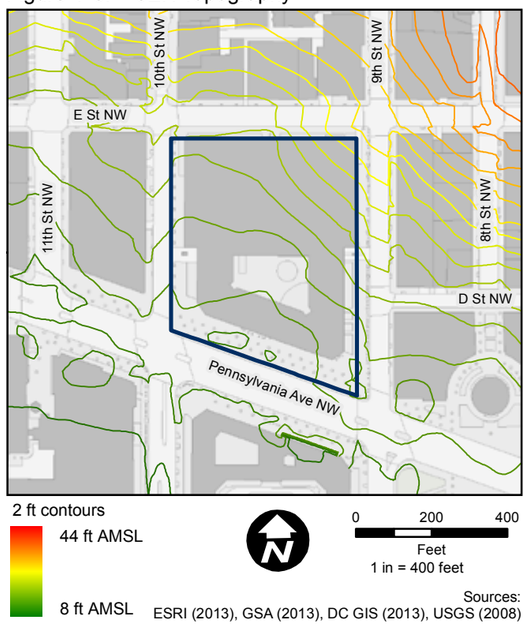
4.1.1 Earth Resources

Earth resources encompass geology, topography, and soils.

4.1.1.1 Geology and Topography

The parcel consists of approximately 6 acres of fully developed urban land in Northwest Washington, D.C. The topography of the parcel is characterized by a gentle slope of about 2.3 percent toward the southwest. As shown in figure 4-3, the highest elevation is located on the northeast side of the parcel at approximately 28 feet above mean sea level (AMSL), and the lowest point is on the southwest side of the parcel at 16 feet AMSL.

Figure 4-3: JEH Topography



AMSL

Above mean sea level (AMSL) is the average level for the surface of one or more of Earth's oceans from which heights such as elevations may be measured.

The existing JEH building at night

Entrance to the JEH building

JEH EARTH RESOURCES AFFECTED ENVIRONMENT OVERVIEW

- Parcel topography gently slopes about 2.3% towards the southwest
- Surface physiography consists of artificial fill underlain by weathered deposits of gravel, sand, silt, and clay from the late Pleistoscene era
- Soil is classified as Urban land; site survey investigation is required to determine the erosion, drainage, and building potential characteristics of the soil

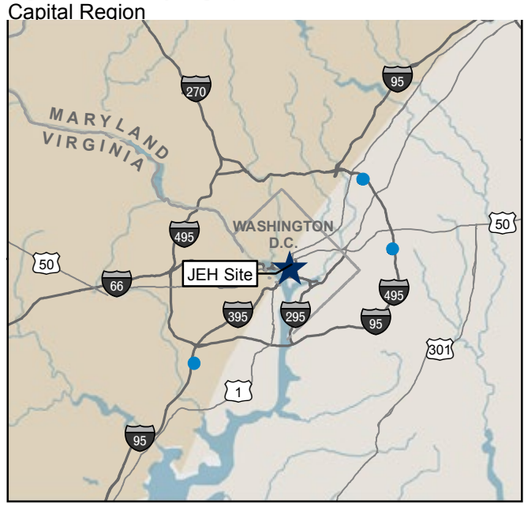
FALL LINE

The geomorrphologic break between an upland region of relatively hard crystalline basement rock and a coastal plan of softer sedimentary rock.

PHYSIOGRAPHIC PROVIDENCE

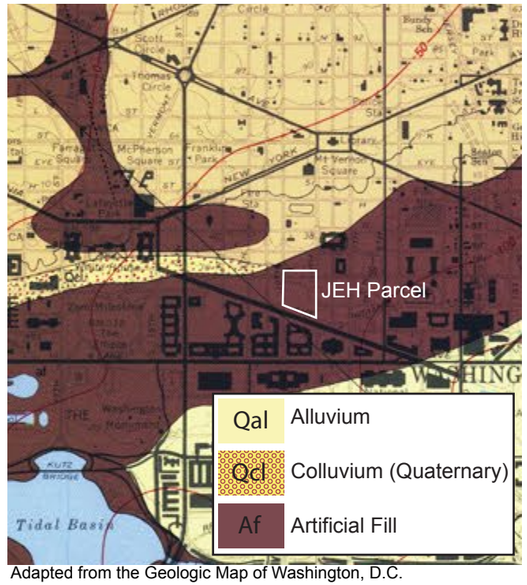
A geographic region with a characteristic geomorphology and often specific subsurface rock type or strucutral elements.

Figure 4-4: Physiographic Provinces of the National Capital Region



Sources: ESRI (2013), GSA (2013), DC GIS (2013)

Figure 4-5: JEH Geology Overview Map



Adapted from the Geologic Map of Washington, D.C.

The JEH parcel is located on the western edge of the embayed section of the Coastal Plain physiographic province and approximately 0.5 mile to the east of the Fall Line, which separates the Coastal Plain province from the Piedmont province (Froelich and Hack 1975), as shown in figure 4-4. The coastal plain is characterized by gently rolling hills and valleys and underlain by a southeastwardly thickening sequence of sediments that consists of sand and gravel aquifers interlayered with silt and clay and confining units. The sediments of the Coastal Plain dip eastward at a low angle, generally less than one degree, and range in age from Triassic (250 to 200 million years ago [Mya]) to Quaternary (2.6 Mya to present). Mineral resources of the Coastal Plain are chiefly sand and gravel and are used as aggregate materials by the construction industry (MGS 2014). According to the geologic map of the Washington West quadrangle, as shown in figure 4-5, the surficial geology of the JEH parcel consists of artificial fill characterized by a heterogeneous composition of materials (Fleming et al. 1994). The fill was brought in for building purposes and consists of locally derived unconsolidated material (Froelich 1975). Fill deposits vary in thickness from less than 1 foot to 25 feet or greater (Matheson et al. 1994). Surficial fill is underlain by weathered deposits of gravel, sand, silt, and clay from the late Pleistocene era at a thickness of approximately 40 to 80 feet (Fleming et al. 1994; Southworth and Denenny 2006).

4.1.1.2 Soils

The parcel consists entirely of impervious surfaces with the exception of planters and tree wells around the perimeter of the building, and planters, permeable pavers, and artificial turf within the courtyard. According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) web soil survey, the JEH parcel and its vicinity is identified as Urban Land, which is characterized as land mostly covered by pavement, buildings, and other structures common to urban areas such that the original characteristics are no longer present (USDA 2015a). This soil type requires on-site survey investigation of erosion, drainage, and building potential characteristics of the soil.

4.1.2 Water Resources

The following sections describe the affected environment for water resources relevant to the JEH parcel. Water resources encompass surface water, groundwater, hydrology, wetlands, and floodplains.

4.1.2.1 Surface Water

The JEH parcel is located within the Pimmit Run-Potomac River subwatershed in the larger Chesapeake Bay watershed, and it does not contain any surface water features. Stormwater drains into a combined sewer system that is conveyed to the Blue Plains Advanced Wastewater Treatment Plant on the Potomac River. The Tidal Basin, Washington Channel, and Potomac River are about 1 mile to the south, and the Anacostia River is about 2.25 miles to the southeast. The reach of the Potomac River closest to the JEH parcel is tidally influenced.

According to Washington, D.C., Water Quality Standards for Surface Water (Title 21 of the District of Columbia Municipal Regulations [DCR], Chapter 11), the current designated uses of the Potomac River and Anacostia River are secondary contact recreation and aesthetic enjoyment; protection and propagation of fish, shellfish, and wildlife; protection of human health related to consumption of fish and shellfish; and navigation. Both rivers have water quality impairments. The Potomac River impairments include nitrogen, phosphorus, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and turbidity (USEPA 2012a). The Anacostia River was designated as impaired due to metals (i.e., arsenic, copper, lead, and zinc), biological oxygen demand, fecal coliform, pesticides, trash, nitrogen and phosphorus, oil and grease, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, and turbidity (USEPA 2012b).

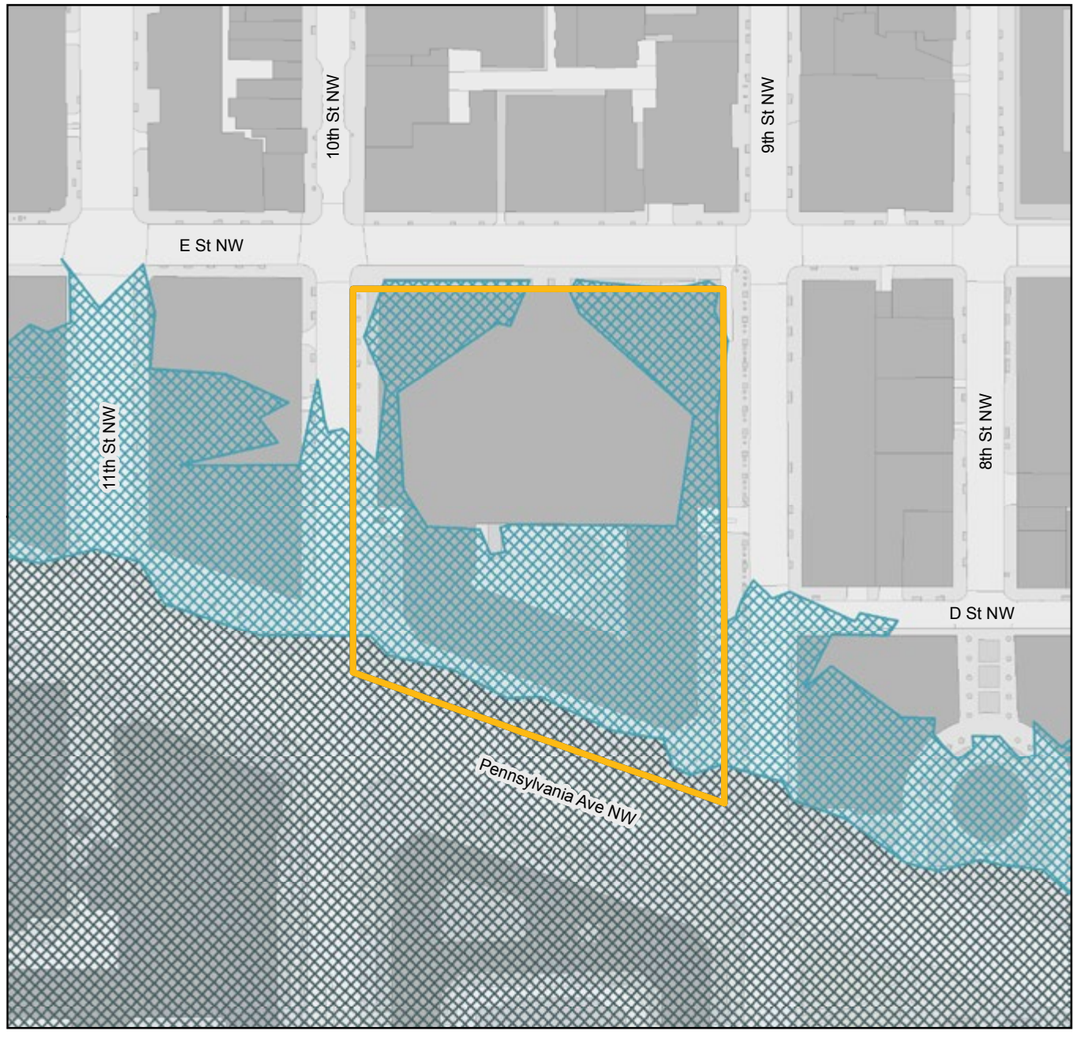
4.1.2.2 Hydrology

Because the JEH parcel is entirely covered by impervious surfaces, with the exception of planters and tree wells around the perimeter of the building, the hydrology of the parcel is composed of stormwater runoff rather than natural surface waters. The conveyance and treatment of stormwater for the JEH parcel are discussed in detail in section 4.1.12.6.

4.1.2.3 Groundwater

Groundwater conditions differ depending on local topography, geologic characteristics, location, season, precipitation, and groundwater-affecting activities (USGS 2010). In the vicinity of the JEH parcel, groundwater is generally contained within semi-consolidated sand or gravel aquifers of the North Atlantic Coastal Plain aquifer system (USGS 2003). The surficial aquifer, with a depth to water of 8 to 50 feet, consists of either alluvium and artificial fill or river terrace deposits (Schneider et al. 1993). In the larger aquifer system, groundwater generally flows down gradient towards the east. On a local scale, groundwater in the study area is disrupted by underground infrastructure such as subway tunnels and utility pipelines. Recharge of the surficial aquifer is typically through infiltration of precipitation and anthropogenic activities including installation of impervious surfaces. Construction-related dewatering can alter the natural recharge and discharge locations of the aquifer. Groundwater in Washington, D.C., is not used for potable water supply; however, the beneficial uses of groundwater (including, but not limited to, surface water recharge, drinking water in other jurisdictions, and potential drinking water source in the future) are protected by water quality standards for groundwater, as defined in 21 DCR §§1150–1158.

Figure 4-6: JEH Parcel Water Resources



Sources:
ESRI (2013), GSA (2013), FEMA (2013), NHD (2013)
DC GIS (2013)

JEH WATER RESOURCES AFFECTED ENVIRONMENT OVERVIEW

- Hydrology characterized by stormwater flow rather than natural surface waters.
- 0.5 acre of 1 percent annual chance floodplain located within the parcel boundary along Pennsylvania Avenue,
- 4 additional acres within the parcel are designated as areas of 0.2 percent annual chance flood.

17th Street Levee. Image obtained from https:||img.washingtonpost.com|rf|image_480w|2010-2019|WashingtonPost|2013|05|17|Local|Graphics|w-levee17_promo.jpg?uuid=IRT_0r6GEeKbCRY4rMOULg

FLOODPLAIN DEFINITIONS

100-year flood: A flood event that has a 1 percent probability of occurring in any given year.

500-year flood: A flood event that has a 0.2 percent probability of occurring in any given year.

4.1.2.4 Wetlands

Review of the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) showed that the urbanized environment of the JEH parcel does not contain any wetlands (USFWS 2010).

4.1.2.5 Floodplains

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) data for Washington, D.C., the JEH parcel contains 0.5 acre of floodplains along Pennsylvania Avenue, as shown in figure 4-6 (FEMA 2010a). This portion of the parcel is currently sidewalk, classified as flood zone A. This zone is described as “areas subject to inundation by the 1-percent-annual-chance flood event,” and is also commonly referred to as the 100-year floodplain. There are no published base flood elevations for this floodplain (FEMA 2014a). Approximately 4 additional acres within the parcel are designated as flood zone X or “areas of 0.2 percent annual chance flood,” which indicates a minimal risk of flooding (FEMA 2014a), and is commonly referred to as the 500-year floodplain. The existing floodplain could be revised based on the completion in 2014 of the 17th Street Levee in addition to other flood protection projects in Washington, D.C., which could result in the removal of the JEH parcel from the floodplain (NCPC 2010).

According to the National Oceanic and Atmospheric Administration (NOAA) Sea, Lake, and Overland Surges from Hurricanes model, the JEH parcel is at risk of storm surge impacts, such as tidal flooding, from Category 3 and 4 hurricanes (USACE 2009; USEPA 2015d). The potential storm surge at the JEH parcel ranges from more than 6 feet to more than 9 feet above ground level during Category 3 and 4 hurricanes.

4.1.3 Biological Resources

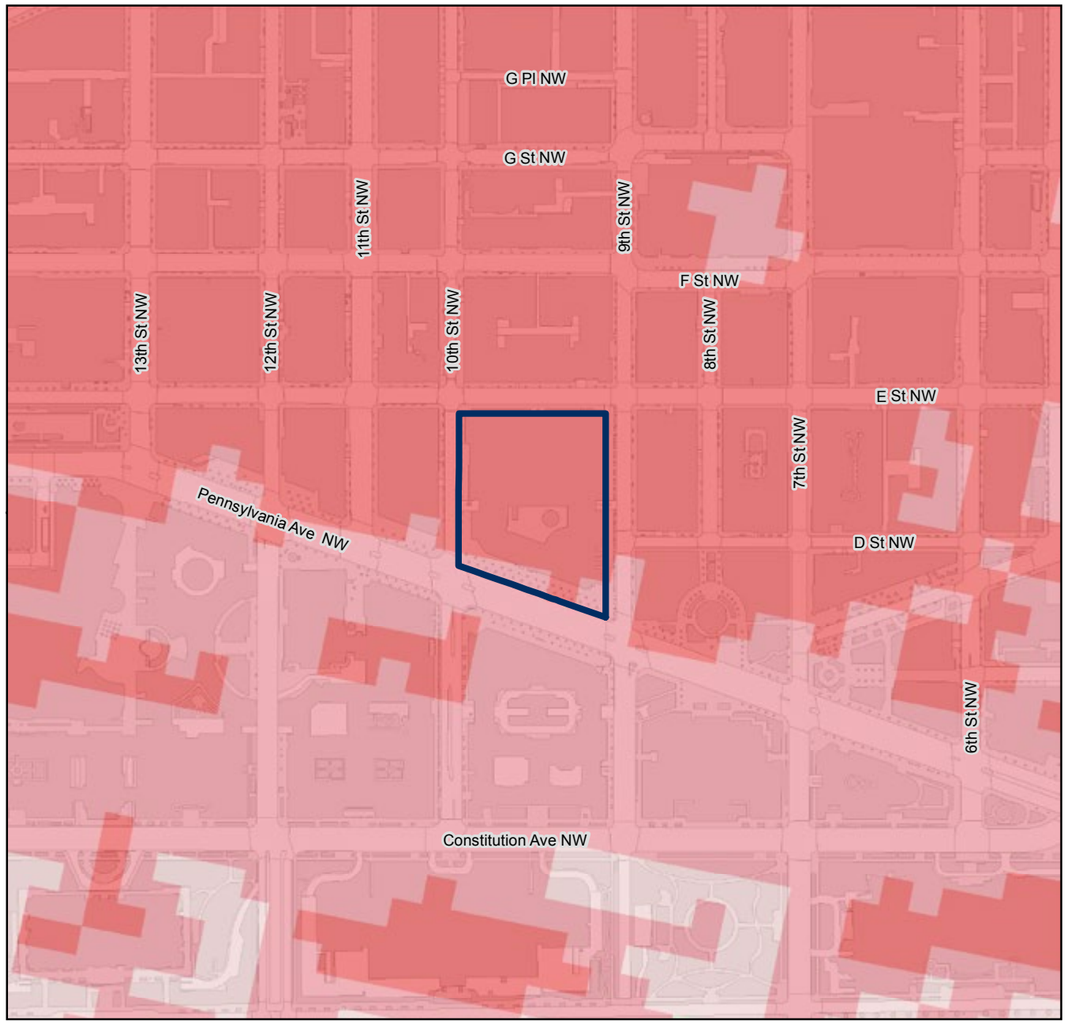
Biological resources include vegetation, aquatic plant and animal species, terrestrial plant and animal species, and special status species.

4.1.3.1 Vegetation

The JEH parcel is currently fully developed with minimal vegetation, although there are street trees and other ornamental vegetation in planter boxes along the sidewalks around the building and in the courtyard. As figure 4-7 shows, the mapped National Land Cover Database (NLCD) land cover class for the JEH parcel and its general vicinity is High Intensity Developed (USGS 2011). The U.S. Environmental Protection Agency (USEPA) (2001) characterizes this land cover class as highly developed area where people reside or work in high numbers, with impervious surfaces accounting for 80 to 100 percent of the total cover. The existing vegetation on this parcel is composed of deciduous streetscape trees and large planters (Google 2015).

The National Mall is located approximately three blocks south of the parcel, and is characterized by vegetation in the form of lawn grasses where impervious surfaces account for less than 20 percent of total cover.

Figure 4-7: Land Cover Classes for the JEH Parcel



JEH BIOLOGICAL RESOURCES AFFECTED ENVIRONMENT OVERVIEW

- High Intensity Developed LULC within the Chesapeake Rolling Coastal Plain Ecoregion
- Terrestrial animals in the study area would be those adapted to urban environments, including squirrels, raccoons, bats, mice, and rats
- Avian species in the study area could include rock doves (pigeons), sparrow species, starlings, and grackles
- Because trees are within and adjacent to this parcel, species of conservation concern that may occasionally be seen include the broad-winged hawk, red-shouldered hawk, and the eastern red bat

Street trees and large planters exemplify vegetation at the JEH parcel

Raccoon (Procyon lotor). Photo courtesy of Trappro

Pigeons atop Statue. Photo courtesy of APF_Getty

Northern long-eared bat. Photo courtesy of Georgia Forestry Association

4.1.3.2 Aquatic Species

There are no surface water bodies located on the JEH parcel. As a result, there are no on-site aquatic habitats.

4.1.3.3 Terrestrial Species

Wildlife species that are present in any particular location depend on the amount of available habitat and resources. As discussed in section 4.1.3.1, vegetation at the JEH parcel is limited to streetscape trees and large planters. Animals that would be commonly seen in the study area would be those adapted to this type of urban habitat. Common mammals suited to urban settings that may be found in and around the JEH parcel include raccoon (*Procyon lotor*), squirrel (*Sciuridae spp.*), rats (*Rattus spp.*), mice (*Mus spp.*), and various bat species. Given the parcel location within the densely developed downtown area of Washington, D.C., even mammals common to urban areas may be an uncommon occurrence.

Urban environments are known to provide habitat to several avian species. Most of these species show little fear of humans and feed on crumbs left by pedestrians; however, most of their diet consists of local insects (USFWS 2006). Avian species, such as rock doves, commonly known as pigeons (*Columba livia*)—sparrow species, starlings (*Sturnus vulgaris*), and grackles (*Quiscalus quiscula*) are a common sight around Washington, D.C., and are likely to occur within and around the JEH parcel. Migratory bird species and raptors (hawks and falcons) may fly overhead and occasionally perch in or near the JEH parcel (Smithsonian 2012). Wading and swimming birds, such as herons and ducks are not expected to occur at this location.

Reptiles do not commonly occur in a city landscape; however, there have been occasional sightings in downtown Washington, D.C. The black rat snake (*Elaphe obsoleta*) and the northern brown snake (*Storeria dekayi*) would be the most likely reptiles to occur on or adjacent to the parcel (The Daily Caller 2013).

4.1.3.4 Special Status Species

Special status species are plant or animal species that require special consideration and/or protection. These species would be listed as rare, threatened, or endangered by Federal and/or state governments. State species of greatest conservation concern are also covered under this section and include rare, threatened, and endangered species, as well as species that have a declining population and are considered at risk.

There are seven Federally listed animal species documented for Washington, D.C., based on historic range and population: Hay's spring amphipod (*Stygobromus hayi*), American burying beetle (*Nicrophorus americanus*), eskimo curlew (*Numenius borealis*), eastern puma (*Puma concolor couguar*), dwarf wedgemussel (*Alasmidonta heterodon*), northern long-eared bat (*Myotis septentrionalis*), and gray wolf (*Canis lupus*). The small whorled pogonia (*Isotria medeoloides*) is the only state-listed plant species for Washington, D.C. Based on current ranges, the Hay's spring amphipod and northern long-eared bat are the only animal species that occur within Washington, D.C. (USFWS 2014a). Neither of these species are likely to be present at the JEH parcel due to a lack of adequate habitat (USFWS 2014b).

The northern long-eared bat (*Myotis septentrionalis*) was Federally listed as threatened in May 2015. Consultation with USFWS in December 2014 confirmed that the northern long-eared bat does not occur within or adjacent to the JEH parcel (USFWS 2014a).

Washington, D.C., has 162 animal species of conservation concern, including 11 mammals, 49 birds, 23 reptiles, 16 amphibians, 12 fish, and 51 invertebrates (USFWS 2014a). Of these 162 species, it is unlikely that many of these species are present at the JEH parcel due to the lack of habitat. However, due to the presence of trees within and adjacent to this parcel, species of conservation concern that may occasionally be seen at this site include the broad-winged hawk (*Buteo platypterus*), red-shouldered hawk (*Buteo lineatus*), and the eastern red bat (*Lasiurus borealis*) (DDOE 2006).

4.1.4 Land Use, Planning Studies, and Zoning

The following sections describe the affected environment for land use and zoning at the JEH parcel, highlighting planning studies.

4.1.4.1 Land Use

Land uses within in the vicinity of the JEH parcel are predominantly medium- to high-density residential, office commercial, and retail commercial combined with Federal local public facilities. These uses are interspersed with parks and open spaces. There are a number of culturally important facilities, such as museums and memorials, and other public buildings in the study area, within 1/4 mile from the JEH parcel including:

Arts and Entertainment

- Ford's Theatre
- Landmark E Street Cinema
- Warner Theatre
- Verizon Center
- Sidney Harman Hall
- Zenith Gallery
- Red Aspen Gallery

Civic and Open Space

- Naval Heritage Center
- Freedom Plaza
- U.S. Navy Memorial and Memorial Plaza
- The National Mall

Museums

- International Spy Museum
- Newseum
- Koshland Science Museum
- Museum of Arts and Sciences
- Smithsonian American Art Museum
- National Portrait Gallery
- National Museum of Natural History
- National Museum of American History
- National Gallery of Art

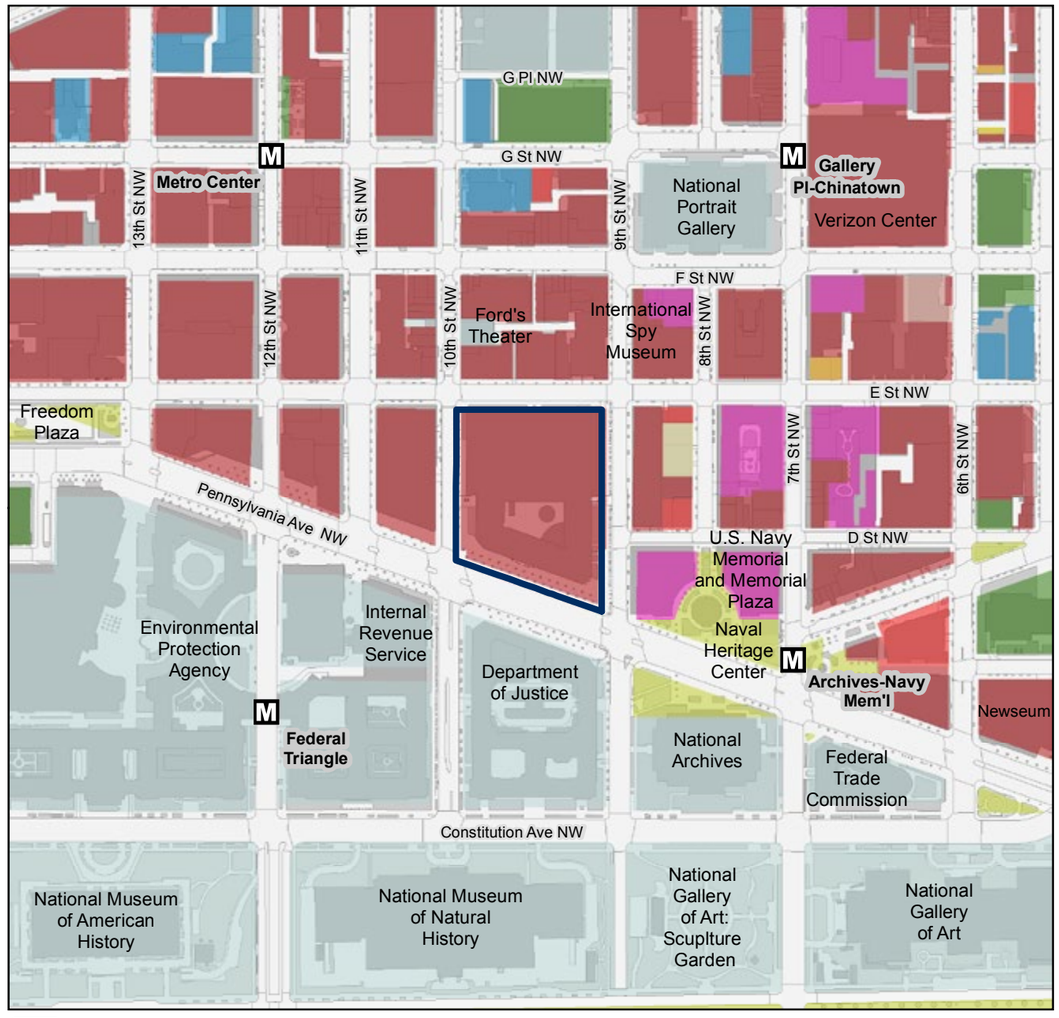
Each of these institutions offers exhibit space, lectures, and other services and activities open to the public.

Several Federal facilities are located in the study area, including:

- Department of Justice
- Internal Revenue Service
- U.S. Environmental Protection Agency
- National Archives
- Federal Trade Commission

Figure 4-8 illustrates the existing land use within 0.25-mile radius of the JEH parcel.

Figure 4-8: JEH Parcel Land Use Map



Note: The JEH parcel is categorized as commercial use in Washington, D.C's land use GIS data, however it is a Federal use with no public access.

FLOOR AREA RATIO (FAR)

Floor-to-Area Ratio (FAR) is the total square feet of a building divided by the total square feet of the lot on which the building is located. Higher FARs indicate a higher density of development.

JEH LAND USE AFFECTED ENVIRONMENT OVERVIEW

- Land uses in the study area are predominantly medium- to high-density Federal, local public, mixed use, and commercial
- The parcel is currently zoned C-4 and within the Downtown Development Overlay district; proposed zoning for the site is D-7
- Land use plans and studies that guide development for the JEH parcel and its environs include: The Comprehensive Plan for the National Capital, The Pennsylvania Avenue Plan, The Pennsylvania Avenue Initiative, The Streetcar Land Use Study, and Extending the Legacy: Planning America's Capital for the 21st Century

4.1.4.2 Zoning

Zoning regulations are legal requirements controlling the height, bulk, number of stories, size of buildings, open spaces around them, and density and uses of buildings (D.C. Office of Zoning 2014b). The current JEH is a Federal facility so zoning does not currently apply. However, the parcel is currently designated C-4 (Central Business District) and in the Downtown Development Overlay district. Currently, Washington, D.C., government is in the process of updating its zoning regulations. This process started in 2007 and is likely to be completed by 2016. Given the potential future transfer of this parcel from Federal to private ownership and Washington, D.C's, ongoing rezoning process, the JEH parcel is proposed for the D-7 zone. This new D-7 zoning designation would permit the highest density commercial development that is achievable under the Height Act, through a Planned Unit Development process. In conjunction with sub-area regulations, D-7 reinforces Pennsylvania Avenue's unique role as a physical and symbolic link between the White House and the U.S. Capitol. Additionally, the regulations for the Pennsylvania Avenue Sub-Area promote concentrations of retail to reinforce the area's historic role as a center of retail commerce. A building or other structure with frontage on Pennsylvania Avenue may be 160 feet tall, as measured from the Pennsylvania Avenue curb at the middle of the front of the building to high point of the roof or parapet, providing that the portion of the building that exceeds 135 feet in height shall be set back a minimum of 50 feet from the building line along Pennsylvania Avenue.

The Floor-to-Area Ratio (FAR) and building height are two important development parameters that contribute to the development of the site. According to the proposed D-7 zoning, the maximum FAR of this parcel is not to exceed 8.5 without preferred uses/credits and not to exceed 10.0 with preferred uses/credits (D.C. Office of Zoning 2014c). To help ensure the provision of the range of uses essential a successful downtown, the following preferred uses generate credits that allow an increase in density: residential, art, full rehabilitation of historic structures, conversion of unused transferable development rights or combined lot development gross floor area, child care centers, and local small and disadvantaged business enterprises. The D-7 zone is not subject to inclusionary zoning (a zoning tool used to increase affordable housing opportunities in the city in exchange for additional density). The JEH building is located within the Pennsylvania Avenue Sub Area, as designated by the DC Office of Zoning. The DC Office of Zoning states that Pennsylvania Avenue should be maintained as a "mixed use monumental street with additional height to emphasize its role in physically linking the executive and legislative branches of the Federal government." (D.C. Office of Zoning 2014c).

The D-7 zoning category also describes other more specific land use, setback, and design review standards that would apply to the JEH parcel once the new zoning is finalized.

In addition to the proposed D-7 zoning, future development of the JEH parcel would be governed by the Height of Buildings Act of 1910, as amended in 2014. This act governs the height of buildings within Washington, D.C., restricting heights to 130 feet or less, depending on the width of the right-of-way of the street the building faces. The exception to this rule, applicable to the JEH parcel, is that buildings with principal entrances on Pennsylvania Avenue between 1st and 15th Streets NW may be up to 160 feet tall.

4.1.4.3 Regional and Local Land Use Studies

This section describes the regional land use and planning studies that form the framework for understanding the jurisdiction's vision and plans for the JEH parcel and its environs.

The Comprehensive Plan for the National Capital

The Comprehensive Plan for the National Capital, hereafter referred to as the Comprehensive Plan, is a document meant to guide future planning and development. The document is divided into two components: the Federal Elements and the District Elements. The Federal Elements targets planning for Federal facilities in the region, and the District Elements, guides future planning for the non-Federal portions of Washington, D.C. The District Elements are prepared by the Mayor and adopted by the Council of the District of Columbia.

Federal Elements of the Comprehensive Plan for the National Capital

The Federal Elements address matters related to Federal properties and Federal interests in the National Capital Region (NCR).[1] The Federal Elements are prepared pursuant to Section 4(a) of the National Capital Planning Act of 1952. The seven Federal Elements presented in the Comprehensive Plan are (1) Federal workplace, (2) foreign missions and international organizations, (3) transportation, (4) parks and open space, (5) Federal environment, (6) preservation and historic features, and (7) visitors. NCPC develops and administers these Federal Elements and is currently in the process of updating them. A new element on Urban Design is being developed.

The Federal Elements of the Comprehensive Plan for the NCR provide criteria for the location of Federal facilities and policies on Federal employment in the NCR. Subsequent to the exchange of the JEH parcel, the parcel would be under private rather than Federal ownership, and therefore the Federal Elements would not directly apply to the future development of the parcel.

[1] The boundaries of the NCR are given in chapter 1 and chapter 2.

District Elements

The District Elements of the Comprehensive Plan provides policies that guide the future physical development within Washington, D.C., including the private redevelopment of the JEH parcel, via the following three tiers of planning:

(1) The Citywide Elements

The first planning tier of the Comprehensive Plan contains a framework of objectives and policies covering 13 City Wide Elements to help guide public actions and shape private investment in Washington, D.C. (DCOP 2006). The elements, last amended in April 2011, are as follows: (1) framework; (2) land use; (3) transportation; (4) housing; (5) environmental protection; (6) economic development; (7) parks, recreation, and open space; (8) urban design; (9) historic preservation; (10) community services and facilities; (11) educational facilities; (12) infrastructure; and (13) arts and culture. These objectives and policies contribute to Washington, D.C's, overarching goals for the city.

The land use element establishes basic policies and actions guiding the physical form of the city and provides direction on a range of development, conservation, and land use compatibility issues. The main land use focused actions and policies include: promoting mixed-use development, as well as regional and neighborhood-serving retail, hotels, and entertainment uses; providing incentives for non-office uses; encouraging the development of new high-density and low- to moderate-income housing; and promoting active street life, public spaces, and pedestrian-friendly streets.

(2) The Area Elements

In the second planning tier, the Comprehensive Plan outlines the goals and objectives for 10 different neighborhoods that encompass Washington, D.C. The JEH parcel is located within the Central Washington Area Element, which is defined as the heart of Washington, D.C.

Under this tier, there are designated location-specific policies and actions to guide the growth and neighborhood conservation decisions. These policies aim for a mixed-use area with additional office growth, diverse housing developments, retail, and hotel and hospitality services. Other relevant policies include:

- **Policy CW 1.1.11 "Leveraging Public Development Sites and Policy":** designates that publicly owned development sites such as urban renewal sites, Washington Metropolitan Area Transit Authority (WMATA) joint development sites, and the former Washington Convention Center site should implement key objectives and policies of the Central Washington Area Element. The plan further explains that these sites should be viewed as a portfolio of assets that must be strategically managed to meet Washington, D.C's, long-term needs.

- **Policy CW 1.1.13 "Creating Active Street Life and Public Spaces":** states future planning should promote active street life throughout Central Washington through the design of buildings, streets, and public spaces. This includes providing streetscape improvements that make downtown streets more comfortable and attractive, and encouraging active ground floor uses.

- **Policy CW 1.1.8 "Promote Central Washington Retail":** aims to promote Central Washington as a regional retail destination with particular interest on sustaining a concentrated regional shopping area at:

  - The F and G Street corridors between 7th and 15th streets NW
  - 7th Street NW in the Gallery Place and Penn Quarter neighborhoods
  - The Old Convention Center site

- **Policy CW 1.1.9 "Neighborhood-Serving Retail in Central Washington":** ensures that Central Washington's retail uses serve not only the regional market, but also the local neighborhood market created by residential development within the area.

(3) The Small Area Plans

The third tier of planning, Small Area Plans, are technically not part of the Comprehensive Plan for the National Capital, as specified in Washington, D.C., municipal code. These plans supplement the Comprehensive Plan by providing detailed guidance for areas ranging from a few city blocks to a whole neighborhood or corridor. There is no Small Area Plan that includes the JEH parcel.

The Pennsylvania Avenue Plan (PAP)

In 1972, Congress created PADC to develop and execute a plan for the area along Pennsylvania Avenue between the U.S. Capitol and the White House (NPS n.d.). PADC's goal was to develop and execute a plan to promote the development and revival of the Avenue and its environs. Congress declared that it is in the national interest that this area "be developed, maintained, and used in a manner suitable to its ceremonial, physical, and historic relationship to the legislative and executive branches of the Federal Government and to the governmental buildings, monuments, memorials, and parks in or adjacent to the area" (40 USC 871 [1996]) (NPS n.d.a.). The corporation was run by a 15-member board of directors, eight of whom represented the private sector. The remaining seven were high-level public officials, including four Cabinet members; the mayor of Washington, D.C.; and the chairman of the City Council. Eight nonvoting members acted as liaisons to various organized arts, architecture, planning, and development interests in the city, and the Secretary of the Interior served as a voting member of the Board of Directors. In 1975, PADC released the Pennsylvania Avenue Plan (PAP), which established a framework for revitalizing the Avenue (NRHP 2007). The 1974 plan's main goals were to improve the aesthetic appearance of Pennsylvania Avenue, eliminate blight, and reinforce the Avenue's unique role as the physical and symbolic link between the White House and the Capitol. The plan is intended to provide for the revitalization of Pennsylvania Avenue as a vital part of downtown Washington, D.C. The following goals and objectives specific to land use are presented in the plan.

Aerial view of Pennsylvania Avenue. JEH building is in the foreground on the left. Photo courtesy of GHT limited

- Bridge together the north and south sides of the Avenue.
- Provide a mix of programming that could represent a pleasant place for residents and visitors alike during all hours of the day, offering comfortable places to stroll, rest, sit, talk, eat, and shop.
- Provide a mixture of commercial and cultural activities along the Avenue that would attract a wide variety of people and stimulate street life.
- Maintain a sense of historic continuity and evolution by preserving buildings representative of different eras and styles.
- Reduce hardships to existing businesses by staging development carefully and by providing effective relocation benefits.

In addition to the PAP, PADC developed square guidelines, which are specific design and development controls that cover the unique conditions of each block. These guidelines guide redevelopment to meet requirements of the landscaping plan, ensure compatible development within each block, and ensure the aesthetic and historic preservation goals for the plan area are met. No square guidelines were developed for the JEH parcel (squares 378 and 379) because the building existed at the time of their conception and was expected to exist indefinitely.

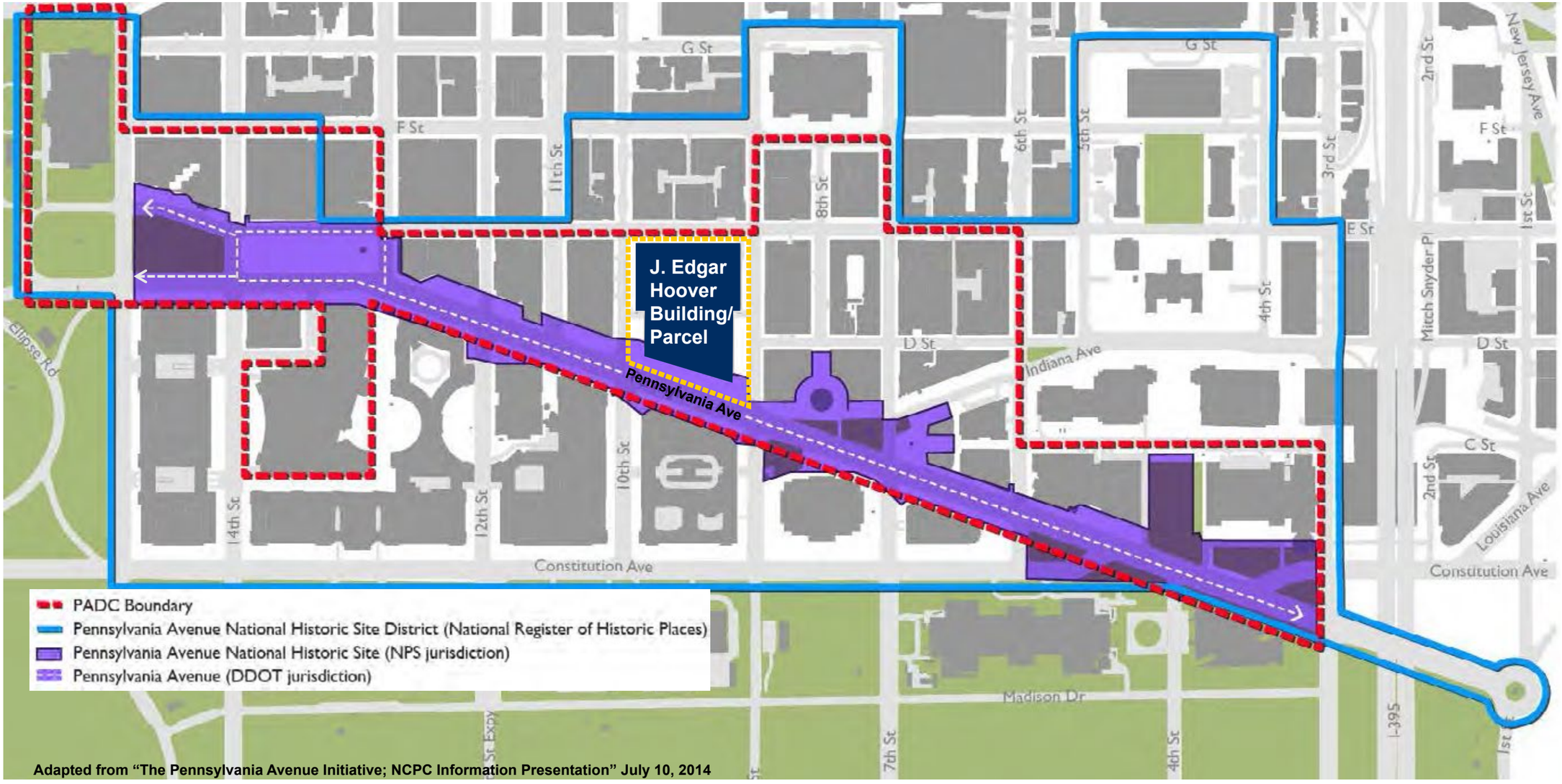
By 1996, the redevelopment plan for Pennsylvania Avenue had been largely implemented. Congress disbanded PADC on April 1, 1996, and its rights, properties, and authorities were assigned by Congress to GSA, NPS, and the National Capital Planning Commission (NCPC). Property holdings were transferred to GSA or NPS. GSA and NCPC became responsible for ensuring that future development conformed to the 1974 Plan (NRHP 2007). In 1996, these successor agencies signed a Memorandum of Agreement (MOA) that further clarified each agency's responsibilities with regards to amending, completing, redeveloping, and ensuring compliance with the PAP.

The PAP does not define requirements for these attributes for the JEH parcel (Squares 378 and 379) as the plan assumes the JEH parcel would remain in Federal ownership indefinitely. In order to minimize and avoid adverse impacts, GSA and NCPC have initiated an update to the PAP to ensure the redevelopment of this parcel would be consistent with the Plan. NCPC is currently in the process of drafting an amendment to the PAP that updates the General Guidelines for squares 378 and 379. GSA would submit the amendment to the Committee on Transportation and Infrastructure and the Committee on Appropriations of the House of Representatives and the Committee on Environment and Public Works and the Committee on Appropriations of the Senate Congressional Committees per Section V of the 1996 MOA. After 60 legislative days, GSA would amend the plan. Subsequent to the plan amendment, NCPC would also develop Square Guidelines for Squares 378 and 379 to guide the design and aesthetics of the redeveloped parcel.

The Pennsylvania Avenue Initiative

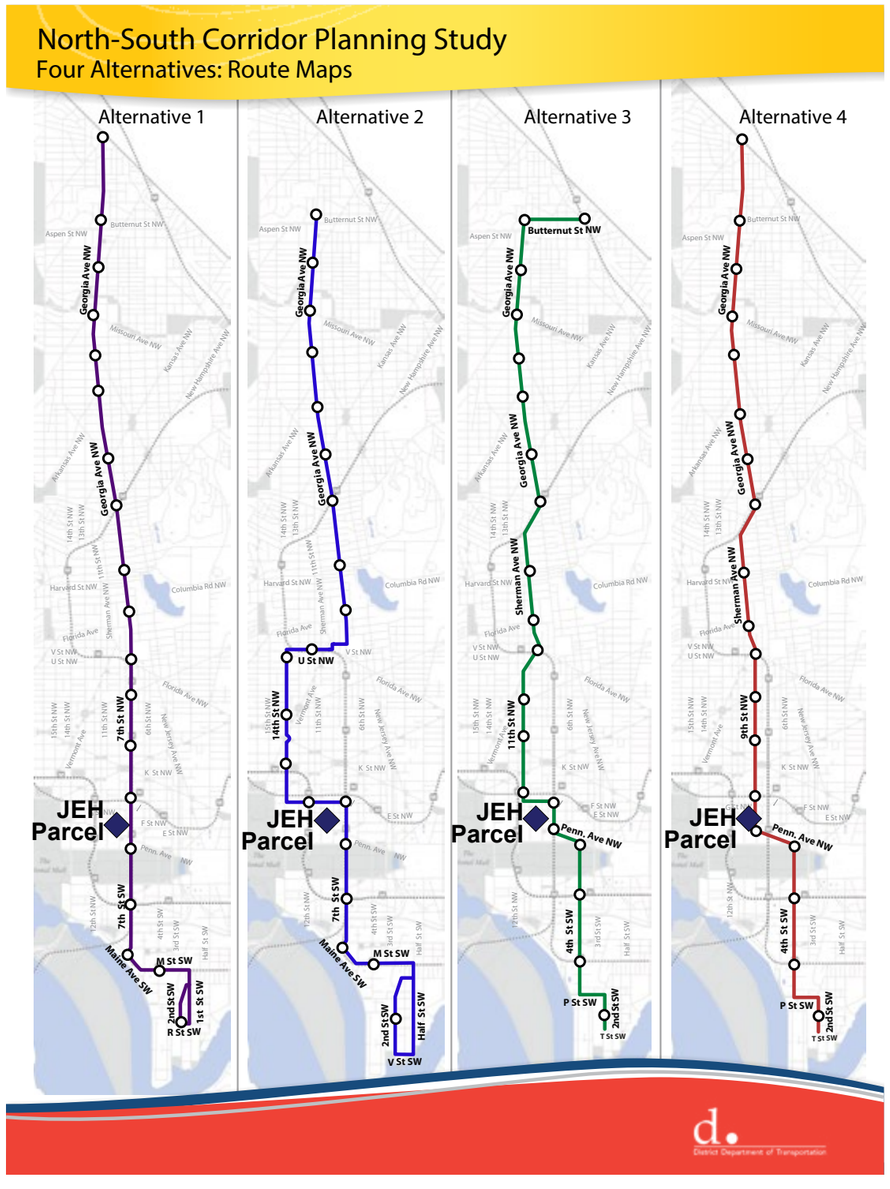
The Pennsylvania Avenue Initiative was launched by the three successor agencies to PADC: NCPC, GSA, and NPS. The initiative aims to study short- and long-term needs of Pennsylvania Avenue and surrounding neighborhoods, identify a governance framework, and develop a vision for the Avenue that can meet local and national needs in the twenty-first century capital city (NCPC 2015). The initiative is studying Pennsylvania Avenue NW and the adjacent areas from the White House to the U.S. Capitol Grounds. The initiative, which started in 2014, will occur over several years. First, the contributing parties will develop a vision, which will be followed by a study of the short-term priorities and actions for the Avenue. Then, the long-term priorities and actions will be addressed. Figure 4-9 illustrates the jurisdictional boundaries of the Pennsylvania Avenue Initiative, and the location of the JEH parcel relative to these boundaries.

Figure 4-9: Pennsylvania Avenue Initiative Jurisdictional Boundaries



Adapted from "The Pennsylvania Avenue Initiative; NCPC Information Presentation" July 10, 2014

Figure 4-10: Washington, D.C. Streetcar North-South Corridor Planning Study: Four Alternatives



Streetcar Land Use Study

Washington, D.C., initiated plans to build a streetcar network based on a long-term assessment of the city's transportation needs. Integrated with Metrorail and other transit services, the 37-mile system would extend transit to large, underserved portions of Washington, D.C., and expand the benefits of transit for many areas already served by Metrorail (DCOP 2012).

There are currently four alternatives for the north-south line currently undergoing environmental review by the District Department of Transportation (DDOT) that are near the JEH parcel (DDOT 2014a). Alternative 1 would have a direct north-to-south alignment down 7th Street NW, passing one to two blocks east of the JEH parcel. Alternative 2 would meander through Washington, D.C., traveling from Georgia Avenue near Howard University, to 14th Street NW, and eventually along 7th Street NW, again passing one to two blocks east of the JEH parcel. Alternative 3 would also pass the JEH building one to two blocks east on 7th Street NW, and then travel along Pennsylvania Avenue. Alternative 4 would travel directly in front of the JEH building along Pennsylvania Avenue. To date, there has not been a preferred alternative identified for this transit corridor development nor is there an implementation or goal in-service date. DDOT would perform the required studies and environmental documentation to support their eventual decision. Figure 4-10 illustrates the four alternatives under consideration.

The area surrounding the JEH parcel is already well connected to a variety of public transit options that connect JEH to other locations throughout the NCR. Implementation of a north-south streetcar connection would complement the existing public transit options and is consistent with other land use plans in the study area.

Extending the Legacy: Planning America's Capital for the 21st Century

Extending the Legacy was prepared by NCPC in 1993 to provide the opportunity to address some of the city's urgent needs including jobs, housing, and transit (NCPC 1993). Developed in collaboration with a team of public- and private-sector architects, urban designers, economists, and transportation planners, and with input provided through public participation, the document builds on the planning traditions of the McMillan Plan and its predecessor the L'Enfant Plan of 1791. The five major themes of Extending the Legacy include (NCPC 1993):

1. Building on the historic L'Enfant and McMillan Plans, which are the foundation of modern Washington.
2. Unifying the city and the Monumental Core, with the Capitol at the center.
3. Using new memorials, museums, and other public buildings to stimulate economic development.
4. Integrating the Potomac and Anacostia Rivers into the city's public life and protecting the Mall and the adjacent historic landscape from future development.
5. Developing a comprehensive, flexible, and convenient transportation system that eliminates barriers and improves movement within the city.

Extending The Legacy plans to enhance 8th Street NW between the National Archives and Mount Vernon Square as the spine of a growing downtown arts and entertainment district. There would be new museums, theatres, and an opera house that would complement that National Portrait Gallery, the National Museum of Art, and the convention center. The plan also recommends incorporating government buildings into mixed-use districts that support a range of public activities, including shopping, dining, and entertainment.

4.1.5 Visual Resources

This section describes the visual resources and aesthetics within the vicinity of the JEH parcel.

There are 7 floors above ground (110 feet) on the Pennsylvania Ave NW side of the JEH building and 11 floors above ground (168 feet) on the E Street NW side. The exterior is composed of buff-colored concrete with deep-set windows on floors 3 through 11. The FBI building's fortress-like facades are "inaccessible that the building is out of character with the hopes for pedestrian-oriented development of the Avenue" (NPS 2007). Three rows of street trees exist within a broad sidewalk area along Pennsylvania Avenue NW, and one row of street trees exists within more narrow sidewalks along 9th Street NW and 10th Street NW. Large planters also line the sidewalks on all four sides. Street lamps along the sidewalks provide ample light from evening to early morning.

The JEH building is well-integrated into a dense, urban landscape surrounded by streets and buildings on all four sides. Immediately surrounding the JEH building are additional government, residential, and office buildings that are of a similar scale. The parcel itself is located along Pennsylvania Avenue, which is a unique corridor of historical and cultural importance. The visual and aesthetic character of the corridor has been guided by the planning and design principles found in the PAP, described in section 4.1.4.2, and the historic preservation goals of the Pennsylvania Avenue National Historic Site (NHS), described in section 4.1.7.2, which played a critical role in the beginning of the national historical preservation movement.

The buildings in the JEH study area contribute to the cultural and historical significance of the area. Pennsylvania Avenue, known as America's "Main Street" and "most magnificent" of avenues, is nationally recognized as the location for inaugural parades, state funerals, First Amendment marches, and national celebrations. Monumental architecture, with national ideals inscribed on the facades of Federal buildings, monuments, parks, foundtains, and sculptures help to strengthen the Avenue with civic spaces. Section 4.1.7.2 provides a detailed description of the architectural qualities of the study area.

The JEH parcel exists in an area with unique views. The Capitol Building is clearly visible when looking southeast along Pennsylvania Avenue from the parcel, but the JEH building is not clearly visible from the Capitol. A variety of historically and visual noteworthy buildings and public spaces have views of the JEH building, including Market Square, National Archives, the Department of Justice, Old Post Office building, Evening Star building, and the William Jefferson Clinton Federal Building along Pennsylvania Avenue. Due to the alignment of Pennsylvania Avenue, intervening topography, and the presence of large, mature street trees, the JEH parcel is not within the White House viewshed. Ford's Theater has a direct view of the JEH parcel across E Street NW. Other prominent locations with limited views of JEH along 9th, 10th, and E Streets NW include the Smithsonian National Museum of Natural History and the National Mall.

View of JEH building from archives building, looking northwest

JEH VISUAL RESOURCES AFFECTED ENVIRONMENT OVERVIEW

- The JEH building is well-integrated into a dense urban landscape surrounded by streets and government and office buildings of a similar scale as the JEH building.
- The parcel itself is located along Pennsylvania Avenue, a unique corridor of historical and cultural importance whose visual character has been guided by the Pennsylvania Avenue Plan.
- The U.S. Capitol is clearly visible towards the southwest, while a variety of historically and visual noteworthy buildings have views of the JEH building.

JEH CULTURAL RESOURCES AFFECTED ENVIRONMENT OVERVIEW

- Because the JEH site is a fully developed urban site in a part of the city that is constructed on fill, there is little chance that there are extant archaeological resources.
- Six historic districts and 20 buildings and structures that are individually listed in or eligible for listing in the NRHP are located within the boundaries of the APE, notably the Pennsylvania Avenue NHS.
- GSA completed a Determination of Eligibility for the JEH building and concluded that the building did not meet the eligibility requirements for listing in the NRHP. The DC SHPO concurred with this determination on March 6, 2014.

AREA OF POTENTIAL EFFECT (APE)

A geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties

Table 4-1: Historic Districts and Structures in APE

Map ID	Resource Name	Listing/Eligibility
1	Central National Bank (Apex Building)	NRHP Listed
2	Court of Appeals (U.S. Court of Military Appeals)	NRHP Listed
3	Department of Treasury	NRHP Listed, NHL
4	District Building	NRHP Listed
5	Downtown Historic District	NRHP Listed
6	Federal Triangle Historic District	NRHP Eligible
7	Fifteenth Street Financial Historic District	NRHP Listed
8	Ford's Theater and Petersen House	NRHP Listed
9	General Post Office (General Land Office) (Hotel Monaco)	NRHP Listed
10	Hotel Washington	NRHP Listed
11	Lafayette Square Historic District	NRHP Listed, NHL
12	LeDroit Block	NRHP Listed
13	L'Enfant Plan	NRHP Listed
14	National Archives	NRHP Listed
15	National Bank of Washington	NRHP Listed
16	National Union Building	NRHP Listed
17	National Mall Historic District	NRHP Listed
18	Old City Hall (District of Columbia Court of Appeals)	NRHP Listed, NHL
19	Old Patent Office (National Portrait Gallery)	NRHP Listed, NHL
20	Old Post Office	NRHP Listed, NHL
21	Pension Building (National Building Museum)	NRHP Listed, NHL
22	Pennsylvania Avenue Historic Site Historic District	NRHP Listed
23	United States Courthouse for the District of Columbia	NRHP Listed
24	Temperance Fountain	NRHP Listed
25	Washington Loan and Trust Company	NRHP Listed
26	Willard Hotel	NRHP Listed

4.1.6 Cultural Resources

GSA, in consultation with the Washington, D.C., Historic Preservation Office (DC SHPO) and in accordance with the regulations implementing Section 106 of the National Historic Preservation Act (NHPA), has determined the Area of Potential Effect (APE) of the Proposed Action on historic properties. Its boundaries have been drawn primarily to acknowledge the prominence and the visibility of the JEH parcel along Pennsylvania Avenue and from a variety of prominent nearby locations. The National Mall Historic District was included in the boundaries of the APE to account for potential visual impacts on the National Mall and its historic resources.

4.1.6.1 Archaeological Resources

Because the JEH parcel is a fully developed urban site in a part of the city that is constructed on fill, there is little chance that there are extant archaeological resources. In addition, as a Federal project, the construction of the JEH building initiated in 1967 was subject to requirements of the NHPA, and any archaeological resources on the site would have been excavated and catalogued at that time if they were present. The potential that archaeological resources exist on the site is very low.

4.1.6.2 Historic Resources

Six historic districts and 20 buildings and structures that are individually listed in or eligible for listing in the National Register of Historic Places (NRHP) are located within the boundaries of the APE. Table 4-11 lists the historic districts and structures that were identified within the boundaries of the APE as well as the historic resources in proximity to the JEH parcel. Descriptions of the districts and the individually listed or eligible historic resources within the Pennsylvania Avenue NHS are described in this section.

GSA completed a Determination of Eligibility for the JEH building and concluded that the building did not meet the eligibility requirements for listing in the NRHP. The DC SHPO concurred with this determination on March 6, 2014. Because the parcel did not meet the typical minimum 50-year threshold for NRHP consideration until the year 2025, Criteria Consideration G, Eligibility for Exceptional Importance, was applied. GSA found that the JEH building did not meet any of the following criterion used to determine exceptional importance:

- Criterion A: would GSA determined that the JEH A property must be specifically associated with significant historic trends or events. It must be associated either with a specific event marking an important moment in American history and/or a pattern of events or a historic trend that made a significant contribution to the development of a community, a State, or the nation.

- Criterion B: A property can be significant for its association with the life of a person or persons significant in our past. The person must be individually significant within a historic context, and the property should be associated with the person's productive life, reflecting the time period in which he or she achieved significance.

- Criterion C: A property must meet at least one of the following requirements:

  - Embody distinctive characteristics of a type, period, or method of construction

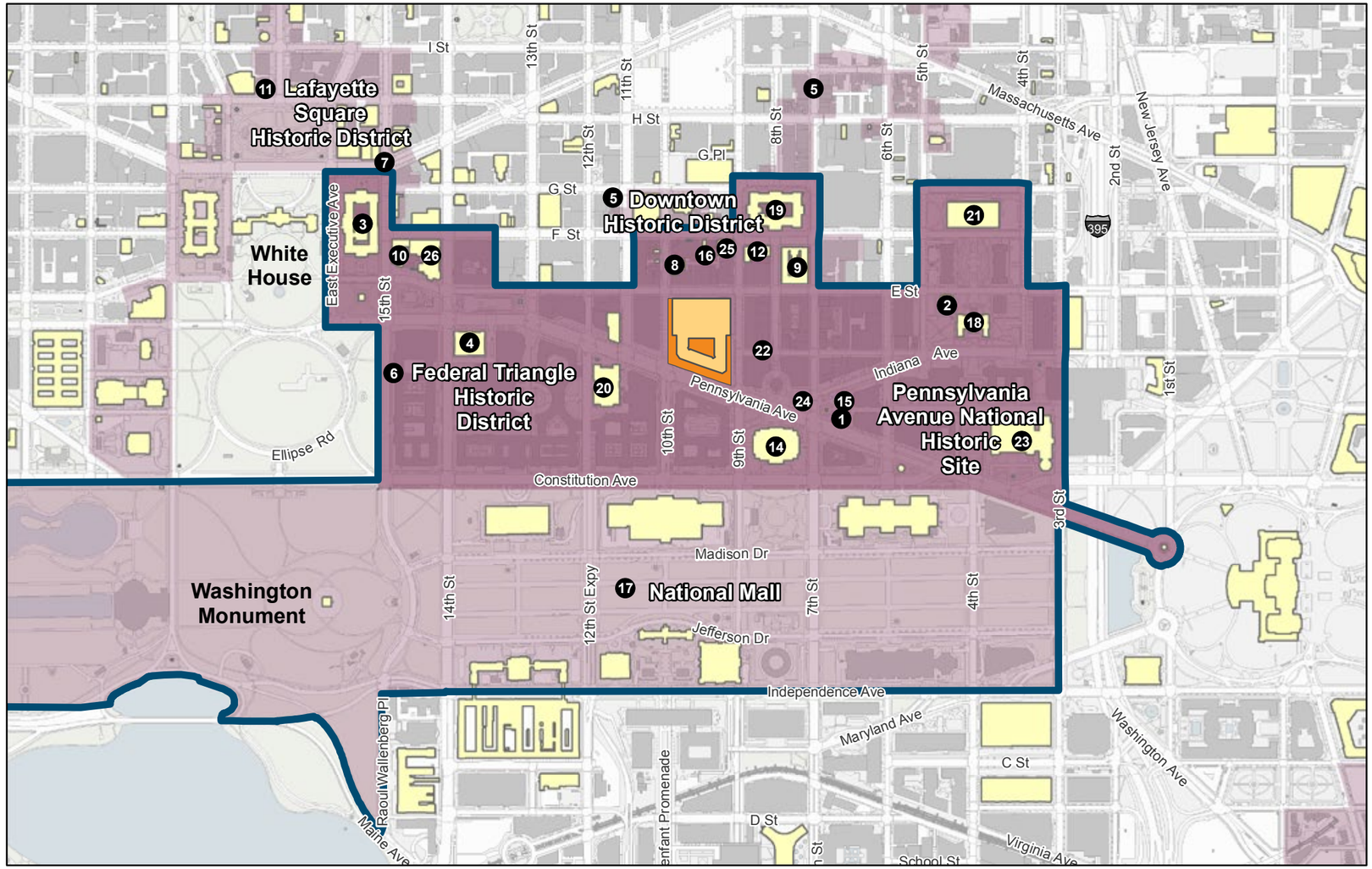
  - Represent the work of a master

  - Possess high artistic value

  - Represent a significant and distinguishable entity whose components may lack individual distinction (i.e., a historic district. This does not apply to the FBI building).

- Criterion D: A property can be significant for its potential to yield information important in history or prehistory. This most commonly applies to archaeological sites.

Figure 4-11: JEH Parcel Historic Resource Map



Existing J. Edgar Hoover Building (Not National Register Eligible)
Existing J. Edgar Hoover Parcel
Draft Area of Potential Effect (APE)
Pennsylvania Ave National Historic Site
National Register Listed or Eligible Properties
National Register Listed Historic District

0 1,000 2,000
Feet
1 inch = 1,000 feet

* L'Enfant Plan (13) is applicable to all streets and Right of Ways within the Area of Potential Effect

Sources:
ESRI (2013), GSA (2013),

View of Pennsylvania Avenue from the Capitol building
©National Park Service

Pennsylvania Avenue National Historic Site (NHS)

For more than two centuries, the section of Pennsylvania Avenue between the Capitol and the White House has played a symbolic role as the physical link between the legislative and executive branch of the U.S. Government. First promulgated by L'Enfant's grand baroque plan for the nation's capital, the importance of Pennsylvania Avenue as the "most magnificent" of the Avenues was strengthened by the monumental architecture built along the Avenue as part of the McMillan Plan of 1901–1902 and the Federal Triangle. Today, civic spaces, public buildings, monuments, parks, fountains, and sculptures, as well as the historically interrelated city infrastructure of commerce, local government, residences, hotels, theaters, and museums comprise Pennsylvania Avenue and its immediate surroundings. The Avenue is known for its role in American history as the site of Presidential inaugural parades, state funeral processions, celebrations of military victories, protests, and marches.

In the 1950s, many businesses and residents began to move to the suburbs, and the buildings along and on the blocks adjacent to the Avenue began to fall into disrepair. President John F. Kennedy noted the poor condition of the Avenue during his inaugural parade on January 20, 1961. A year later, President Kennedy formed the Council on Pennsylvania Avenue to respond to the issues. The council published its first report in April 1964, Pennsylvania Avenue: Report of the President's Council on Pennsylvania Avenue (now often called the 1964 plan or the Green Book).

To provide solutions for the protection and revival of Pennsylvania Avenue, Secretary of the Interior Stewart L. Udall designated the Pennsylvania Avenue NHS on September 30, 1965. The site, located between the Capitol and the White House and including "certain areas adjacent thereto," was described as a "fitting memorial to the great personages of this Nation who have lived and worked in the area" and to the monumental events of national importance which have occurred therein" (Udall 1965). President Johnson signed the Order of Designation on September 30, 1965, and on June 9, 1966, Congress ratified and confirmed the designation, and the site was listed in the newly formed NRHP on October 15, 1966.

The Order of Designation states that the Pennsylvania Avenue NHS possesses national significance for the following reasons (Udall 1965):

- The Avenue symbolizes the majesty and power of the American Republic and the triumphs and tragedies of the American people.
- The Avenue is a ritual thoroughfare for inauguration and funeral processions for the Presidents of the United States as well as a ceremonial space for celebrating national achievements. While there are no bleachers within the parcel, any changes to the building front setback could restrict the number of people that could observe the parade and also restrict pedestrian flows during ceremonial events.
- The Avenue is historically significant as it is where statesmen lodged, dined, debated the issues of the day, and perfected courses of action that guided the Nation's destiny.
- The Avenue is a commercial center of the nation's capital, and contributed to the formation of the Federal Triangle and thereby introduced the monumental architectural scale characteristic of modern Washington.
- The Pennsylvania Avenue district is anchored on each end by historic buildings of transcendent importance to the Nation.

The first building constructed after historic site designation and the issuance of the 1964 Plan was the Presidential building, located at the corner of 12th Street and Pennsylvania Avenue, and completed in 1968. Planning for the JEH building began in 1962, and the site was formally selected in January 1963. Design work was largely complete by 1964 with final approval in 1967; while construction began in 1965 and was completed in 1975. President Gerald Ford dedicated the structure on September 30, 1975. Both buildings conformed to the principles of the 1964 Plan including uniform setbacks and height, arcades, and landscaped plazas. These principles were also included in an update to the plan in 1969, published by the President's Temporary Commission on Pennsylvania Avenue that was established under President Johnson. In fact, the Temporary Commission worked closely with GSA to ensure that the FBI building respected the new ideals for the Avenue. Regardless, after its completion, critics noted that the FBI building's fortress-like facades were so inaccessible that "the building is out of character with the hopes for pedestrian-oriented development of the avenue" (NRHP 2007).

Excluding the Presidential building and the JEH building, major physical changes along the Avenue resulting from President Kennedy's initiative and its historic designation did not emerge until Congress formed PADC in 1972. The PADC and the PAP are described in detail in section 4.1.4.3. The boundaries under the authority of PADC differed from those of the Pennsylvania Avenue NHS. Several areas were excluded, including Federal Triangle, Judiciary Square, the Pension and Patent buildings, Squares 347 and 377 (which house the Ford's Theatre NHS), and the Peace Monument. It also included the east half of Square 254, which is not included in the NHS.

Historic Districts

The following sections describe the historic districts found within the APE.

Federal Triangle Historic District

The Federal Triangle Historic District comprises 75 acres bounded by 15th Street, Constitution Avenue, and Pennsylvania Avenue in Northwest Washington. The majority of the buildings and its overall design were developed between 1928 and 1938 under the auspices of the 1926 Public Buildings Act, which permitted the government to hire private architects for the design of Federal buildings. Secretary of Treasury Andrew Mellon and a distinguished board of architects headed by Edward H. Bennett of the Chicago architectural firm of Bennett, Parsons, and Frost, developed the design guidelines for the site, and each member of the board designed one of the buildings in the complex (Ganschinietz 1973). The district is eligible for listing in the NRHP and is located within the boundaries of the Pennsylvania Avenue NHS Historic District (DC SHPO 2009).

Downtown Historic District

The Downtown Historic District is centered along F Street NW between 11th and 7th streets and between Pennsylvania Avenue and Mount Vernon Square. It contains vernacular buildings displaying a range of popular styles from the nineteenth century that are interspersed with distinct and monumental buildings such as the Old Patent Office Building designed by architects of both local and national importance. The district contains approximately 200 commercial, institutional, and residential buildings with fine examples of Italianate, Romanesque Revival Gothic Revival, Beaux Arts, and Classical Revival architectural styles. The district was listed in the NRHP in 2001 (DC SHPO 2009; Beauchamp 1983).

Lafayette Square Historic District

Located across the Avenue from the White House, this formal park was planned as part of President's Park by Pierre L'Enfant and later authorized by President Thomas Jefferson as a park for area residents and visitors. The park was named for Marquis de Lafayette in 1824 and landscaped by Andrew Jackson Downing in 1851–1852. Lafayette Square comprises a place of national symbolic importance and is a traditional site of public demonstrations. Its framing buildings are distinguished examples of various architectural styles, many by the country's leading architects. The district was listed in the NRHP and designated a National Historic Landmark (NHL) in 1970 (McDermott 1970; DC SHPO 2009).

Fifteenth Street Financial Historic District

The Fifteen Street Historic District is a linear district of monumental Beaux Arts-style commercial buildings stretching from Pennsylvania Avenue NW to I Street NW and anchored by the United States Treasury Building. The district exemplifies the City Beautiful concept of urban planning within the context of the McMillan Commission's early twentieth century transformation of Washington, D.C. The buildings that comprise the district are the work of several renowned architects, including Daniel H. Burnham, Carrere and Hasting, and Jules Henri Sibour, among others. The district was listed in the NRHP in 2006 (Beauchamp and Adams, 1983; DC SHPO 2009).

Lafayette Square, photo courtesy of the DC SHPO. Source: NPS (n.d.b.)

SQUARE GUIDELINES

Specific design and development controls that cover the unique conditions on each block to meet requirements of the landscaping plan, ensure compatible development within each block, and meet aesthetic and historic preservation goals for the plan area.

National Mall.
Source: http:||www.pva.org|site|apps|nlnet|content2.aspx?c=ajIRK9NJLcJ2E&b=6350111&ct=11615021

Central National Bank (Apex Building)
Source: http:||www.streetsofwashington.com|2010|03|mr-mulletts-bank-building-150-years-on.html

National Mall Historic District

The National Mall Historic District is roughly bounded by the Capitol Grounds on the east, Independence Avenue on the south, 14th Street on the west, and Constitution Avenue on the north. Within the historic district are 10 buildings, including the Smithsonian Institution Building (the Castle), the Arts and Industries Building, Museum of Natural History, the National Gallery of Art, and the Freer Gallery. The National Mall is the central axis of the Washington, D.C's monumental core as designed by Pierre L'Enfant in 1791. L'Enfant planned the Mall as the city's "Grand Avenue" that would run west from the Capitol to the White House. A lack of funding prevented development of the National Mall, and throughout the nineteenth century it was largely forgotten. By the turn of the twentieth century, the National Mall contained an assortment of public, private, and commercial structures. It was not until the 1901 McMillan Plan that the idea of the National Mall was revived. The Mall as it is today is a result of several substantial improvement and construction projects occurring throughout the twentieth century (Pfanz 1981).

The National Mall was listed in the NRHP in 1966 (documented in 1981) and is a contributing element of the NRHP-listed L'Enfant Plan of the City of Washington (see following section). The NPS is currently updating the NRHP nomination form, including revising the boundaries, for the National Mall.

Historic Structures

Central National Bank (Apex Building)

Located at the convergence of 7th Street and Pennsylvania Avenue, midway between the White House and the Capitol, the Apex building stands on one of the major open spaces in Pierre L'Enfant's plan for the city of Washington: Market Square. This area served as central retail and market area throughout the nineteenth century and an important business center into the early twentieth century. The Apex building remains within one of the few extant groups of nineteenth-century structures along Pennsylvania Avenue. The building was originally built as a Renaissance Revival-style hotel in 1859-1860 and remodeled in a vernacular Victorian-era style in 1887 by Alfred B. Mullet for use as a bank. The Central National Bank was listed in the NRHP in 1995 and is a contributing element to the Pennsylvania Avenue NHS and Downtown historic districts (Barsoum 1995a; DC SHPO 2009).

Court of Appeals (U.S. Court of Military Appeals)

Located at 450 E Street NW, The Court of Appeals building was erected between 1908 and 1910, and was the first building to expand Washington, D.C. Courts complex in Judiciary Square. With its Neoclassical-style design by Architect of the Capitol Elliott Woods, the limestone building complements the design of adjacent Old City Hall and established the pattern of an architecturally unified group arranged around a central square in the Beaux Arts manner. The building was listed in the NRHP in 1974, is located within a L'Enfant Plan reservation, and contributes to the Pennsylvania Avenue NHS historic district (DC SHPO 2009).

District Building (John A. Wilson Building)

Located at 1350 Pennsylvania Avenue NW, the District building was constructed from 1904-1908 and designed by the Philadelphia firm of Cope and Stewardson. The building is an excellent example of Beaux Arts Classicism and is significant to the cultural heritage of Washington, D.C. The District building was listed in the NRHP in 1964 and is a contributing element of both the Federal Triangle Historic District and the Pennsylvania Avenue NHS Historic District (DC SHPO 2009; Ganschinietz 1971a).

Department of Treasury Building

Erected between 1836 and 1869 along Pennsylvania Avenue, the Greek Revival-style Department of Treasury building (1500 Pennsylvania Avenue NW) is attributed to five prominent American architects: Robert Mills, Thomas U. Walter, Ammi B. Young, Isaiah Rogers, and Alfred B. Mullett. Along with the Patent building, which was constructed concurrently, the Treasury Department building is one of the most outstanding examples of Greek Revival-style civil architecture in the country. It was designated an NHL and listed in the NRHP in 1971 and is a contributing resource of the Fifteenth Street Financial District, Lafayette Square, and Pennsylvania Avenue NHS historic districts (DC SHPO 2009).

Ford's Theater and Petersen House

Ford's Theater, the site of President Abraham Lincoln's assassination on April 14, 1865, was built by Baltimore entrepreneur John T. Ford beginning in 1863. Following Lincoln's assassination, the building was seized by the U.S. Government and converted to a three-story building housing the Army Medical Museum and Surgeon General. In 1931, it was transferred to NPS. The building was restored in 1967 to its 1865 appearance.

The Petersen House (516 10th Street NW), the house where President Lincoln died on April 15, 1865, was built in 1849 by German immigrant and tailor William Petersen. After Petersen's death in 1871, the house was occupied by the District of Columbia Memorial Association beginning in 1893. Following its purchase by Congress in 1896, it housed the Oldroyd collection of Lincolniana and became a tourist attraction. In 1933, it was transferred to NPS. Ford's Theater and the Petersen House were jointly listed in the NRHP in 1966, are part of the Ford's Theater NHS, and are contributing elements to the Pennsylvania Avenue NHS Historic District (DC SHPO 2009).

General Post Office (General Land Office, Hotel Monaco)

The General Post Office, built in two stages from 1839 to 1866, occupies an entire city block bounded by E, F, 7th, and 8th Streets NW. An outstanding example of the neo-classical-style and American civil architecture, the building is the work of Robert Mills and Thomas U. Walter, two of the most noted nineteenth-century American architects. The design of the building, based on a traditional Renaissance palazzo, is the first use of the Italianate style for an important public building in America; it was also the first use of marble for a public building in Washington, D.C. Both Mills and his contemporaries considered the building his masterwork. The building was listed in the NRHP in 1969, designated an NHL in 1971, and contributes to both the Downtown and the Pennsylvania Avenue NHS historic districts (DC SHPO 2009).

Hotel Washington

Built between 1917 and 1920, the Hotel Washington sits on a prominent site at 15th Street and Pennsylvania Avenue NW. The hotel was designed by the renowned New York firm of Carrère & Hastings in the Italian Renaissance style. It is the only commercial building designed by the firm in Washington, D.C., and is a significant representation of a commercial building constructed to uphold the ideals of the American Renaissance (Barsoum 1995b). The Hotel Washington was listed in the NRHP in 1995 and contributes to both the Fifteenth Street and Pennsylvania Avenue NHS historic districts.

L'Enfant Plan of the City of Washington

Pierre Charles L'Enfant's Plan of the City of Washington is the only example of a comprehensive Baroque city plan — with a coordinated system of radiating avenues, parks, and vistas overlaid upon an orthogonal grid of streets — in the U.S. The plan defines the character of the national capital as an innovative capital city for the Federal republic through a "symbolic and commemorative arrangement of buildings, structures, and views" (DC SHPO 2009). The plan was enhanced through the urban improvements of the Senate Park Commission of 1901 (the McMillan Commission), resulting in the "most elegant example of City Beautiful tenets in the nation." The plan is the acknowledged masterpiece of architect-engineer Pierre Charles L'Enfant and the McMillan Commission and has influenced subsequent American city planning and other planned national capitals. The L'Enfant Plan was listed in the NRHP in 1997 (DC SHPO 2009; Leach and Barthold 1994).

LeDroit Block (F Street, NW, South Side of 800 Block)

The LeDroit Block consists of five commercial buildings located on the south side of F Street NW that were all built during the last quarter of the nineteenth century. Completed after large-scale municipal improvements undertaken by the Board of Public Works between 1871 and 1874, these buildings represent the earliest development of F Street as the commercial core of Washington, D.C., and illustrate the renewed civic aspirations of the post-Civil War era. Collectively the buildings enhance the monumentality of the L'Enfant Plan and the nearby General Post Office and Old Patent Office. The group includes one of the city's oldest office buildings and is the work of noted local architects, including Adolf Cluss and Wildrich von Kammerhueber and James G. Hill (DC SHPO 2009; Beauchamp 1973a).

National Archives

The National Archives, located on a triangular parcel bounded by Pennsylvania Avenue, 9th Street, Constitution Avenue, and 7th Street in Northwest Washington, was built between 1931 and 1937 as part of the Federal Triangle. New York architect John Russell Pope designed the monumental Classical Revival-style building. With its prominent position along Pennsylvania Avenue, the building serves as a focal point on the 8th Street axis between the National Portrait Gallery/Old Patent Office building to the north and the Hirshorn Gallery to the south. It was listed in the NRHP in 1971 and is a contributing element of both the Federal Triangle Historic District and the Pennsylvania Avenue NHS Historic District (DC SHPO 2009; Ganschinietz 1971b).

National Bank of Washington

Located at 301 7th Street NW the National Bank of Washington was designed by architect James G. Hill and built in 1889. The Romanesque Revival-style building served as the headquarters of one of the city's longest-lived banks, the Bank of Washington, from 1828 until 1990. The building was listed in the NRHP in 1974 and is a contributing element to the Downtown and the Pennsylvania Avenue NHS historic districts (Beauchamp 1974).

National Union Building

The National Union Building (918 F Street NW) is a narrow, 6-story Romanesque Revival-style commercial building built in 1890. The imposing rock-faced brownstone structure was designed by Washington, D.C., architect Glenn Brown. It was listed in the NRHP in 1990 and is a contributing element to the Downtown and the Pennsylvania Avenue NHS historic districts (Bushong 1988).

McMillian Plan
Source: http://www.nationalmallcoalition.org/preservation/mall-history/mall-history/

National Archives Building
Source: http://uslhs.org/sites/default/files/images/nat_archives/archive.jpg

Old Post Office Building.
Source: New York Times (2014)

Willard Hotel.
Source: Silverbulletcorp.com (2014)

Old City Hall (District of Columbia Court of Appeals)

Old City Hall, located at 451 Indiana Avenue NW, was the first public building that the Federal Government erected for Washington, D.C. Construction on the brick and stucco building, designed by architect George Hadfield, began in 1820, but was not fully completed with its east and west wings until 1849-1850 due to underfunding. The building was enlarged on its north side in 1881-83, and in 1892, a brick ventilating tower was added just to the west of the building. Architect of the Capitol Edward Clark oversaw both projects. In 1916-18, Architect of the Capitol Eliott Woods oversaw the refacing of the entire building in limestone, and the interior was substantially rebuilt with new courtrooms. The building was designated an NHL in 1964 and listed in the NRHP the same year. It is located within a L'Enfant Plan reservation and is a contributing element of the Pennsylvania Avenue NHS Historic District (Milner 1973; DC SHPO 2009).

Old Patent Office (National Portrait Gallery and National Museum of American Art)

The Patent Office was built between 1836 and 1867 on a site (8th and F Streets NW) proposed by L'Enfant for a non-denominational national church. It stands as the largest Greek Revival-style building constructed by the U.S. Government in the nineteenth century. The building's design is attributed to several architects including William P. Elliot, Ithiel Town, Andrew Jackson Davis, Robert Mills, Thomas U. Walter, Edward Clark, and the firm of Cluss and Shultz. In 1962, Congress turned the building over to the Smithsonian for museum use, and it reopened to the public in 1968 as the National Portrait Gallery. The Patent Office was designated an NHL in 1965 and listed in the NRHP in 1966. It is a contributing element of the Downtown Historic District and Pennsylvania Avenue NHS Historic District and is within a L'Enfant Plan reservation (DC SHPO 2009; Brown 1971).

Old Post Office

The Romanesque Revival-style Old Post Office, located at 1100 Pennsylvania Avenue NW was built from 1891-1899 to house the Post Office Department, the City Post Office, and the headquarters of the Postmaster General. The office of the Supervising Architect of the Treasury, led by Willoughby J. Edbrook, prepared the plans for the immense nine-story granite building. At the time of its completion, the building, with its 315-foot high clock tower, was the third tallest building in the city, exceeded only by the Capitol and the Washington Monument. The Old Post Office was listed in the NRHP in 1973 and is a contributing element of both the Federal Triangle Historic District and the Pennsylvania Avenue NHS Historic District (DC SHPO 2009; Ganschinietz and Taylor 1973).

Pension Building (National Building Museum)

Occupying an entire city block bounded by 4th, 5th, F, and G Streets in Northwest Washington, D.C., the massive Italian Renaissance-style Pension building was built between 1882 and 1887 by the U.S. Government to house the U.S. Pension Bureau. The building, designed by architect and Army Quartermaster General Montgomery C. Meigs, was intended as a memorial to those who served in the Civil War. The Pension building was listed in the NRHP in 1969 and was designated an NHL in 1985. It is a contributing element the Pennsylvania Avenue NHS Historic District (DC SHPO 2009; Scott n.d.).

Temperance Fountain

The Temperance Fountain is located near the corner of the intersection of 7th Street and Indiana Avenue NW. It is an example of a rare Victorian-era fountain, donated by Dr. Henry D. Cogswell, a San Francisco dentist and investor, who gave similar fountains to other cities across the country. The fountain was accepted by a joint resolution of Congress in 1882 and was erected in 1884 at Cogswell's expense. It was listed in the NRHP in 2007 and lies within the Downtown and Pennsylvania Avenue NHS historic districts (DC SHPO 2009; Barsoum 2006).

United States Courthouse for the District of Columbia

Erected in 1949-1952, the United States Courthouse for Washington, D.C., at 333 Constitution Avenue NW was one of the last buildings constructed in the Judiciary Square and Municipal center complex, an important site for civic activity since the 1820s. The H-shaped, Indiana limestone building was designed by nationally renowned architect Louis Justement and stands as an almost unaltered example of Stripped Classicism, a style that was predominant in Federal architecture in the decades prior and following World War II. The building was listed in the NRHP in 2007 and is located within the Pennsylvania Avenue NHS Historic District (Brasell 2006).

Washington Loan and Trust Company

Erected in 1891, the Washington Loan and Trust Company building at 900 F Street NW is one of the city's few remaining monumental Romanesque Revival buildings and was one of the city's first skyscrapers prior to the establishment of height limitations. Prominently situated opposite of the Old Patent Office, the rock-faced granite building was designed by architect James G. Hill and has a 1926–1927 addition by architect Arthur B. Heaton. It was listed in the NRHP in 1971 and is a contributing element of the Downtown and Pennsylvania Avenue NHS historic districts (DC SHPO 2009; Taylor 1970).

Willard Hotel

Built between 1900 and 1904, the Willard Hotel at 1401 Pennsylvania Avenue NW, was designed by New York architect Henry Janeway Hardenbergh and erected by the George A. Fuller Co. Hailed at its opening in 1901 as the city's first skyscraper, the building exemplifies the eclectic characteristics of the Beaux Arts style and the early use of steel and concrete construction. It was listed in the NRHP in 1974 and is a contributing element of the Pennsylvania Avenue NHS Historic District (Beauchamp 1973b; DC SHPO 2009).

4.1.7 Socioeconomics and Environmental Justice

The following sections describe the socioeconomic and environmental justice affected environment around the JEH parcel. Socioeconomic and environmental justice covers the following subtopics: population, housing, employment, income, taxes, schools, community facilities, community services, recreation, environmental justice and protection of children. The region of influence (ROI) for socioeconomics and environmental justice is defined as the Washington-Arlington-Alexandria Metropolitan Statistical Area (Washington, D.C., MSA).[2] See section 3.8 for more detailed information on the Washington, D.C., MSA and the methodology used for this section.

4.1.7.1 Population and Housing

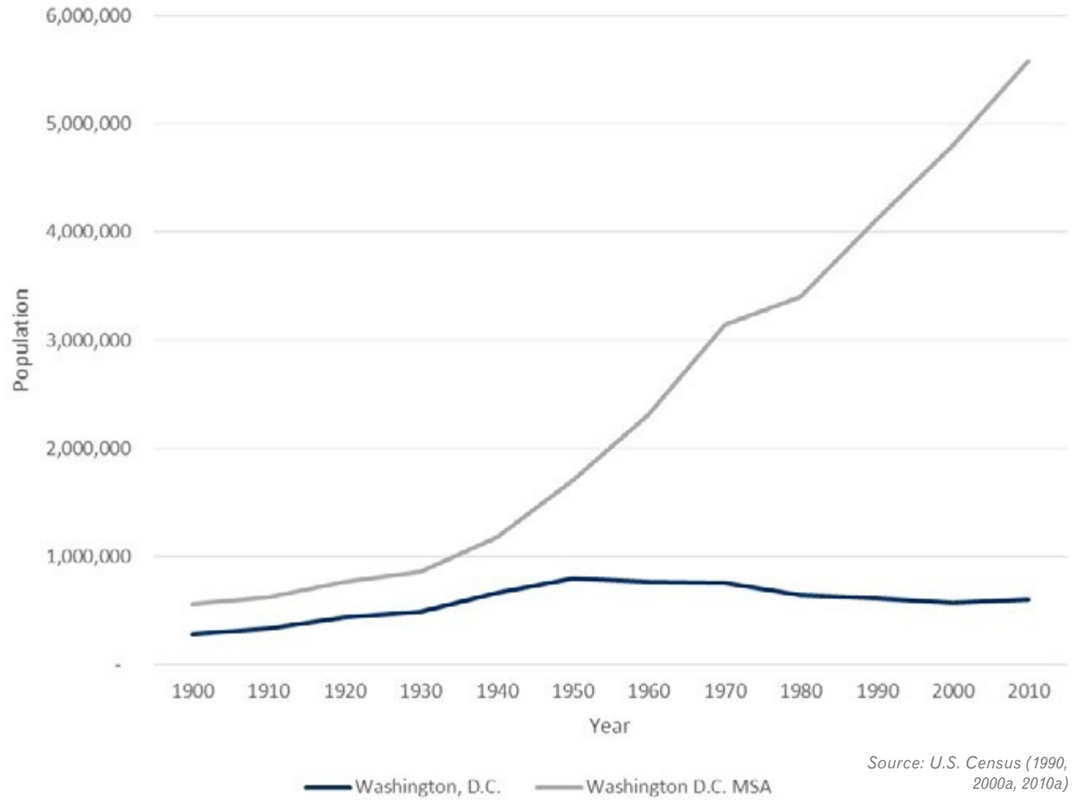
Population

The population in Washington, D.C., doubled between 1930 and 1950, and then declined until 2000, when it rebounded slightly. This trend of increasing population has continued through 2010 during the most recent decennial census (see figure 4-12). The population in the Washington, D.C., MSA increased at a greater rate than the rate of population increase in Washington, D.C., over the same period, peaking to 5.8 million as of the latest U.S. Census information in 2013.[3] Between 2000 and 2013, the population of Washington, D.C., increased by approximately 20 percent while the population in the Washington, D.C., MSA increased by only 12.5 percent during this period, as shown in table 4-2.

[2] The current Washington-Arlington-Alexandria Metropolitan Statistical Area (Washington, D.C., MSA), as defined by the U.S. Census, contains the following 22 counties or independent governments: Frederick County, Maryland; Montgomery County,Maryland; Washington, D.C. ; Calvert County, Maryland; Charles County, Maryland; Prince George's County, Maryland; Arlington County, Virginia; Clarke County, Virginia; Fairfax County, Virginia; Fauquier County, Virginia; Loudoun County, Virginia; Prince William County, Virginia; Spotsylvania County, Virginia; Stafford County, Virginia; Warren County, Virginia; Alexandria city, Virginia; Fairfax city, Virginia; Falls Church city, Virginia; Fredericksburg city, Virginia; Manassas city, Virginia; Manassas Park city, Virginia; and Jefferson County, West Virginia (U.S. Census 2003).

[3]The current geographic boundaries for the ROI and MSA represent the boundaries as they existed in 2010. However, the geographic boundaries for counties and cities included in these combined area statistics have likely changed between 1900 and 2010. Therefore, the statistics in figure 4-12and in the supporting paragraph are reflective of the total population of these areas as their boundaries existed at the time their statistics were recorded and are not based on the boundaries that existed in 2010.

Figure 4-12: JEH Parcel Historic Population Trends, 1900-2010



Source: U.S. Census (1990, 2000a, 2010a)

Table 4-2: Population, 2000, 2009-2013

Geographic Area	2000	2009-2013[a]	Percent Change, 2000-2013
Washington, D.C.,MSA	5,119,490	5,759,330	12.5%
Washington, D.C.	515,118	619,371	20.2%

[a]*This statistic is an annual average statistic from 2009-2013.*
Source: U.S. Census Bureau (2013, 2000a)

JEH SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE AFFECTED ENVIRONMENT OVERVIEW

- The population of Washington, D.C., increased by approximately 20% between 2000 and 2013, and is expected to increase by 50% above 2010 levels by 2040.
- In 2013, the total employed labor force in Washington, D.C., was 724,270 people, and the average, annual mean wage between 2009 and 2013 for all occupations in Washington, D.C., was $83,054 (BLS 2013).
- Between 2009 and 2013, 56% (averaged annually) of the population of Washington, D.C., identified as non-Hispanic white alone, approximately 26% as Black or African American, and the remaining 18% as other minority populations.
- Between 2001 and 2013, the total employed labor force increase by approximately 14% in Washington, D.C. In 2013, the total employed labor force in Washington, D.C. was 724,270 people and between 2009 and 2013, the average, annual mean wage was $83,054.
- Between 2000 and 2013, total unemployment in Washington, D.C., increased from a low of approximately 5% of the total labor force in 2007 to a high of approximately 10% in 2011.
- In 2013, in Washington, D.C., the first and second largest industries, by total jobs, were the Federal, civilian workforce industry (24% of total jobs) and the professional, scientific, and technical services industry (15% of total jobs).

Table 4-3: JEH Parcel Population Projections, 2020-2040

Geographic Area	Year					2010 – 2040	
	2020	2025	2030	2035	2040	Total Change	Percent Change
Washington, D.C., MSA	5,945,206	6,277,833	6,564,198	6,820,892	7,042,966	1,775,715	34%
Washington, D.C.	715,494	764,267	808,718	852,428	883,568	281,804	47%

Source: MWCOG (2014)

Table 4-4: JEH Parcel Racial Characteristics, 2009-2013[a]

Geographic Area	Total Population	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race or two or more races	Minority Population[b]
Washington, D.C., MSA	5,759,330	56.1%	25.5%	0.4%	9.3%	0.1%	8.7%	51.7%
Washington, D.C.	619,371	40.1%	50.1%	0.3%	3.5%	0.0%	5.9%	64.9%

[a]These statistics are annual average statistics from 2009-2013.
[b]This is the total population minus the population of persons identifying themselves as non-Hispanic white alone. Minority population is separate from race and includes the Hispanic ethnicity.
Source: U.S. Census Bureau (2013)

Table 4-5: JEH Parcel Housing Supply, 2009-2013[a]

Geographic Area	Total Number of Housing Units	Percent Change in Number of Housing Units (2000 to 2013)	Total Number of Occupied Housing Units	Total Number of Vacant Housing Units	Percent of Total Housing Units that are Vacant	Total number of Renter-Occupied Units	Percent of Housing Units Available for Rent
Washington, D.C., MSA	2,249,459	N/A	2,091,301	158,158	7.60%	725,793	5.30%
Washington, D.C.	298,327	8.50%	263,649	34,678	11.60%	148,713	6.40%

a These statistics are annual average statistics from 2009-2013.
Note: "N|A" indicates that information on housing was not available.

Source: U.S. Census Bureau (2013b, 2010b, 2000b)

The Metropolitan Washington Council of Governments (MWCOG),[4] which does not share the same boundary as the Washington, D.C., MSA, projects that the population of the metropolitan area would grow by 1.8 million people by 2040, resulting in a total population of 7,042,966 in 2040, which represents a 34 percent increase in population from 2010 (table 4-3).

Between 2009 and 2013, 56 percent of the average annual population of Washington, D.C., MSA identified themselves as white alone while 40 percent of the population of Washington, D.C., identified themselves as white alone. Approximately 26 percent of census respondents identified themselves as Black or African American alone in the Washington, D.C., MSA, while half of all respondents in Washington, D.C., identified themselves as Black or African American alone. The remaining 18 percent of respondents in the Washington, D.C., MSA and 10 percent of respondents in Washington, D.C., identified themselves as other minority populations. Table 4-4 summarizes the racial composition of Washington, D.C., the ROI, and the Washington, D.C., MSA.

Housing

There were approximately 2.3 million housing units in the Washington, D.C., MSA in 2013. Between 2000 and 2013, the total number of housing units in Washington, D.C. increased by approximately nine percent (table 4-5). Washington, D.C., had a higher homeowner vacancy rate (at 12 percent) relative to the Washington, D.C., MSA in the year 2013.

[4] The population projection model is based on the 1983 definition of the Metropolitan Statistical Area (MSA) that includes the District of Columbia, Calvert County, Charles County, Frederick County, Montgomery County, and Prince George's County in Maryland; and Alexandria, Arlington County, Fairfax, Fairfax County, Falls Church, Loudoun County, Manassas, Manassas Park, Prince William County, and Stafford County in Virginia (MWCOG 2015a). The 1983 definition of the MSA is not the current Washington D.C., MSA definition used in this document.

Regional economic growth is expected to continue to attract new residents and increase the general demand for new housing. According to MWCOG, between 2005 and 2040, the number of households would grow in Washington, D.C., by approximately 34 percent (MWCOG 2010). Current housing vacancy levels, at 31,324 vacant housing units, are around the levels last seen in 2006 prior to the onset of the national recession. The number of housing vacancies in Washington, D.C. has decreased since 2010, which was an eight year high at 44,448 vacant housing units (U.S. Census Bureau 2009-2013).

4.1.7.2 Employment and Income

Total employment, unemployment, and income information is presented by place-of-residence. Between 2001 and 2013, the total employed labor force (including Armed Forces) increased by approximately 18 percent in Washington, D.C., a growth rate that was slightly higher than the rate of growth the Washington D.C., MSA experienced during this period. In 2013, the total employed labor force in Washington, D.C., was 341,753 people, and the average, annual mean wage between 2009 and 2013 for all occupations in Washington, D.C., was $83,054 (BLS 2013). Table 4-6 presents employed labor force, median household income, and the percentage of all people living below poverty in Washington, D.C., and the Washington D.C., MSA.

Unemployment

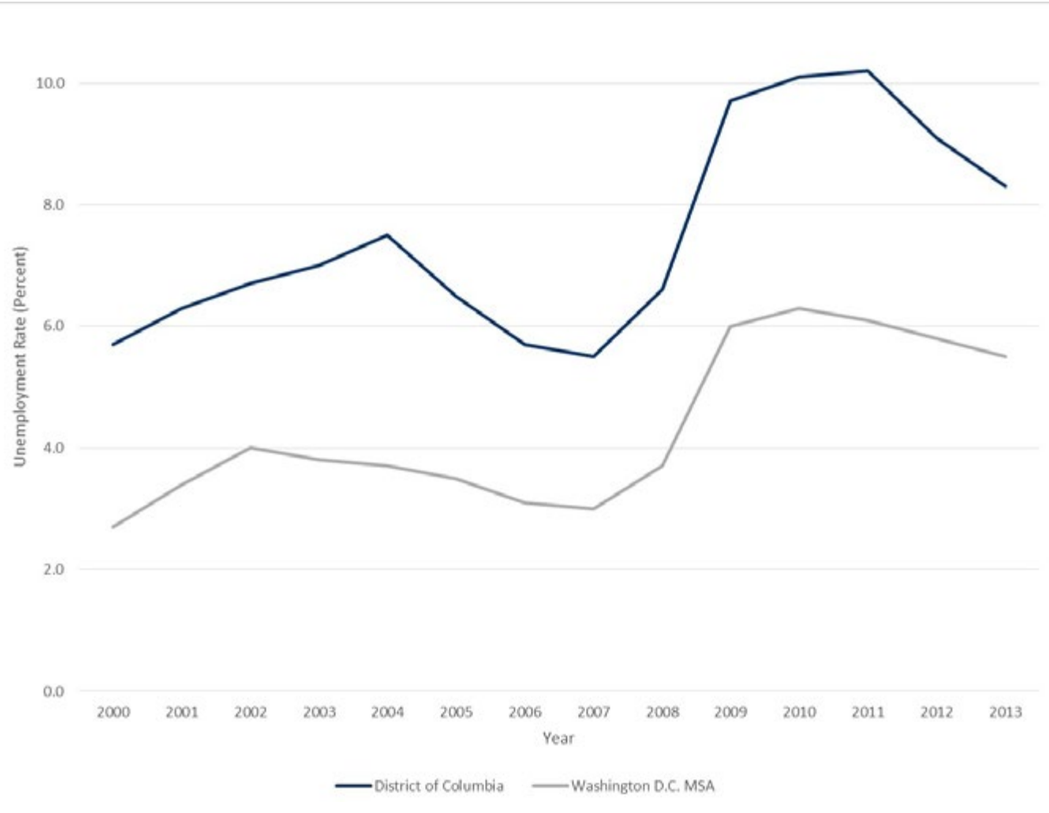
Between 2000 and 2013, total unemployment in Washington, D.C., increased from a low of approximately 5 percent of the total labor force in 2007 to a high of approximately 10 percent in 2011. As a percentage of the total labor force, annual unemployment in Washington, D.C., has historically been greater than annual unemployment in the Washington, D.C., MSA (see figure 4-13) (BLS 2014). As of 2013, the national annual unemployment rate was 7.4 percent.

Table 4-6: JEH Parcel Employment and Income, 2001-2013[a]

Geographic Area	Employed Labor Force 2013 (number)	Employment Change 2001 - 2013 (percent)	Median Household Income, 2009 – 2013*	Percentage of People Living Below Poverty, 2009-2013*
Washington D.C., MSA	3,078,147	+ 16.4%	$90,540	8.2%
Washington, D.C.	341,753	+ 17.5 %	$65,830	18.6%

[a]This statistic is an annual average statistic from 2009 to 2013.
Source: U.S. Census Bureau (2013a); BLS (2013)

Figure 4-13: JEH Parcel Unemployment Rates, 2000-2013



HOUSING OVERVIEW

- The total number of housing units in the ROI increased by approximately 11% between 2000 and 2013 for a total of one million housing units.
- Between 2005 and 2040, the number of households will grow in Washington, D.C., by approximately 34%.

MWCOG

The Metropolitan Washington Council of Governments (MWCOG) is an independent, nonprofit association that brings area leaders together to address major regional issues in the District of Columbia, suburban Maryland, and Northern Virginia. More information is available online at: www.mwcog.org.

Table 4-7: JEH Parcel Jobs by Industry, 2013

Industry	Washington, D.C.		Washington, D.C., MSA	
	2013	Percent Change 2001-2013	2013	Percent Change 2001-2013
Total employment	844,260	14.0%	4,019,399	16.4%
Farm employment	0	0.0%	10,752	-12.5%
Forestry, fishing, and related activities	85	(D)	3,273	(D)
Mining	515	(D)	(D)	(D)
Utilities	1,942	(D)	8,309	(D)
Construction	16,957	24.6%	(D)	(D)
Manufacturing	1,677	-55.9%	57,571	(D)
Wholesale trade	5,473	14.0%	71,248	(D)
Retail trade	23,351	17.0%	316,461	3.6%
Transportation and warehousing	7,097	(D)	86,532	(D)
Information	19,477	(D)	93,241	(D)
Finance and insurance	24,658	15.1%	160,815	(D)
Real estate and rental and leasing	24,650	43.3%	188,198	(D)
Professional, scientific, and technical services	128,048	21.5%	(D)	(D)
Management of companies and enterprises	2,478	-2.2%	(D)	(D)
Administrative and waste management services	51,576	11.8%	251,942	(D)
Educational services	58,500	39.0%	129,519	(D)
Health care and social assistance	70,603	28.2%	347,852	(D)
Arts, entertainment, and recreation	13,957	35.1%	(D)	(D)
Accommodation and food services	63,562	(D)	(D)	(D)
Other services, except public administration	78,514	16.0%	285,699	21.1%
Federal, civilian	200,751	9.6%	389,596	15.5%
Military	15,119	-34.5%	66,531	-15.9%
State and local	35,270	-9.5%	314,560	17.0%

Note: (D) indicates information collected by BEA that is protected against public disclosure by the International Investment and Trade in Services Survey Act (P.L. 94–472, 90 Stat. 2059, 2 u.s.c. 3101–3108, as amended).
Source: BEA (2013)

Jobs by Industry

In 2013, in Washington, D.C., the largest industry, by total jobs, similar to the Washington, D.C., MSA, was the Federal, civilian workforce industry (24 percent of total jobs). The second largest industry in Washington, D.C., was the professional, scientific, and technical services industry (15 percent of total jobs). The construction industry made up 2 percent of the all jobs in Washington, D.C., in 2013. This industry experienced a 25 percent growth in the number of jobs between 2001 and 2013. Total jobs in the construction industry in the Washington, D.C., MSA were not reported for the year 2013.

According to Washington, D.C's, Employment Services, there are expected to be 202 annual new openings in the construction industry per year. This indicates that the construction industry is expected to add approximately 2,000 new construction jobs between 2012 and 2022. Similar information is not available at the Washington, D.C., MSA level. However, if this growth trend were extrapolated relative to the total jobs in these areas then it is possible that the Washington, D.C., MSA could add 962 construction jobs annually, during this period. This would result in approximately 10,000 new construction jobs between 2012 and 2022 for the Washington, D.C.,MSA (Washington, D.C. 2012).Table 4-7 summarizes employment by industry in 2013 and the total change in employment for each industry since the year 2001 (BEA 2013, 2013a).

4.1.7.3 Taxes

Washington, D.C., applies sales and use taxes, and real estate taxes. Both residential and commercial land is taxed at $1.850 per $100 of 100 percent of the assessed value of the property (District of Columbia 2015). Real property tax revenues totaled approximately $1.97 billion in Washington, D.C., for Fiscal Year (FY) 2014. Washington, D.C., imposes a 5.75 percent retail tax rate, as well as a 10 percent rate on prepared food and all liquor, a 14.5 percent rate on hotels and an 18 percent rate on motor vehicle parking in commercial lots (District of Columbia 2015). In FY 2014, total sales tax revenues were estimated to be $967 million in Washington, D.C., while personal income tax revenues were approximately $1.7 billion. Washington, D.C., imposes an overall progressive tax structure on personal income, meaning the tax rate is bracketed, with higher rates applied to higher levels of income. Under the District of Columbia law, the JEH parcel as property of the U.S. Government, is exempt from real property taxation (District of Columbia 2014).

4.1.7.4 Schools

There are 111 public schools in Washington, D.C. (DCPS 2014). A breakdown of the types of schools is presented in table 4-8. Currently, Washington, D.C., schools, as a whole, are under-enrolled. The Washington, D.C., school system initiated a Better Schools for All Students, which is the school system's Consolidation and Reorganization Plan, in January of 2013 (DCPS 2013) that will aid Washington, D.C., in consolidating and reorganizing its schools.

There are two public schools within 1 mile of the JEH parcel: Thomson Elementary School in Ward 2 (pre-kindergarten to grade 5) and Walker-Jones Education Campus in Ward 6 (pre-kindergarten to eighth grade). Enrollment in the D.C. public school system for school year 2014–2015, grades pre-kindergarten 3 through 12 was 47,548 students (DCPS 2014). In addition to the D.C. public school system, there are 102 private schools in Washington, D.C., serving 17,722 enrolled students (Private School Review 2014). The Basis School, located one block east of the JEH parcel at 410 8th Street NW, is an open enrollment charter school serving grades 5 through 11. The nearest higher education school to the JEH parcel is Fox Valley's Technical College (Criminal Justice Center) located at 401 9th Street NW (Fox Valley Technical College 2014).

4.1.7.5 Community Services, Facilities, and Recreation

Police Services

In Washington, D.C., every resident lives in a Police Service Area, and every Police Service Area has a team of police officers and officials assigned to it. There are 56 Police Service Areas within seven districts in Washington, D.C. (District of Columbia Metropolitan Police 2014). The JEH building parcel is located in District 1 and served by Police Service Area 101 (DC.gov 2014a). There are currently 3,929 sworn members of the Metropolitan Police Department, which results in 5.96 police offers per 1,000 residents in Washington, D.C. The police department has maintained an average of 3,900 sworn members over the past five years. Over the past two years, police response times have decreased by approximately 5 percent, resulting in better service levels (District of Columbia Metropolitan Police 2015). Further detail on police services for the JEH building parcel is provided below in section 4.1.8.1.

Fire and Emergency Services

The D.C. Fire and Emergency Medical Services Department serves residents and visitors of Washington, D.C., through a variety of services, including pre-hospital treatment and transportation, fire suppression and rescue activities and homeland security awareness (DC 2014). Ambulance, emergency medical technician, and paramedic response times all increased between July 2014 and July 2015. Approximately 90 new fire cadets were hired in 2014 and 30 new ambulances were purchased by the Fire Department between July and December in 2013.

The closest D.C. Fire and Emergency Medical Services Department Engine Station to the JEH parcel is Engine 2 & Rescue Squad 1, located at 500 F Street NW, three blocks east of the JEH parcel. Further detail on fire and emergency services for the JEH building parcel is provided below in section 4.1.8.2 (FireCompanies.com 2014).

Table 4-8: Number of Schools in Washington, D.C.

Type of School	Washington, D.C.
Elementary Schools	60
Middle Schools[a]	11
Secondary Schoolsa	N/A
High Schools	15
Academies[b]	N/A
Education Campuses	18
Adult Education Schools	2
Special Education Schools	2
Youth Engagement Schools	3
Vocational Centers	N/A
Alternative Schools	N/A
Public Charter Schools	N/A
Total	111

[a] Secondary schools include grades 7 through 12.
[b] Academies include pre-kindergarten to 8th grade.
Sources: DCPS (2014); FCPS (2014); PGCPS (2014)
**N/A: This means that data for these was not available.*

JEH SCHOOLS OVERVIEW

- There are 111 public schools in the District of Columbua and 511 total public schools within the ROI.
- Enrollment in the D.C. public school system for school year 2014-2014, grades pre-kindergarten 3-12 was 47,548 students. The 102 private schools in the District had an enrollment of 17,722 students in the same year.

JEH COMMUNITY SERVICES

- District of Columbia is composed of 56 Police Service Areas within Seven Districts. The JEH building parcel is located in District 1 and is served by Police in Service Area 101.
- The closest D.C. Fire and Emergency Medical Services Department Engine Station to the JEH parcel is Engine 2 & Rescue Squad 1, located at 500 F Street NW three blocks east of the JEH site.
- There are two hospitals located within proximity to the JEH parcel; each approximately 2 miles way, the George Washington University Hospital and the Howard University Hospital.

JEH RECREATION

- Washington, D.C., Department of Parks and Recreation has recreation centers in every ward so that every resident lives within 2 miles of a recreation center.
- Several museums and tourist attractions are located within a few blocks from the parcel, including the Smithsonian American Art Music, the International Spy Museum, the National Building Museum, and Ford's Theater, in addition to restaurants, entertainment, and shopping options in Chinatown about a mile from the site.
- South of the JEH parcel is the National Mall & Memorial Parks, which contains more than 80 historic structures and 150 major named historic parks, squares, circles, and triangles.

Medical Facilities

The Washington, D.C., Department of Health has a number of programs to ensure a coordinated system of health care for Washington, D.C., residents. There are a mix of non-profit public, for-profit private, and non-profit private hospitals in Washington, D.C. These hospitals provide care to all members of the public and they include: Children's National Medical Center; George Washington University Hospital; Howard University Hospital; MedStar Washington Hospital Center; MedStar Georgetown University Hospital; MedStar National Rehabilitation Hospital; and MedStar Washington Hospital Center; among others (DC 2014). MedStar Washington Hospital Center is the largest private hospital in Washington, D.C., with 926 hospital beds (MedStar Washington Hospital Center 2014). There are two hospitals located within proximity to the JEH parcel; each approximately 2 miles away. The George Washington University Hospital, located to the west of the JEH parcel, has 385 beds, 18,721 annual patient admissions, a level 1 Trauma Center, and a combined physician and nursing staff in excess of 1,600 (George Washington University Hospital 2014). Howard University Hospital, located to the north of the JEH parcel, has 479 beds, and a full time equivalent staff of 650 physicians and registered nurses (UcompareHealthCare 2015).

Other Community Facilities

In addition to schools, police, fire and emergency, and recreation facilities, there are numerous other community facilities near the JEH parcel that are commonly located in urban environments, such as childcare centers, houses of worship, universities, and libraries. Unless noted otherwise, the following community resources were located using DC Geographic Information Systems (GIS) data (Office of Chief Technology Office 2015).

There are several childcare centers catering to the high concentration of employment in downtown Washington, D.C. Childcare centers within a quarter mile of the JEH parcel include Bright Horizons at 1111 Pennsylvania Avenue NW, Federal Trade Commission Childcare Center at 600 Pennsylvania Avenue NW, National Office Child Development Center at 1111 Constitution Avenue NW, Triangle Tots at 1300 Pennsylvania Avenue NW, Just Us Kids at 625 Indiana Avenue NW, Arnold & Porter Children's Center at 555 12th Street NW, Milestones Enrichment Center, Inc. at 755 8th Street NW, HHS/ED Children's Center at 330 12½ Street NW and Covington Kids at 1331 Pennsylvania Ave NW (DC GIS 2015).

Washington, D.C's, largest library, Martin Luther King Jr. Memorial Library, is located three blocks north of the JEH parcel, and in addition to traditional library services, it offers training classes, exhibits, and events on a regular basis.

Table 4-9 and figure 4-14 provides a comprehensive list of all the community facilities found within the study area.

Recreation

In Washington, D.C., the Department of Parks and Recreation has recreation centers in every ward so that every resident lives within 2 miles of a recreation center. Recreation facilities provided by the Department of Parks and Recreation include aquatic facilities, athletic fields, capital projects, community gardens, environmental centers, fitness centers and gymnasiums, playgrounds, senior service centers, and tennis courts (DC 2014).

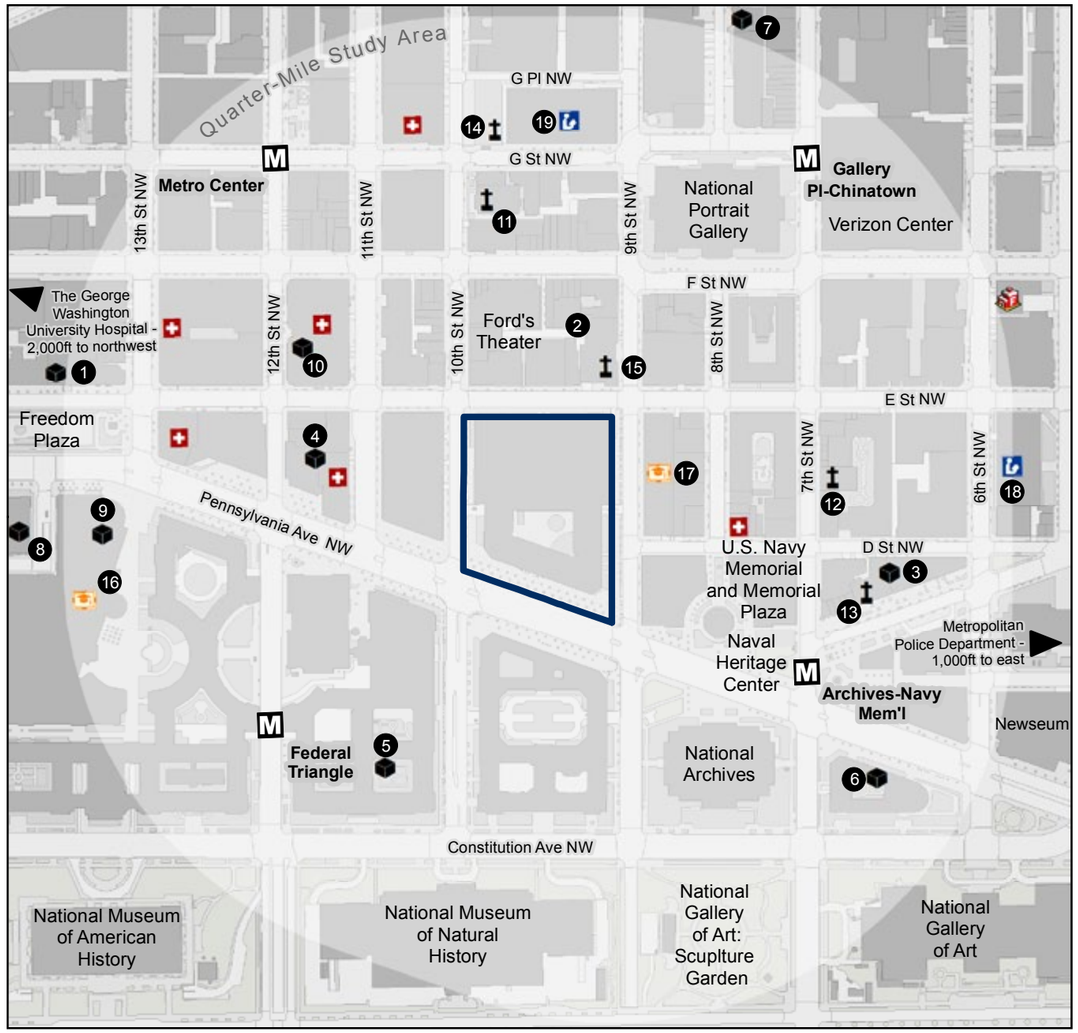
Several museums and tourist attractions are located within a few blocks from the project site, including the Smithsonian American Art Music, the International Spy Museum, the National Building Museum, and Ford's Theater. Chinatown is approximately 0.5 mile from the JEH parcel and offers entertainment, restaurants, and shopping options for visitors and residents. South of the JEH parcel is the National Mall & Memorial Parks, which contains more than 80 historic structures and 150 major named historic parks, squares, circles, and triangles. Park resources include botanical gardens, in addition to 2,000 American elms and 3,000 Japanese cherry trees. National Malls & Memorial Parks is responsible for 43 ball fields where local clubs play softball, soccer, rugby, field hockey, volleyball, and polo. Other recreational opportunities, including jogging, biking, picnicking, golf, swimming, tennis, paddle boating, ice skating, and fishing, can be accessed by residents and visitors throughout the park (NPS 2015a). Figure 4-14 shows the parks within the study area.

Table 4-9: JEH Parcel Community Facilities

Facility	Map ID	Description
Child Care	1	Covington Kids
	1	Mid-Atlantic for Children's Health
	2	Just Us Kids
	3	Bright Horizons Family Solutions
	4	National Office Child Development Center
	5	FTC Child Care Center Inc.
	6	Milestones Enrichment Center, Inc.
	7	HHS/ED Children's Center
	8	Triangle Tots
	9	Arnold & Porter Children's Center
Houses of Worship	10	St. Patrick's Catholic Church
	11	IOOF Temple
	12	Grace Presbyterian Church Office
	13	First Congregational UCC
	14	Methodist Protestant Church
University	15	Stevens Institute of Technology
	16	Fox Valley Technical College
Library	17	Antitrust Library
	18	Martin Luther King Jr. Memorial Library
	19	

Source: Google Maps and DC GIS (2014)

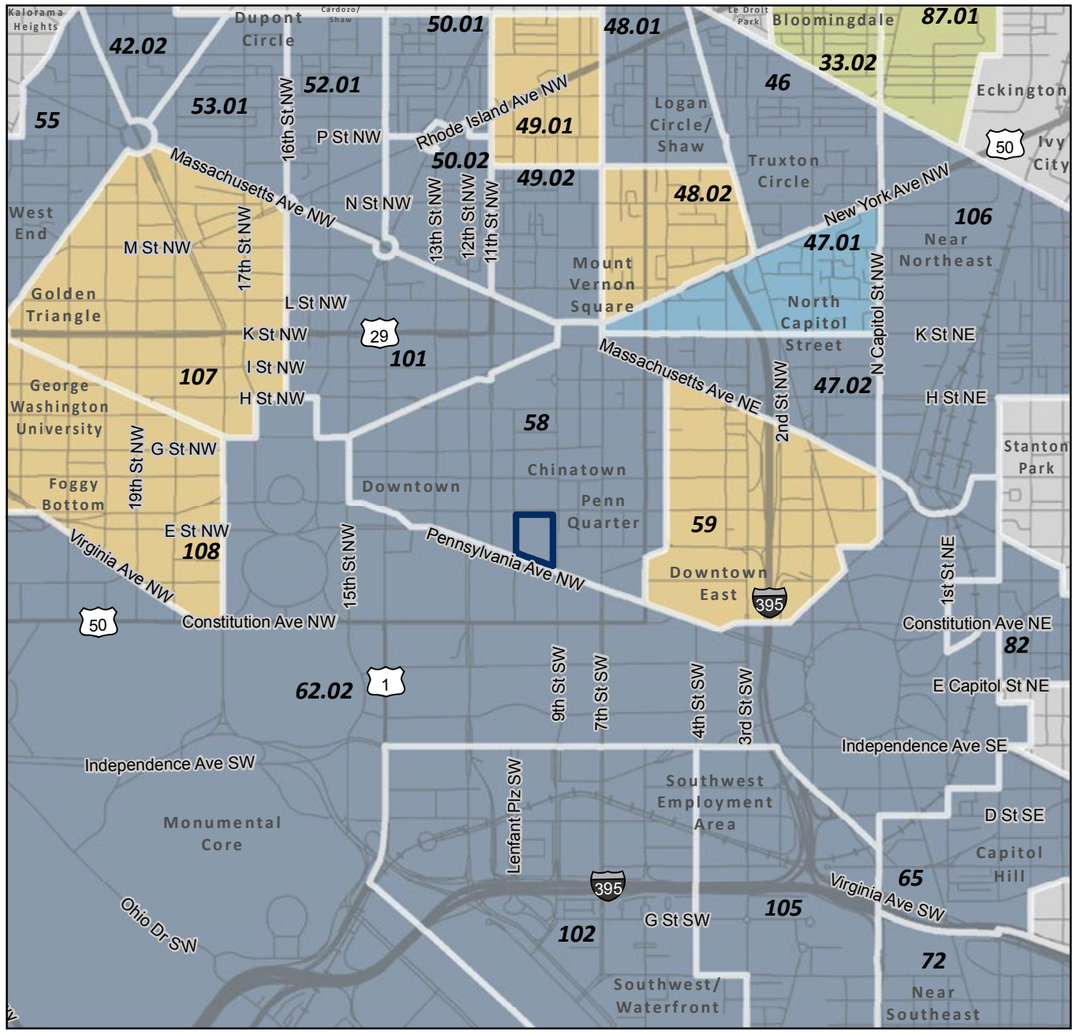
Figure 4-14: JEH Parcel Community Services, Facilities, and Recreation



JEH ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

- Of the 18 Census tracts within a 1-mile radius of the JEH parcel, 6 have at least 20% of their population living below the poverty level in 2013 and 3 have a minority population that exceeds the minority population of Washington, D.C.
- In the proximity of the JEH parcel there is The Basis School (grades 5-11), Thomson Elementary School and the Walker-Jones Education Campus. Additionally, there are a number of childcare centers within a 1-mile radius to the JEH parcel, including Bright Horizons Family Solutions, HHS/ED Children's Center, Milestones Enrichment Center, and Federal Trade Commission Childcare Center.

Figure 4-15: JEH Parcel Sensitive Populations



4.1.7.6 Environmental Justice

Minority and poverty information for the Washington, D.C., MSA and Washington, D.C., are provided in table 4-4 and table 4-6. Eighteen census tracts are located within 1 mile of the JEH building in Washington, D.C. Of these 18 tracts, 6 have at least 20 percent of their population living below the poverty level in 2013: 47.01, 48.02, 49.01, 59, 107, and 108. Only 3 census tracts within 1 mile of the JEH parcel have a minority population that exceeds the minority population of Washington, D.C., by at least 10 percent: 47.01, 33.02, and 87.01. Census tracts with minority and impoverished populations within 1 mile of the JEH parcel are identified in figure 4-15. Details on Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations are provided in section 3.8.3.3.

Protection of Children

Children attend schools within proximity to the JEH parcel. The Basis School (grades 5-11) is located directly east of the JEH parcel and both Thomson Elementary School and the Walker-Jones Education Campus are located within a 1-mile radius of the JEH parcel. In total there are at least 1,235 children attending schools within 1 mile of the project site (Arguepa 2015; Blackmon 2015; Brooks 2015). In addition, there are a number of childcare centers within a 1-mile radius of the JEH parcel, as shown in figure 4-14. Children likely also reside in housing units around the parcel. Children make up approximately 7 and 2 percent of the residents of the census tracts 58 and 59, respectively (U.S. Census 2013d). The requirements of EO 13045, Protection of Children from Environmental Health and Safety Risk, are described in section 3.8.3.3.

4.1.8 Public Health and Safety/Hazardous Materials

The existence of a Federal facility, particularly one serving a law enforcement and national security mission such as the FBI, can have security and public safety impacts on surrounding land uses, depending on the type and intensity of use. As described in greater detail in section 4.1.4, land uses in proximity to the JEH parcel are predominantly Federal, local public, mixed use, and commercial, with a medium- to high-level of density, interspersed with parks and open spaces. No schools, churches, or similar community facilities that may be noteworthy from a public safety standpoint are located within 0.25 mile of the JEH parcel. FBI police and security personnel maintain emergency response plans and security protocols that would be followed in case of intentional destructive acts or other emergencies to minimize the risk of injury to both FBI employees and the public.

4.1.8.1 Public Health and Safety

The JEH parcel is located within the area policed by the DC Metropolitan Police First District. The First District is divided operationally into two areas, west and east, and the JEH parcel is located in the west area. 101 M Street SW, is approximately a 1.8-mile drive from the JEH parcel.

A variety of other police, law enforcement, and security forces operate within the downtown Washington, D.C., area. These agencies are not specifically charged with protection of the general public; rather, their missions are focused on protection of specific Federal properties, facilities, and/or employees. Nonetheless, these agencies augment, and in some cases may overlap, with the law enforcement and public safety mission of the D.C. Metropolitan Police. Law enforcement and security forces operating at Federal facilities and properties in the vicinity surrounding the JEH parcel include the FBI Police; U.S. Capitol Police; U.S. Park Police; U.S. Federal Protective Service; and U.S. Secret Service.

Fire and emergency services for Washington, D.C., are provided through D.C. Fire and Emergency Services (DCFEMS). DCFEMS provides fire suppression, emergency medical services (EMS), homeland security, and special operations response for residents and visitors to Washington, D.C. There are 33 neighborhood fire stations that deploy 39 EMS transport units (ambulances), 33 engine companies, 16 ladder trucks, 3 heavy-rescue squads, 1 hazardous materials unit, and 1 fire boat company. The department responds to more than 150,000 911 calls each year and transports more than 90,000 patients to local hospitals. DCFEMS also provides services for special events unique to the nation's capital, such as demonstrations, public gatherings, and presidential inaugurations (Fire and Emergency Services Department 2013). DC Fire Department Engine 2/ Rescue 1 is located at 500 F Street NW, approximately 0.25-mile northeast of the JEH parcel. Two hospitals are located within approximately 2 miles of the site, as shown in table 4-10.

Police response times to the JEH parcel are approximately 4 minutes. Fire/emergency response times to the JEH parcel are approximately 1 minute, as shown in table 4-10. Police and emergency response times were calculated by applying the ArcGIS Network Analyst routing function to a network dataset based on the 2014 ESRI Detailed Streets layer. The streets layer records the average travel time, in minutes, to traverse each road segment. The route function summarizes the time cost for each route. Actual response times may vary from this reported time depending on traffic conditions and the average speeds of the response vehicles, which are unknown at this time.

Table 4-10: JEH Parcel Emergency Response Times

Facility	Approximate Response Time (Minutes)	Distance from Site (Miles)	Description
Fire Station/Emergency Services	1.0	0.6	Washington DC Fire & EMS Engine 2 & Rescue Squad 1
Hospital	3.9	2.2	George Washington University Hospital
	3.5	1.9	Howard University Hospital
Police Station	3.6	1.8	District 1 Metropolitan Police Station

Police and emergency response times were calculated by applying the ArcGIS Network Analyst routing function to a network dataset based on the 2014 ESRI detailed streets layer. The streets layer records the average travel time, in minutes, to traverse each road segment. Travel time data originates with TomTom North America, Inc. The route function summarizes the time cost for each route. Actual response times may vary from this reported time depending on traffic conditions and the average speeds of the response vehicles, which are unknown at this time.

Source: Google Maps; OCTO (2015)

JEH PUBLIC HEALTH AND SAFETY/ HAZARDOUS MATERIALS AFFECTED ENVIRONMENT OVERVIEW

- The JEH parcel is located within the area policed by the DC Metropolitan Police First District, which is augmented, and in some cases overlaps, with a variety of other police, law enforcement, and security forces that operate in the downtown Washington, D.C., to protect specific Federal properties, facilities, and/or employees.
- DCFEMS provides fire suppression, EMS, homeland security, and special operations response for residents and visitors to downtown Washington, D.C. The department responds to more than 150,000 911 calls each year and transports more than 90,000 patients to local hospitals.
- Police and fire/emergency response times to the JEH parcel are approximately 4 minutes.
- According to the U.S. Equal Opportunity Act, there is no existing contamination on the JEH parcel, however, USEPA's EnviroMapper identified 26 contaminated sites within approximately 0.5 mile of the JEH parcel.
- The closest National Priority List (NPL) site to the JEH parcel is the Washington Navy Yard which is located more than 2 miles to the southeast of the JEH parcel.

NATIONAL PRIORITIES LIST

The National Priorities List (NPL) is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the U.S. and its territories.

4.1.8.2 Hazardous Materials

Information available from USEPA (2015e, 2015f, 2015g) does not identify any existing contamination on the JEH parcel. However, USEPA's EnviroMapper identified 26 hazardous waste sites or brownfields within approximately 0.5 mile of the JEH parcel (USEPA 2015h).

USEPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database identified no National Priorities List (NPL) sites in proximity to the JEH parcel. The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL includes the most hazardous sites across the United States and its territories (USEPA 2015e). The Washington Navy Yard, which is the only NPL site identified within Washington, D.C., is located just more than 2 miles to the southeast of the JEH parcel. Cleanup action at the Washington Navy Yard has been initiated, but not completed.

GSA prepared a Hazardous Building Materials Report for the JEH parcel in March, 2015 to assess site conditions with respect to hazardous materials, including lead- and asbestos-containing materials (WSP 2015). The report found asbestos-containing materials present throughout the building. Lead-based paint was found to be present, as was lead-containing dust associated with firing range activities. Switches and bulbs likely containing mercury were found to be present throughout the building. PCB-containing light fixtures and PCB-contaminated concrete were also found to be present. The report concluded that further testing would be necessary to confirm the extent to which many of these potentially hazardous materials may be present. Abatement of hazardous building materials would be likely to involve large areas and incorporate multiple floors of the JEH building (WSP 2015).

4.1.9 Transportation

The following sections describe the affected environment for the JEH parcel and provide a summary of existing transportation conditions in the study area as of February 2015.

4.1.9.1 Study Area Description

Vehicular transportation conditions were studied within a study area that is generally bounded by H Street NW to the north, 3rd Street NW to the east, Constitution Avenue NW to the south, and 14th Street NW to the west. The study area was established in coordination with DDOT to capture traffic from primary regional traffic generating roadways in proximity to the site (see DDOT Scoping Form in Appendix A). There are a total of 32 intersections in the study area, as shown in figure 4-16. See section 3.10.1 for a more in-depth discussion of the study area development.

4.1.9.2 Study Area Accessibility

The JEH parcel is served by regional highways (Southwest Freeway/Interstate [I]-395) via the 9th and 12th Street Expressways and by the following principal arterial roadways: Constitution Avenue NW, 14th Street NW, 7th Street NW, and Pennsylvania Avenue NW, all of which traverse the study area. Several minor arterials also provide access to the parcel, including 9th and 12th Streets NW. Roadway classifications within the study area are shown in figure 4-17. Properties in the study area are also served by transit, including Metrorail, commuter bus, local bus, several shuttles, and tourist buses. The study area generally has wide complete sidewalks, especially along the main thoroughfares of Constitution Avenue NW and Pennsylvania Avenue NW. Some bicycle facilities (mainly Capital Bikeshare) also serve the study area, and many well established on-street bike lanes are currently available.

4.1.9.3 Roadway Descriptions

The following section describes the roadways within the study area, including the DDOT roadway classification, the number of lanes in each direction, the latest annual average daily traffic (AADT) volumes available from DDOT from 2012, and any noteworthy characteristics such as the roadway's role within the transportation network and if bike lanes are present. The information was collected from a Washington, D.C., Roadway Functional Classification map (DDOT 2014b), observations in the field, aerial imagery, and DDOT's 2012 Traffic Volume Map (DDOT 2013a). The number of lanes of traffic indicated below are for AM and PM rush hour conditions. Mid-day and weekend conditions may have fewer travel lanes because on-street parking is allowed during non-peak hours.

14th Street NW extends for a short stretch in the study area from Constitution Avenue NW to Pennsylvania Avenue NW. It is a two-way roadway that is classified by DDOT as a principal arterial. The roadway is oriented north-south, connects Northwest D.C. to the 14th Street Bridge, and varies between three and four lanes in both the northbound and southbound directions. 14th Street NW provides connections to Constitution Avenue NW and Pennsylvania Avenue NW, both of which are major east-west arterial roadways and also serve as major regional and commuter routes between Arlington, Virginia, to the southwest and downtown D.C. to the north. The AADT for 14th Street NW in the study area was 39,000 in 2012 (DDOT 2013a).

Figure 4-16: JEH Parcel Study Area

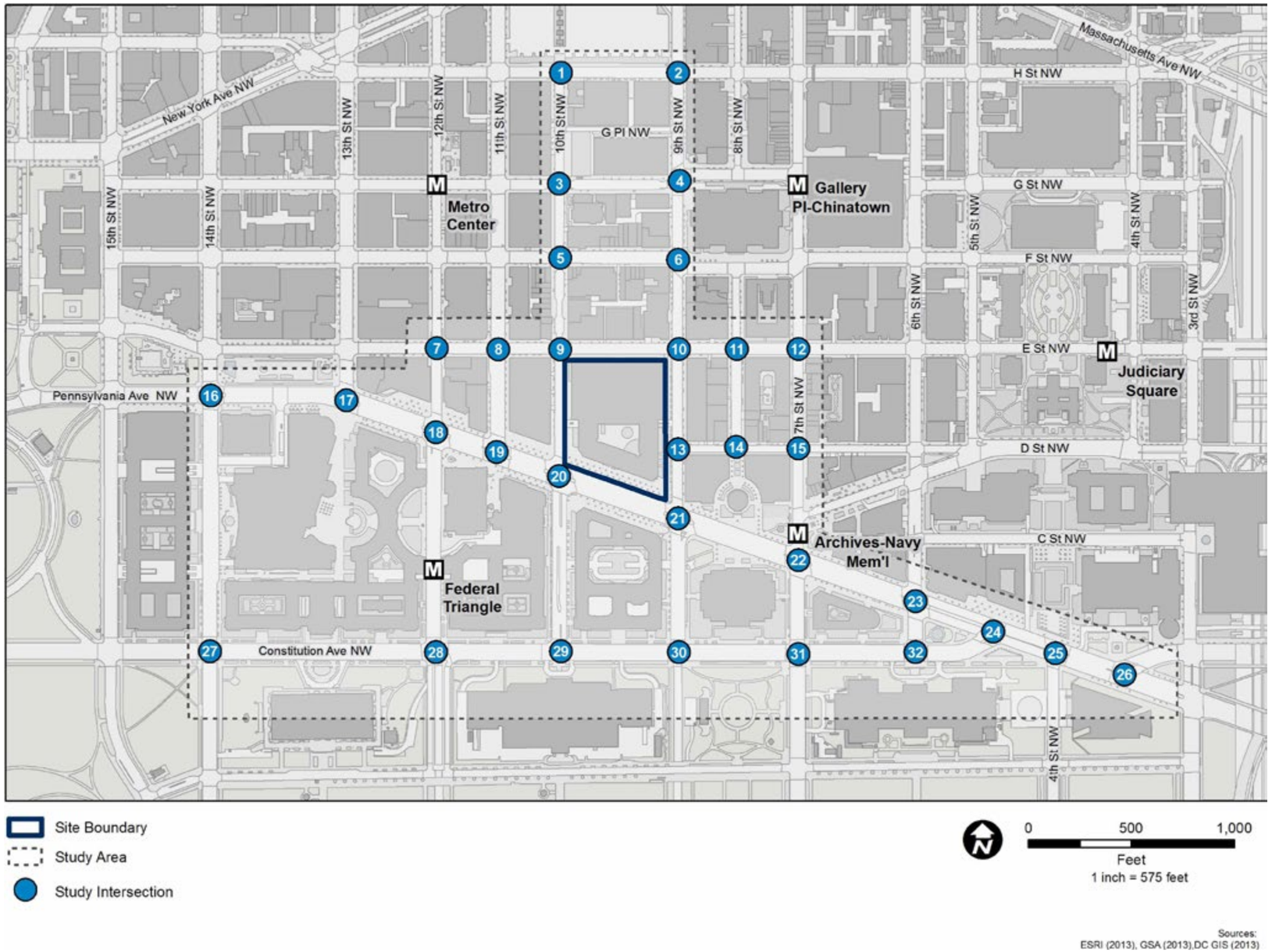
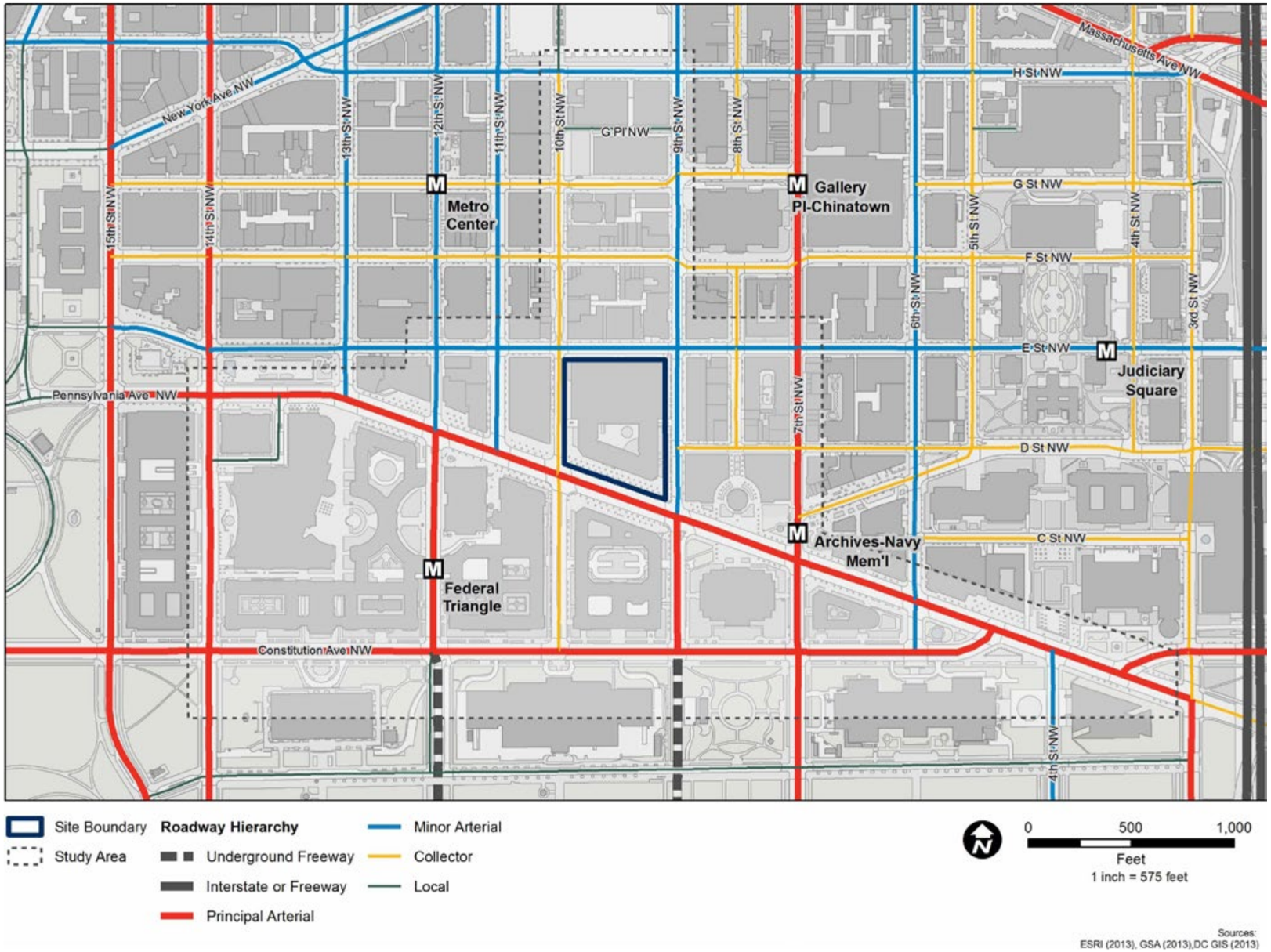


Figure 4-17: JEH Parcel Roadway Hierarchy and Classification



12th Street NW is classified by DDOT as a minor arterial from the north until Pennsylvania Avenue NW, at which point it becomes a principal arterial. Between Constitution Avenue NW and Pennsylvania Avenue NW, it is a north-south oriented, two-way roadway that operates with three lanes of northbound traffic and two lanes of southbound traffic. This stretch of 12th Street connects to the 12th Street Expressway to the south, south of Constitution Avenue near the National Mall, eventually merging with Maine Avenue SW.

Between Pennsylvania Avenue NW and E Street NW, 12th Street NW is a one-way roadway with four lanes of northbound traffic. In 2012, the AADT north of Pennsylvania Avenue NW was 15,200; south of Pennsylvania Avenue NW, it was 18,400 (DDOT 2013a).

11th Street NW is a two-way roadway that is classified by DDOT as a minor arterial. The north-south roadway carries two lanes of southbound traffic and two lanes of northbound traffic. There is ample bike infrastructure present on this street, including advance stop boxes at intersections and direction-specific bike lanes for both northbound and southbound traffic. 11th Street NW only extends for a short stretch within the study area, from E Street NW to Pennsylvania Avenue NW. In 2012, the AADT for 11th Street NW was 10,000 (DDOT 2013a).

10th Street NW is a north-south roadway that is classified by DDOT as a collector. Between Pennsylvania Avenue NW and H Street NW, 10th Street NW is a one-way, two-lane, southbound only roadway with a sporadic bike lane. However, between Pennsylvania Avenue NW and Constitution Avenue NW, 10th Street NW is a two-way roadway that varies between two and three lanes in the southbound direction and one and two lanes in the northbound direction. In 2012, 10th street NW had an AADT of 2,000 (DDOT 2013a).

9th Street NW is a one-way roadway that is classified by DDOT as a minor arterial. The roadway is oriented north-south, carries three lanes of southbound traffic, and sporadically has a bike lane or bike and bus-only lane. Between Pennsylvania Avenue NW and Constitution Avenue NW, DDOT classifies 9th Street NW as a principal arterial where it becomes a two-way roadway with four lanes of southbound traffic and one lane of northbound traffic. This roadway then leads into the below grade 9th Street Expressway and eventually connects to the Southwest Freeway/I-395. In 2012, the AADT north of the Pennsylvania Avenue NW was 16,700; it was 19,600 south of Pennsylvania Avenue NW (DDOT 2013a).

8th Street NW is a two-way roadway that is classified by DDOT as a collector. The north-south roadway has one lane in each direction and is only present in the study area for a short stretch. During the summer months, this short stretch of roadway is closed to traffic every Thursday from 1:00 PM until dark for a Farmer's Market.

7th Street NW is a two-way roadway that is classified by DDOT as a principal arterial. The roadway is north-south oriented. Between E Street NW and Pennsylvania Avenue NW, the roadway has one to two lanes of southbound traffic and two lanes of northbound traffic, with one of the northbound lanes reserved only for bikes and buses north of Indiana Avenue. However, between Pennsylvania Avenue NW and Constitution Avenue NW, the roadway width increases to three lanes of traffic in both directions. In 2012, 7th Street NW had an AADT of 15,500 (DDOT 2013a).

6th Street NW is a two-way roadway that is classified by DDOT as a minor arterial. The north-south roadway is present in the study areas for a very short stretch and has three lanes of traffic in both directions. (The AADT values for 6th Street NW are not included, because the roadway section in the study area is so small and the AADT values do not match up well with this location.)

Constitution Avenue NW is a two-way roadway that is classified by DDOT as a principal arterial. The roadway is east-west oriented and skirts the northern edge of the National Mall. Constitution Avenue NW carries four lanes of traffic in each direction. This roadway progresses into Route 50 to the west, which serves as a major regional and commuter route to Virginia. In 2012, the AADT east of the JEH parcel was 31,900; west of the JEH parcel, it was 21,800 (DDOT 2013a).

Pennsylvania Avenue NW is a two-way roadway that is classified by DDOT as a principal arterial. The roadway runs along a diagonal in a northwest to southeast orientation. Pennsylvania Avenue NW ranges from three to four lanes of traffic in both directions, although it is as narrow as two to three lanes between 13th and 15th Streets NW. In 2012, west of the JEH parcel on Pennsylvania Avenue NW, the AADT was 18,600 and east of the parcel, it was 28,900 (DDOT 2013a).

Pennsylvania Avenue NW has bike infrastructure with a two-way cycle track that runs through the central median of the roadway between 15th Street NW and 3rd Street NW. This cycle track has one lane of traffic in each direction, established turning lanes, and is clearly separated from automobile traffic through the means of Armadillo lane dividers or Park-Its (recycled rubber parking stops usually used in parking lots).

D Street NW is a two-way roadway that is classified by DDOT as a collector. The roadway is oriented east-west and extends from 9th Street NW to 7th Street NW. D Street NW has one lane of traffic in both westbound and eastbound directions, and in 2012, it had an AADT of 4,300 (DDOT 2013a).

E Street NW is a two-way roadway that is classified by DDOT as a minor arterial. The roadway is oriented east-west and has one lane of traffic in each direction with a central turning lane. This roadway has one-way bike lanes present on both westbound and eastbound lanes, and in 2012, the AADT was 10,000 (DDOT 2013a).

F Street NW is a two-way roadway that is classified by DDOT as a collector. The roadway is oriented east-west and has two lanes of traffic in each direction. Only the stretch of roadway between 10th Street NW and 9th Street NW is within the study area. In 2012, this portion of F Street NW had an AADT of 7,800 (DDOT 2013a).

G Street NW is oriented east-west and is a two-way roadway with one lane of traffic in each direction. This roadway is classified by DDOT as a collector. Only the stretch of roadway between 10th Street NW and 9th Street NW is within the study area. Portions of G Street NW have one-way bike lanes present on both eastbound and westbound lanes between 9th and 10th Streets NW. In 2012, this portion of G street NW had an AADT of 6,700 (DDOT 2013a).

H Street NW is a two-way roadway that is classified by DDOT as a minor arterial. The roadway is oriented east-west and has three lanes of traffic in each direction. Only the stretch of roadway between 10th Street NW and 9th Street NW is within the study area. In 2012, this portion of H Street had an AADT of 15,600 (DDOT 2013a).

Figure 4-18: JEH Parcel Existing Lane Geometry and Traffic Control Type

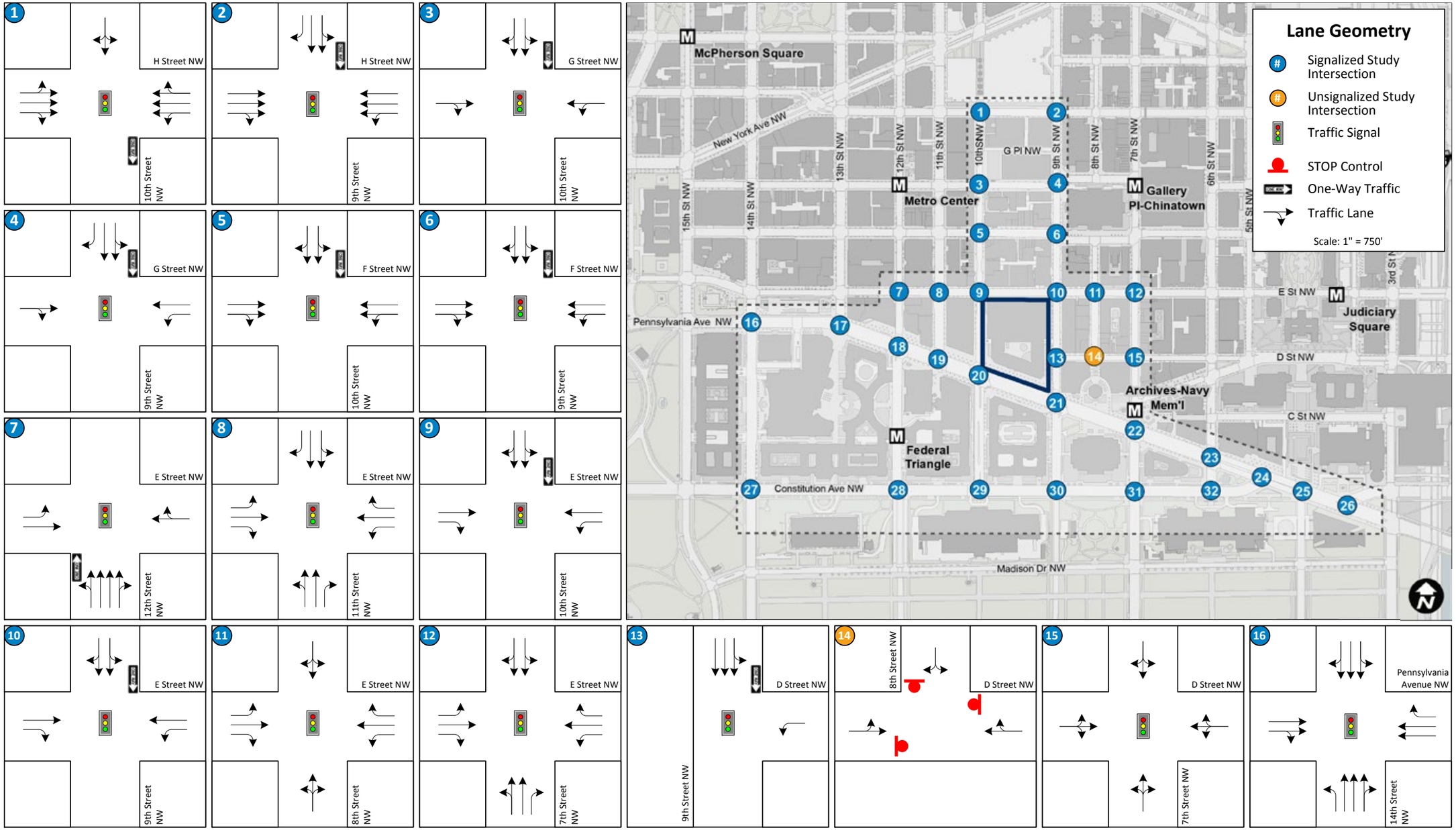


Figure 4-18: JEH Parcel Existing Lane Geometry and Traffic Control Type (continued)

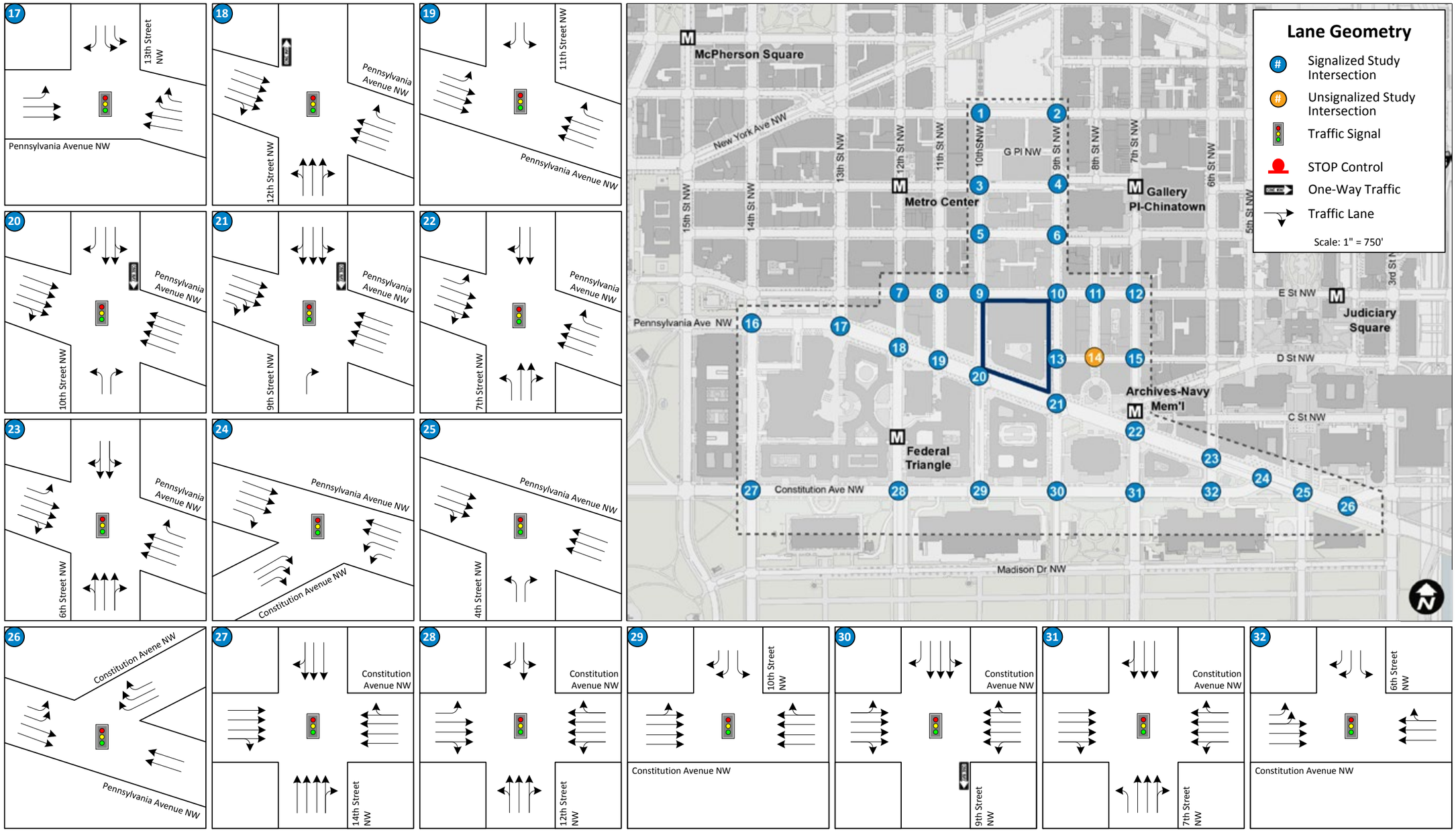


Figure 4-19: JEH Parcel Existing AM and PM Peak Hour Turning Movement Volumes

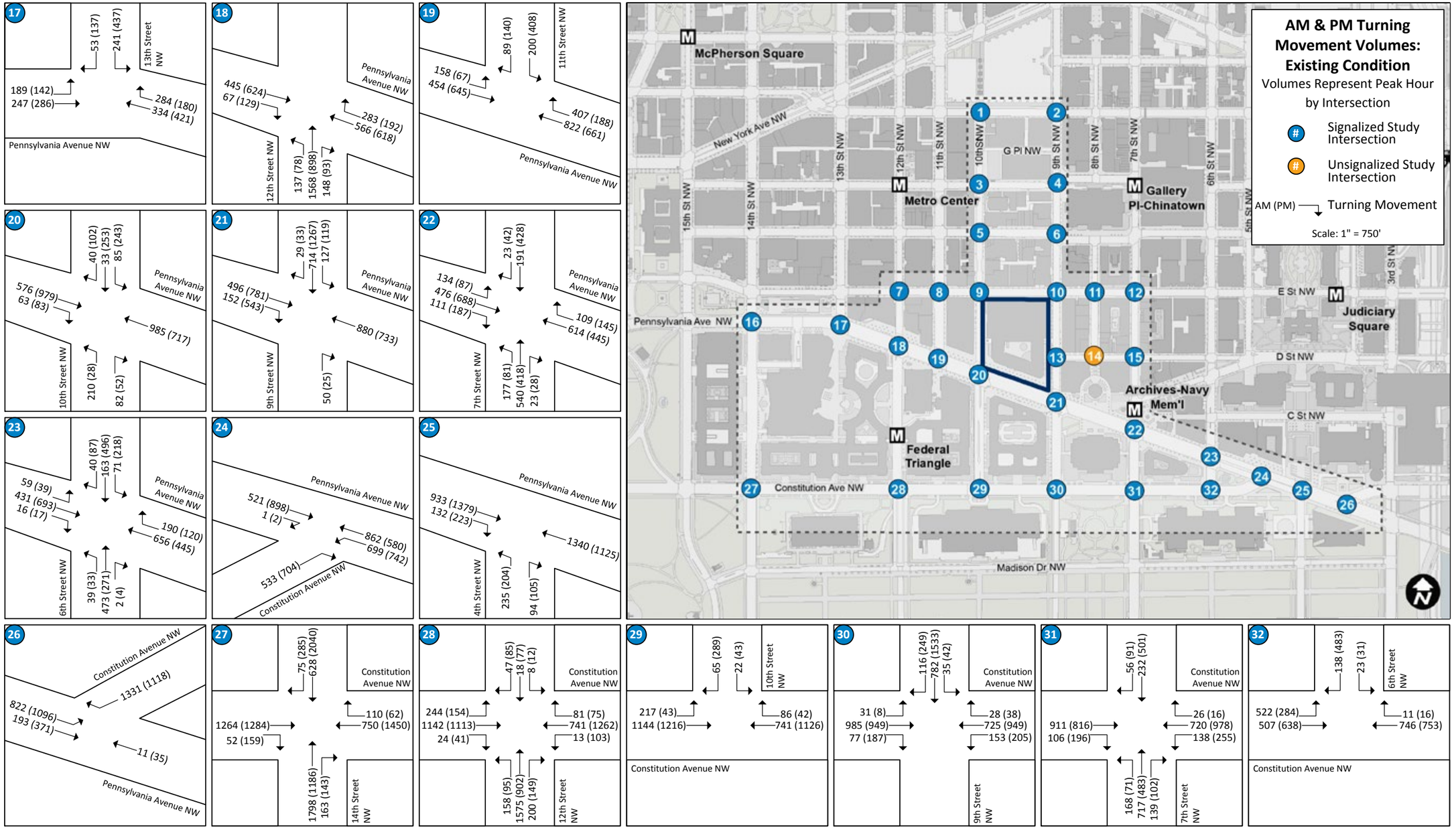
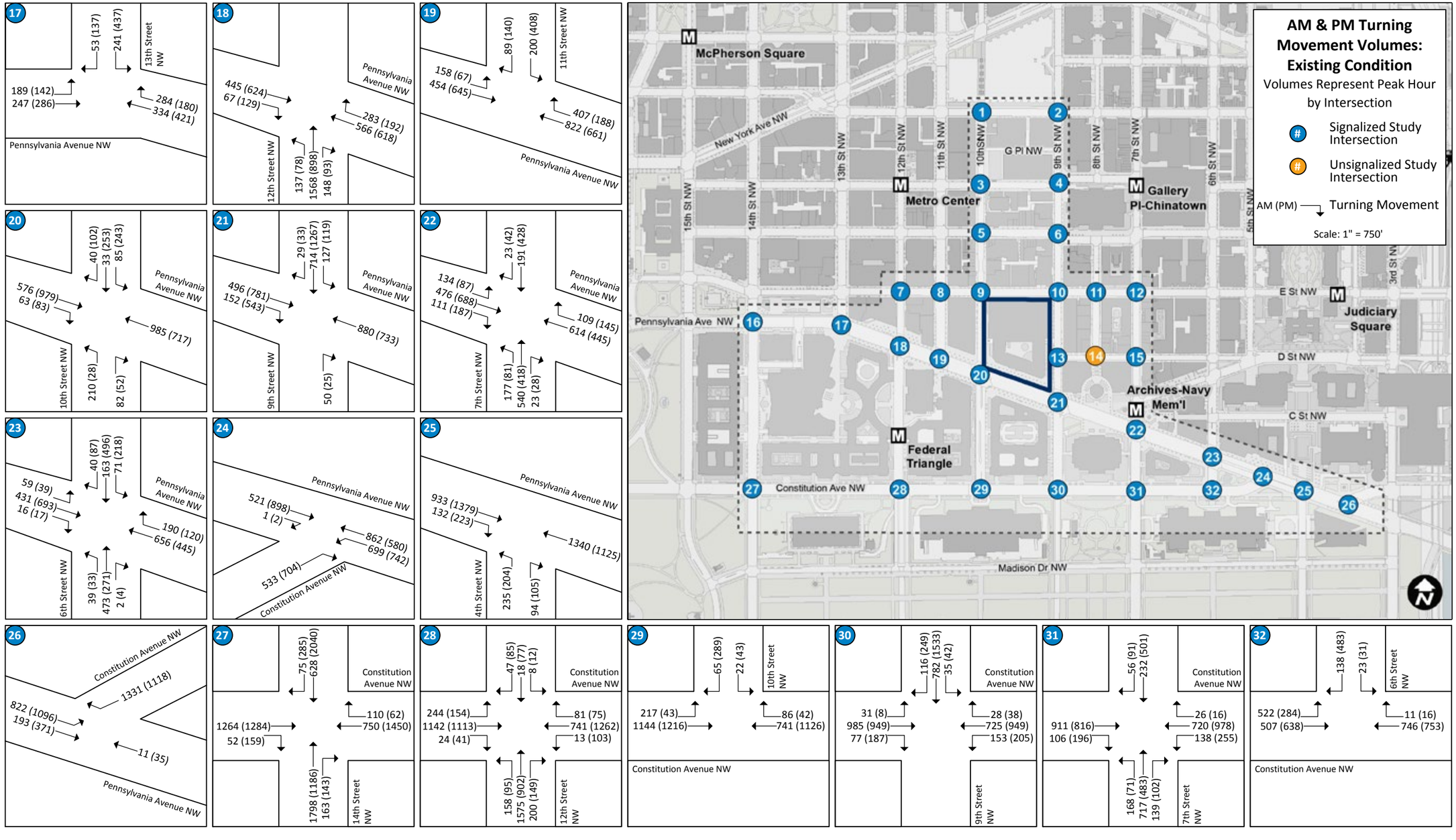


Figure 4-19: JEH Parcel Existing AM and PM Peak Hour Turning Movement Volumes (continued)



JEH PEDESTRIAN NETWORK

- Sidewalks are provided along both sides of all roads throughout the entire study area, except for areas undergoing temporary construction, and vary from the required minimum width of 2 feet to upwards of 30 feet as a result of design requirements of the PAP. Most of the site complies with ADA requirements which designate that sidewalks require a minimum width of 5.0 if setback from the curb or 6.0 feet if at the curb face.
- The study area is generally a zone of low pedestrian injury counts, however, there are a few problem intersections that have high pedestrian injury counts. Barriers and areas of concern that adversely affect pedestrian travel include narrow sidewalks along several streets, construction, and road quality.
- Pedestrian volumes in the study area are generally high in the morning during rush hour, during the lunch hour, and during the evening as commercial pedestrians mix with the dinner crowd transiting the area. The lowest pedestrian activity was during the period between the AM peak commuting hours and the lunch hour. Otherwise the area experiences regular high pedestrian activity.

4.1.9.4 Data Collection

As part of the data collection process, a detailed inventory of the lane geometry was conducted through field reconnaissance and a study of aerial imagery. Based on this information, the existing lane geometry and traffic control type (signalized or unsignalized) of intersections in the study area was assigned, as shown in figure 4-18. Section 3.10.4.1 contains a description of the data collection process and dates of collection.

To supplement existing data collected for the Old Post Office Building Redevelopment Final Environmental Assessment (GSA in cooperation with NCPC 2013a) and the Union Station to Georgetown Alternatives Analysis for Premium Transit Service (DDOT 2013b), vehicular counts from 25 intersections in the study area were collected. The data from the 25 intersections combined with the available 7 intersection vehicular counts provided the necessary data to cover all 32 study area intersections. Vehicular counts include vehicular, truck, bicycle, and pedestrian volumes. These counts were used in combination with data from the Old Post Office study (collected in April 2012) and the DC Streetcar Alternatives Analysis (collected in early 2013) to perform the Existing Condition traffic operations analyses.

As advised by DDOT and similar to other transportation studies performed for DDOT, the worst-case AM and PM weekday peak hour volumes by intersection were identified, so that a worst-case condition for traffic operations could be evaluated. Based on the various count collection periods for the study area intersections, the overall weekday AM peak hour occurs between 8:15 AM and 9:15 AM, and the weekday PM peak hour occurs between 5:00 PM and 6:00 PM. Figure 4-19 shows the existing AM and PM weekday peak hour turning movement volumes for the study area.

4.1.9.5 Pedestrian Network

Pedestrian facilities within the study area are highly used and generally adequate. A few sections of sidewalk are deficient because of width and/or accessibility per the requirements of the Americans with Disabilities Act (ADA). Facilities were considered adequate if sidewalk conditions were in decent condition (with only small amounts of overgrowth, cracks, or uneven pavement) and were at least 4 feet wide.

Sidewalk Description and Pedestrian Activity

Sidewalks are provided along both sides of all roads through the entire study area, except for areas undergoing temporary construction. Intersections within the study area generally have reasonable accommodations for pedestrians, including traffic lights and crosswalks; although, in some instances, these crosswalks are not ADA compliant (see ADA Compliance).

As mentioned in section 3.10.4.3, the minimum sidewalk width requirement, as determined by the Federal Highway Administration (FHWA), exists throughout most of the study area. Due to zoning requirements, certain stretches of sidewalk far exceed this minimum width. For example, Pennsylvania Avenue has 30-foot sidewalk sections as a result of the design requirements of the PAP and other local land use and historic preservation regulations as described in section 4.1.4. Due to the constant sidewalk width variations in downtown areas as a result of street furniture, planting strips, and vendors or restaurant seating areas, sidewalk width distances are not mapped for the JEH study area.

According to DDOT's 2009 Pedestrian Master Plan, the Downtown Business District, which contains the JEH study area, has mostly mid- to high-pedestrian activity potential. Constitution Avenue NW, 14th Street NW, 7th Street NW, and segments of Pennsylvania Avenue NW and 12th Street NW have the highest levels of pedestrian activity and subsequently are likely candidates for high pedestrian deficiency (DDOT 2009a). Therefore, this area is prioritized for further study and possible action.

This same Master Plan does not identify any streets in the study area that have "sidewalk gaps," which are defined as a missing sidewalk that is more than 10 percent of the length of the block. However, it is worth noting that there are intermittent locations within the study area that negatively impact the quality and attractiveness of pedestrian travel, including narrow sections of sidewalks north of Pennsylvania Avenue (mostly due to restaurants' outdoor seating on the sidewalks), sections of sidewalk without street trees, construction, and commercial loading areas. These deficiencies are common to urban environments.

The origins and destinations of pedestrian trips in the study area are a mix of office, retail, restaurants, and tourist attractions. During the lunch period on July 17, 2014, a high level of foot traffic to and from cafes and restaurants in the area was observed. The same level of traffic was seen during the PM peak period as commercial pedestrians mixed with the dinner crowd transiting the area. According to the Old Post Office Environmental Assessment, pedestrian volumes are also very high in the morning rush hour when commuters arrive to work (GSA in cooperation with NCPC 2013b). As observed, the area at the intersection of F Street NW and 7th Street NW also experienced an increase in foot traffic during the lunch break due to the number of food trucks that congregate in this area. Occasionally food trucks also line up along E Street NW, between 9th and 10th Streets NW, as well as along 12th Street NW near Metro Center Metro Station. The lowest pedestrian activity in the area was during the period between the AM peak commuting hours and the lunch hour. Otherwise the area experiences regular high pedestrian activity.

ADA Compliance

Sidewalks in the pedestrian network in the study area range from 2 feet wide through upwards of 30 feet in some locations. According to the ADA, there is a minimum requirement of 3-foot clearances for curb ramps connecting the sidewalk to crosswalks (USDOJ 2007). According to DDOT, ADA-compliant curb ramps are at least 4 feet wide and have detectable warnings (i.e., dome-shaped bumps) on the surface (DDOT 2009a). Figure 4-20 lays out a detailed depiction of the state of ADA compliance at crosswalks in the study area. As illustrated in figure 4-20, most of the curbs in the study area are at least partly compliant; their shortcoming is the lack of detectable warnings. The curbs in the vicinity of the JEH parcel, and the curbs in proximity to the neighboring Metrorail stations in the study area, are all wholly or partially compliant. Only four of the curb ramps within the study area are not ADA-compliant; these are all located at the intersections of Constitution Avenue NW and Pennsylvania Avenue NW (east intersection) and Constitution/Pennsylvania Avenue NW and 4th Street NW. The information for figure 4-20 was gathered during site visits on July 16 and 17, 2014.

Figure 4-20: JEH Parcel ADA Compliant Curb Ramps

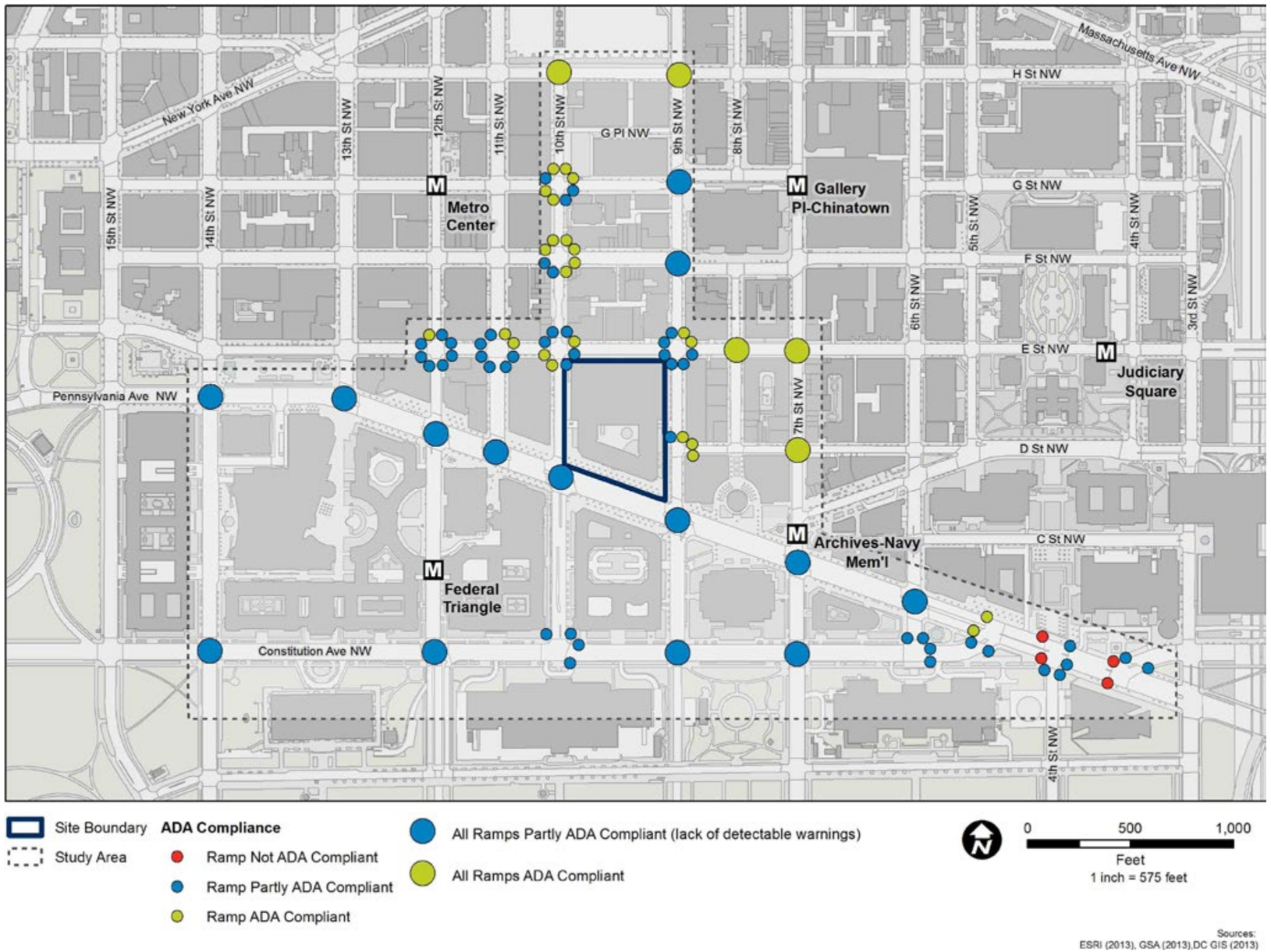
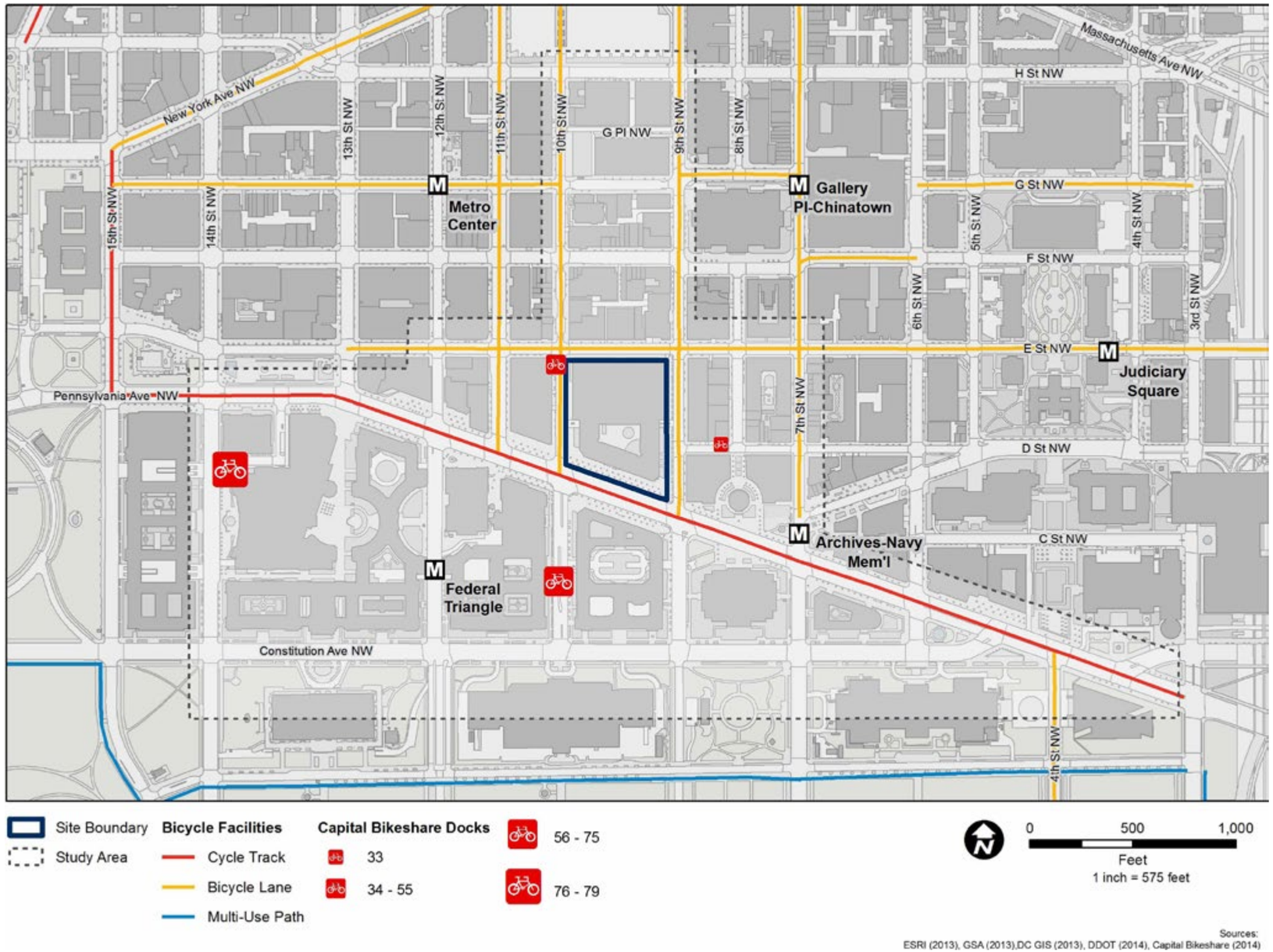


Figure 4-21: Existing Bicycle Facilities within the JEH Parcel Study Area



4.1.9.6 Bicycle Network

There are a number of bicycle facilities on roadways and Capital Bikeshare stations within the JEH parcel study area. Bicycle facilities include cycle track and bicycle lanes. Cycle tracks allow two-way bicycle travel in a marked lane that is typically separated from vehicle travel lanes by a physical barrier. Bicycle lanes are marked lanes that allow one-way bicycle travel, typically in the same direction as adjacent vehicle travel lanes. Bicycle lanes may or may not be separated from vehicle travel lanes by physical barriers. Portions of E Street NW, 11th Street NW, 10th Street NW, 9th Street NW, 7th Street NW, 4th Street NW, and G Street NW all have bicycle lanes within the study area. Additionally, Pennsylvania Avenue NW has a cycle track in the center of the roadway. The four roadways that surround the JEH parcel (9th Street NW, 10th Street NW, E Street NW, and Pennsylvania Avenue NW) all have bicycle facilities. Table 4-11 and figure 4-21 summarize bicycle facilities in the study area.

There is one major gap in bicycle facilities within the study area. There are no north-south facilities between Pennsylvania Avenue NW and Constitution Avenue NW that connect to the trails along the National Mall. The reasons for this may include the lack of roadway space to stripe a bicycle lane, Federal building set-back requirements, or heavy traffic volumes (DDOT 2005).

Within 2 miles of the JEH parcel there are numerous bicycle accommodations, including several shared use paths along the National Mall, the Rock Creek Trail, the Metropolitan Branch Trail, and the Mount Vernon Trail in Arlington, Virginia. Appendix B has further details on bicycle accommodations within 2 miles of the site.

Capital Bikeshare

There are five Capital Bikeshare stations within the study area for the JEH parcel. Capital Bikeshare was launched in 2010 and currently has 326 stations in Washington, D.C.; Arlington County, Virginia; Alexandria, Virginia; and Montgomery County, Maryland. Capital Bikeshare is often used as a "last mile" connection between transit stations or stops and users' places of work or living. The system is created to support one-way trips; a bicycle is picked up at one location and dropped off at another, without a need to secure the bike in-between trips or make a return trip to the same starting point. Table 4-12 and figure 4-21 summarize these stations, their distance to the JEH parcel, and the number of bicycle docks available at each.

The JEH TIA (Appendix B) contains the Capital Bikeshare trip purpose, ridership patterns, and station use.

Table 4-11:Existing Bicycle Facilities within the JEH Parcel Study Area

Street Name	Limits in Study Area	Type
Pennsylvania Avenue NW	West of Constitution Avenue	Cycle track
E Street NW	Through entire study area	Bicycle lane
11th Street NW	North of Pennsylvania Avenue	Bicycle lane
10th Street NW	North of Pennsylvania Avenue	Bicycle lane
9th Street NW	North of Pennsylvania Avenue	Bicycle lane
7th Street NW	North of Indiana Avenue	Bicycle lane
4th Street NW	South of Pennsylvania Avenue	Bicycle lane
G Street NW	East of 9th Street and west of 10th Street	Bicycle lane

Source: DC GIS (2014)

Table 4-12: Capital Bikeshare Stations within the JEH Parcel Study Area

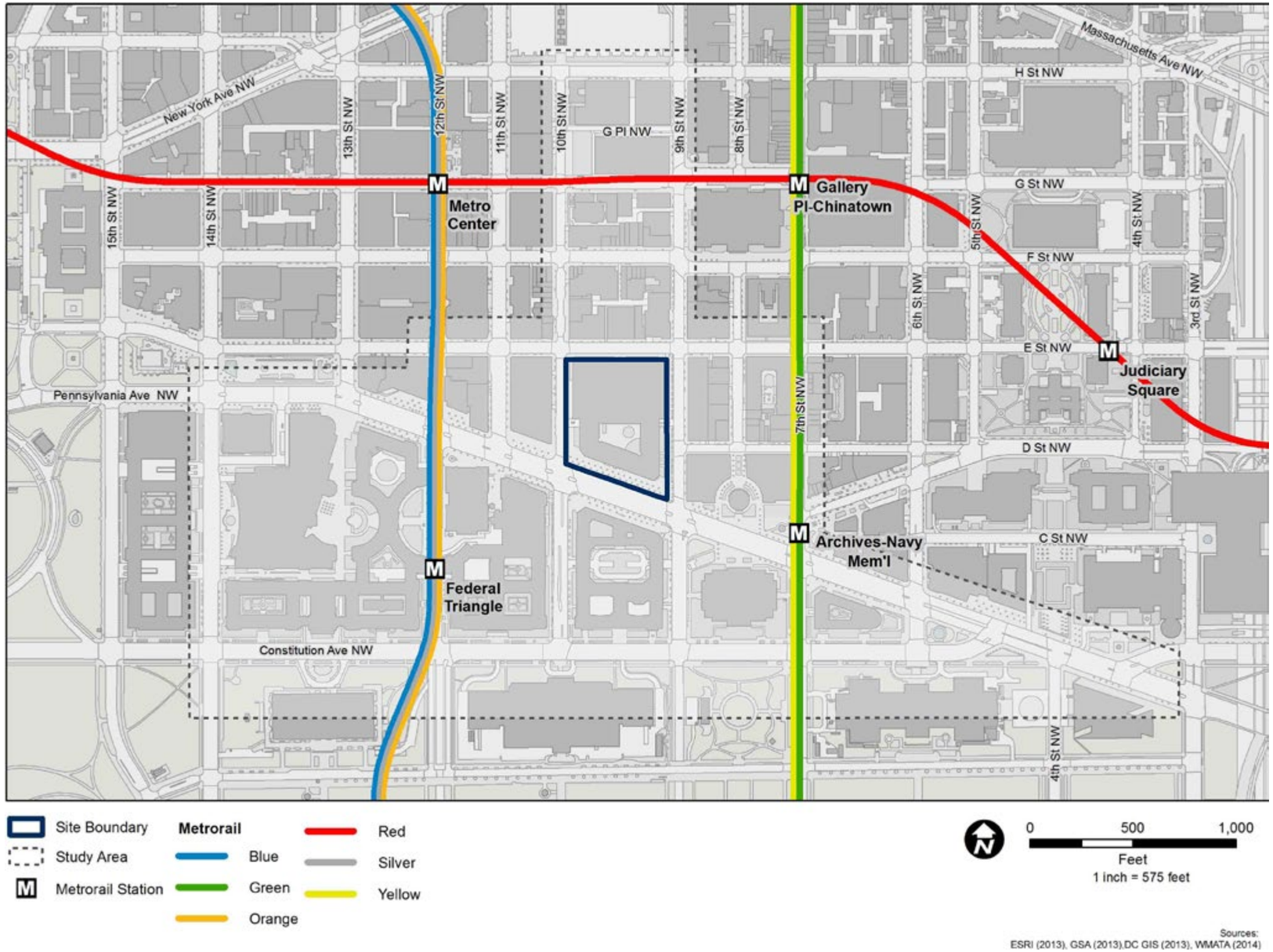
Station	Number of Docks	Distance to JEH (miles)
10th Street & E Street NW	15	0.05
10th Street & Constitution Avenue NW	29	0.1
14th Street & D Street NW (Ronald Reagan Building)	21	0.4
8th Street & D Street NW	15	0.05
9th Street & G Street NW (Martin Luther King Jr Library)	23	0.25

Source: Capital Bikeshare Station (2014)

JEH BICYCLE NETWORK

- Portions of E Street NW, 11th Street NW, 10th Street NW, 9th Street NW, 7th Street NW, 4th Street NW, and G Street NW all have bicycle lanes within the study area. Additionally, Pennsylvania Avenue NW has a cycle track in the center of the roadway
- The major gap in bicycle facilities with in the study area is the lack of north-south facilities between Pennsylvania Avenue NW and Constitution Avenue NW that connect to trails along the National Mall.
- Bicycle accommodations within the 2 miles of the JEH parcel include Capital Bikeshare, shared use paths along the National Mall, the Rock Creek Trail, the Metropolitan Branch Trail, and the Mount Vernon Trail in Arlington.

Figure 4-22: Metrorail Station Entrances in the JEH Parcel Study Area



4.1.9.7 Public Transit

This section describes the existing conditions of Metrorail, Metrobus, commuter bus, carshare facilities, slugging (casual ridesharing), and shuttles within the JEH study area. Of these modes, Metrobus and Metrorail potentially have capacity issues within the study area.

Metrorail

The JEH parcel is served by all 6 Metrorail lines via 4 Metrorail stations located in the study area. The four Metrorail stations serving the JEH parcel are Archives-Navy Memorial, Federal Triangle, Metro Center, and Gallery Place-Chinatown. Table 4-13 and figure 4-22 summarize entrance locations and lines served for each station in the study area.

Metrorail Station Frequency of Service

Metrorail service operates on all lines between 5:00 AM and 12:00 AM, Monday through Thursday, 5:00 AM and 3:00 AM on Fridays, 7:00 AM and 3:00 AM on Saturdays, and 7:00 AM and 12:00 AM on Sundays (WMATA 2014b). Peak frequencies vary between 3 and 12 minutes on all lines, while off-peak frequencies vary between 6 and 20 minutes. Several lines share tracks through the study area, including the Orange, Blue, and Silver lines (Metro Center and Federal Triangle), and the Green and Yellow lines (Gallery Place-Chinatown and Archives-Navy Memorial).

Archives-Navy Memorial Metro Station

The Archives-Navy Memorial Metro Station is served by the Green and Yellow lines. Peak headways on the Green and Yellow lines create an effective headway of 3 minutes if trains are on time. A total of 20 Green and Yellow line trains are scheduled to serve the station every hour, with 6-minute headways each on the Green and Yellow lines. Midday, evening, and Saturday daytime periods all have 12-minute scheduled headways on each line. Table 4-14 summarizes Metrorail headways and timespan by line at Archives-Navy Memorial Metro Station.

Table 4-13: Metrorail Stations and Lines in the JEH Parcel Study Area

Metrorail Station	Entrances	Lines
Archives-Navy Memorial	7th/ Pennsylvania	Green/ Yellow
Federal Triangle	12th south of Pennsylvania	Blue/ Orange/ Silver
Gallery Place-Chinatown	7th/F, 7th/H, 9th/G	Red/ Green/ Yellow
Metro Center	11th/G, 12th/G, 12th/F, 13th/G	Red/Blue/ Orange/ Silver

Source: WMATA (2014c)

Table 4-14: Archives-Navy Memorial Metrorail Headway and Timespan

Day	Timespan	Period	Headways (Minutes)		
			Green	Yellow	Green & Yellow Effective Headway
Weekday	5:00 AM – 9:30 AM 3:00 PM – 7:00 PM	Peak	6	6	3
	9:30 AM – 3:00 PM	Midday	12	12	6
	7:00 PM – 9:30 PM	Evening	12	12	6
	9:30 PM – 12:00 AM[a]	Late night	20	20	10
Saturday	7:00 AM – 9:30 PM	Daytime	12	12	6
	9:30 PM – 3:00 AM	Late night	20	20	10
Sunday	7:00 AM – 9:30 PM	Daytime	15	15	7.5
	9:30 PM – 12:00 AM	Late night	20	20	10

[a] *Service is extended to 3:00 AM on Fridays*

Note: Effective headways are calculated by dividing an hour (60 minutes) by the total number of trains that are scheduled to serve the station during an hour. For example, on morning weekday trips, 6 minute headway = 10 trains/hour. For an effective headway of Green and Yellow lines (2 lines @ 6 minute headways each), 10 trains/hour x 2 lines = 20 trains/hour and 60 ÷ 20 = 3 minute effective headways.

Source: WMATA (2014b)

JEH PUBLIC TRANSIT

- Public transportation facilities in the study area include Metrorail, Metrobus, commuter bus, carshare facilities, slugging (casual ridesharing), and shuttle. Of these modes, Metrobus and Metrorail potentially have capacity issues within the study area.
- Several lines of the Metrorail share tracks within the study area, including the Orange, Blue, and Silver lines (Metro Center and Federal Triangle), and the Green and Yellow lines (Gallery Place-Chinatown and Archives-Navy Memorial).
- There are 35 Metrobus routes that serve the JEH parcel study area on weekdays serving the District as well as Silver Spring, Maryland; Prince George's County, Maryland; Arlington County, Virginia; Fairfax County, Virginia; and Alexandria, Virginia.
- Commuter bus service to the study area is provided by four different transit agencies: Maryland Transit Administration (MTA), MARTZ, Potomac-Rappahannock Transit Commission (PRTC), and Loudoun County Transit (LCT).

Table 4-15: Federal Triangle Metrorail Headway and Timespan

Day	Timespan	Period	Headways (Minutes)			
			Orange	Silver	Blue	Orange, Blue & Silver Effective Headway
Weekday	5:00 AM – 9:30 AM 3:00 PM – 7:00 PM	Peak	6	6	12	2.5
	9:30 AM – 3:00 PM	Midday	12	12	12	4
	7:00 PM – 9:30 PM	Evening	12	12	12	4
	9:30 PM – 12:00 AM[a]	Late night	20	20	20	7
Saturday	7:00 AM – 9:30 PM	Daytime	12	12	12	4
	9:30 PM – 3:00 AM	Late night	20	20	20	7
Sunday	7:00 AM – 9:30 PM	Daytime	15	15	15	5
	9:30 PM – 12:00 AM	Late night	20	20	20	7

[a] *Service is extended to 3:00 AM on Fridays*
Note: Effective headways are calculated by dividing an hour (60 minutes) by the total number of trains that are scheduled to serve the station during an hour. For example, on midday weekday trips, 12 minute headway = 5 trains|hour. For an effective headway of Orange, Blue, and Silver lines (3 lines @ 12 minute headways each), 5 trains|hour x 3 lines = 15 trains|hour and 60 ÷ 15 = 4 minute effective headways

Source: WMATA (2014b)

Federal Triangle Metro Station

The Federal Triangle Metro Station is served by the Orange, Silver, and Blue lines, which all share a single platform. Peak headways on these three lines create an effective headway of 2.5 minutes if trains are on time. A total of 25 Orange, Silver, and Blue line trains are scheduled to serve the station every hour, with 6-minute scheduled headways on the Orange and Silver lines and 12-minute scheduled headways on the Blue line. Midday, evening, and Saturday daytime periods all have 12-minute headways on each line. Table 4-15 summarizes Metrorail headways and timespan by line at the Federal Triangle Metro Station.

Metro Center Metro Station

The Metro Center Metro Station is served by the Red, Orange, Silver, and Blue lines. The Red line operates on the upper platform, while the Orange, Blue, and Silver lines operate on the lower platform. Peak headways on the Red Line are scheduled to be three minutes, with every other train only operating between Silver Spring and Grosvenor-Strathmore Metro stations. All other trains operate the full length of the line between Glenmont and Shady Grove. Peak headways on the Orange, Silver, and Blue lines create an effective headway of 2.5 minutes if trains are on time. A total of 25 Orange, Silver, and Blue line trains are scheduled to serve the station every hour. Orange and Silver line trains are scheduled to serve the station every 6 minutes, and Blue line trains are scheduled to serve the station every 12 minutes. Table 4-16 summarizes Metrorail headways and timespan by line at Metro Center Metro Station.

Table 4-16: Metro Center Metrorail Headway and Timespan

Day	Timespan	Period	Headways (Minutes)				
			Red	Orange	Silver	Blue	Orange, Blue & Silver Effective Headway
Weekday	5:00 AM – 9:30 AM 3:00 PM – 7:00 PM	Peak	3	6	6	12	2.5
	9:30 AM – 3:00 PM	Midday	12	12	12	12	4
	7:00 PM – 9:30 PM	Evening	6-10	12	12	12	4
	9:30 PM – 12:00 AM[a]	Late night	15-18	20	20	20	7
Saturday	7:00 AM – 9:30 PM	Daytime	12	12	12	12	4
	9:30 PM – 3:00 AM	Late night	15	20	20	20	7
Sunday	7:00 AM – 9:30 PM	Daytime	15	15	15	15	5
	9:30 PM – 12:00 AM	Late night	15	20	20	20	7

[a] *Service is extended to 3:00 AM on Fridays*
Note: Effective headways are calculated by dividing an hour (60 minutes) by the total number of trains that are scheduled to serve the station during an hour. For example, on midday weekday trips, 12 minute headway = 5 trains|hour. For an effective headway of Orange, Blue, and Silver lines (3 lines @ 12 minute headways each), 5 trains|hour x 3 lines = 15 trains|hour and 60 ÷ 15 = 4 minute effective headways.

Source: WMATA (2014b)

Gallery Place-Chinatown Metro Station

The Gallery Place-Chinatown Metro Station is served by the Red, Green, and Yellow lines. The Red line operates on the upper platform, while the Green and Yellow lines operate on the lower platform. Peak headways on the Red line are scheduled to be three minutes, with every other train only operating between Silver Spring and Grosvenor-Strathmore Metro stations. All other trains operate the full length of the line between Glenmont and Shady Grove. Peak headways on the Green and Yellow lines create an effective headway of 3 minutes if trains are on time. A total of 20 Green and Yellow line trains are scheduled to serve the station every hour, with scheduled 6-minute headways each on the Green and Yellow lines. Table 4-17 summarizes Metrorail headways and timespan by line at Gallery Place-Chinatown Metro Station.

Table 4-17: Gallery Place-Chinatown Metrorail Headway and Timespan

Day	Timespan	Period	Headways (Minutes)			
			Red	Green	Yellow	Green & Yellow Effective Headway
Weekday	5:00 AM – 9:30 AM 3:00 PM – 7:00 PM	Peak	3	6	6	3
	9:30 AM – 3:00 PM	Midday	12	12	12	6
	7:00 PM – 9:30 PM	Evening	6-10	12	12	6
	9:30 PM – 12:00 AM[a]	Late night	15-18	20	20	10
Saturday	7:00 AM – 9:30 PM	Daytime	12	12	12	6
	9:30 PM – 3:00 AM	Late night	15	20	20	10
Sunday	7:00 AM – 9:30 PM	Daytime	15	15	15	7.5
	9:30 PM – 12:00 AM	Late night	15	20	20	10

[a] Service is extended to 3:00 AM on Fridays
Note: Effective headways are calculated by dividing an hour (60 minutes) by the total number of trains that are scheduled to serve the station during an hour. For example, on morning weekday trips, 6 minute headway = 10 trains/hour. For an effective headway of Green and Yellow lines (2 lines @ 6 minute headways each), 10 trains/hour x 2 lines = 20 trains/hour and 60 ÷ 20 = 3 minute effective headways.

Source: WMATA (2014b)

Ridership

The following sections describe Metrorail ridership at each of the Metrorail stations in the transit study area.

Weekday Ridership by Station

Weekday Metrorail ridership for the four stations in the study area was obtained for October 2013 and March 2014 from WMATA (WMATA 2014d). Table 4-18 shows average weekday Metrorail ridership for the four stations by entries and exits, highlighting peak periods. WMATA defines the AM peak period as 5:00 AM to 9:30 AM and the PM peak period as 3:00 PM to 7:00 PM. Gallery Place-Chinatown and Metro Center are among the busiest stations in the system, each with more than 23,000 average weekday passengers.

Metro Center has the highest weekday total ridership with 50,029 entries and exits, followed by Gallery Place-Chinatown with 48,107, Archives-Navy Memorial with 15,208, and Federal Triangle with 14,025. Within the study area, Metro Center represents 39 percent of all weekday activity, Gallery Place-Chinatown represents 38 percent, Archives-Navy Memorial represents 12 percent, and Federal Triangle represents 11 percent.

Table 4-18: JEH Parcel Average Weekday Metrorail Ridership by Metro Station

Entrance	AM Peak (5:00 AM – 9:30 AM)		PM Peak (3:00 PM – 7:00 PM)		Weekday Total	
	Enter	Exit	Enter	Exit	Enter	Exit
Archives-Navy Memorial	350	4,339	4,828	883	7,535	7,673
Federal Triangle	165	4,506	4,887	562	6,982	7,043
Gallery Place-Chinatown	1,648	8,611	10,458	6,890	23,875	24,232
Metro Center	1,439	12,206	13,772	4,431	24,839	25,190

Source: WMATA (2014d)

Table 4-19: JEH Parcel Proportion of Weekday Entries and Exit Taking Place during Peak Periods

Metrorail Station Entrance	Peak Enter Percent	Peak Exit Percent
Archives-Navy Memorial	69	68
Federal Triangle	72	72
Gallery Place-Chinatown	51	64
Metro Center	61	66

Source: WMATA (2014d)

Table 4-20: JEH Parcel Peak Period Entries and Exits Proportion of Weekday Total Activity

Metrorail Station Entrance	AM Peak (5:00AM - 9:30AM)		PM Peak (3:00PM - 7:00PM)	
	Percent Enter	Percent Exit	Percent Enter	Percent Exit
Archives-Navy Memorial	8	93	16	85
Federal Triangle	4	97	90	10
Gallery Place-China-town	16	84	24	76
Metro Center	11	90	40	60

Source: WMATA (2014d)

All four stations have a significantly higher number of passengers exiting the station than entering the station during the AM peak period, with an opposite pattern during the PM peak period. This is consistent with stations located in high-employment downtown settings.

Peak period activity represents 63 percent of all four stations' total weekday activity. At Federal Triangle, peak period activity represents 72 percent of weekday total activity. At Archives-Navy Memorial, peak period activity represents 68 percent of weekday total activity. At Metro Center and Gallery Place-Chinatown, peak period activity represents 64 and 57 percent of weekday total activity, respectively. Table 4-20 summarizes the total weekday peak activity at each station. Table 4-19 summarizes the proportion of entries versus exits during each peak period at each station.

Weekday Ridership by Station Entrance

Table 4-21 shows the weekday ridership by station entrance for the peak periods and weekday totals. Metro Center has four entrances, Gallery Place-Chinatown has three entrances, and Archives-Navy Memorial and Federal Triangle each have one entrance.

The highest total weekday ridership activity occurs at the Gallery Place North, Gallery Place East, and Metro Center West entrances. Gallery Place North represents 18 percent of the weekday total ridership for entrances at the four stations, while Gallery Place East and Metro Center West each represent 13 percent. However, Gallery Place North is the farthest station entrance from the JEH building and is likely not used to access the study area. Archives Metro Station, the closest station entrance to the JEH building, represents the fourth highest weekday total ridership at 12 percent. Figure 4-23 illustrates AM peak entries and exits by station entrance.

Table 4-21: JEH Parcel Weekday Metrorail Ridership by Metrorail Station Entrance

Entrance	Location	AM Peak		PM Peak		Weekday Total	
		Enter	Exit	Enter	Exit	Enter	Exit
Archives-Navy Memorial	7th/Pennsylvania	350	4,339	4,828	883	7,535	7,673
Federal Triangle	12th S of Pennsylvania	165	4,506	4,887	562	6,982	7,043
Gallery Place-Chinatown, E	7th/F	299	2,641	3,217	2,965	7,828	8,885
Gallery Place-Chinatown, N	7th/H	1,226	3,929	4,849	3,074	11,916	10,971
Gallery Place-Chinatown, W	9th/G	123	2,041	2,392	851	4,131	4,376
Metro Center, E	11th/G	467	3,051	3,491	1,144	6,640	6,270
Metro Center, N	12th/G	415	1,781	2,454	951	4,534	4,358
Metro Center, S	12th/F	223	2,828	2,969	1,218	5,669	6,279
Metro Center, W	13th/G	335	4,547	4,858	1,119	7,995	8,283

Source: WMATA (2014d)

Metrorail Station Capacity Analysis

As stated in section 3.10.4.3, a capacity analysis was conducted at Archives-Navy Memorial and Federal Triangle Metro Stations, as well as the south and east entrances to Metro Center and the east and west entrances at Gallery Place-Chinatown. The analysis used the peak 15-minute period of entries and exits at each station according to March 2014 faregate data provided by WMATA. March or October data are commonly used by transit agencies for analysis because these are considered stable months that are affected less by tourism, weather, and holidays when compared to other months. Volume-to-capacity (v/c) ratios were calculated for the vertical elements and fare elements, and pedestrian level of service (LOS) was calculated for platform areas. The results of the station capacity analysis, with complete station capacity analysis details, is included in the JEH Transportation Impact Assessment (TIA) (Appendix B).

Overall, vertical elements and faregate aisles at each station are currently operating below a v/c of 0.7, which is considered capacity. Fare vending machines are operating above capacity at the east and west entrances to Gallery Place-Chinatown, and the south entrance to Metro Center.

Platform peak pedestrian LOS (based on the available spacing between passengers) on the busiest platform sections are at the acceptable level of B at Archives-Navy Memorial, Federal Triangle, on the Green/Yellow platform at Gallery Place-Chinatown, and on the Blue/Orange/Silver platform at Metro Center. The Red-Glenmont and Red-Shady Grove platforms at Gallery Place-Chinatown and Metro Center, however, are currently at pedestrian LOS C or D on the busiest platform sections.

The JEH TIA (Appendix B) contains the Metrorail station vertical and fare infrastructure, Metrorail station mode of access, Metrorail station parking inventory, National Fire Protection Association 130 emergency evacuation analysis, Metrorail origin-destination data, weekday ridership by station entrance, and peak hourly and peak 15-minute ridership by station entrance.

Figure 4-23: JEH Parcel Peak Period (AM) Entries and Exits by Metrorail Station Entrance

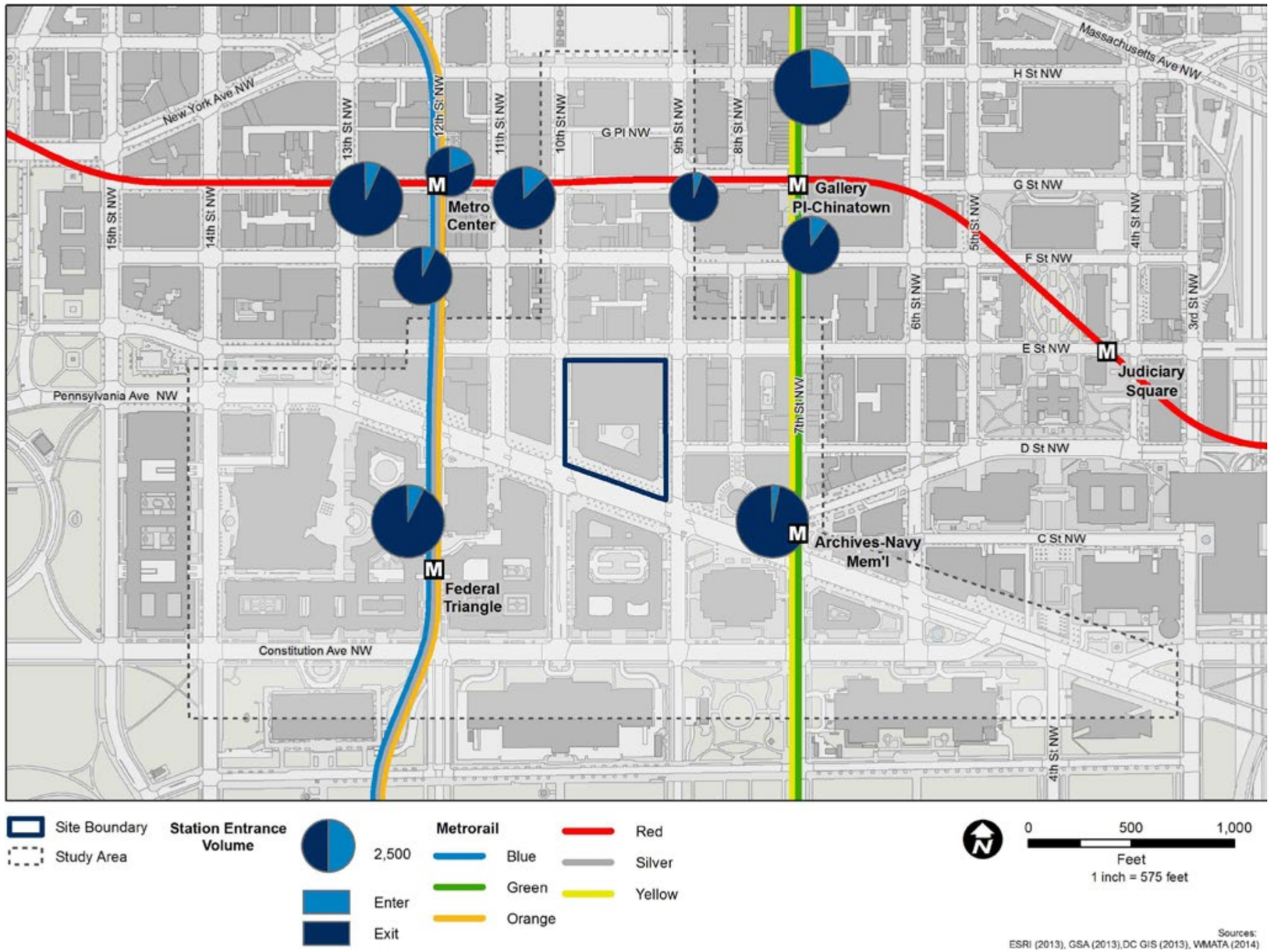


Table 4-22: Metrobus Routes Serving the JEH Parcel Study Area

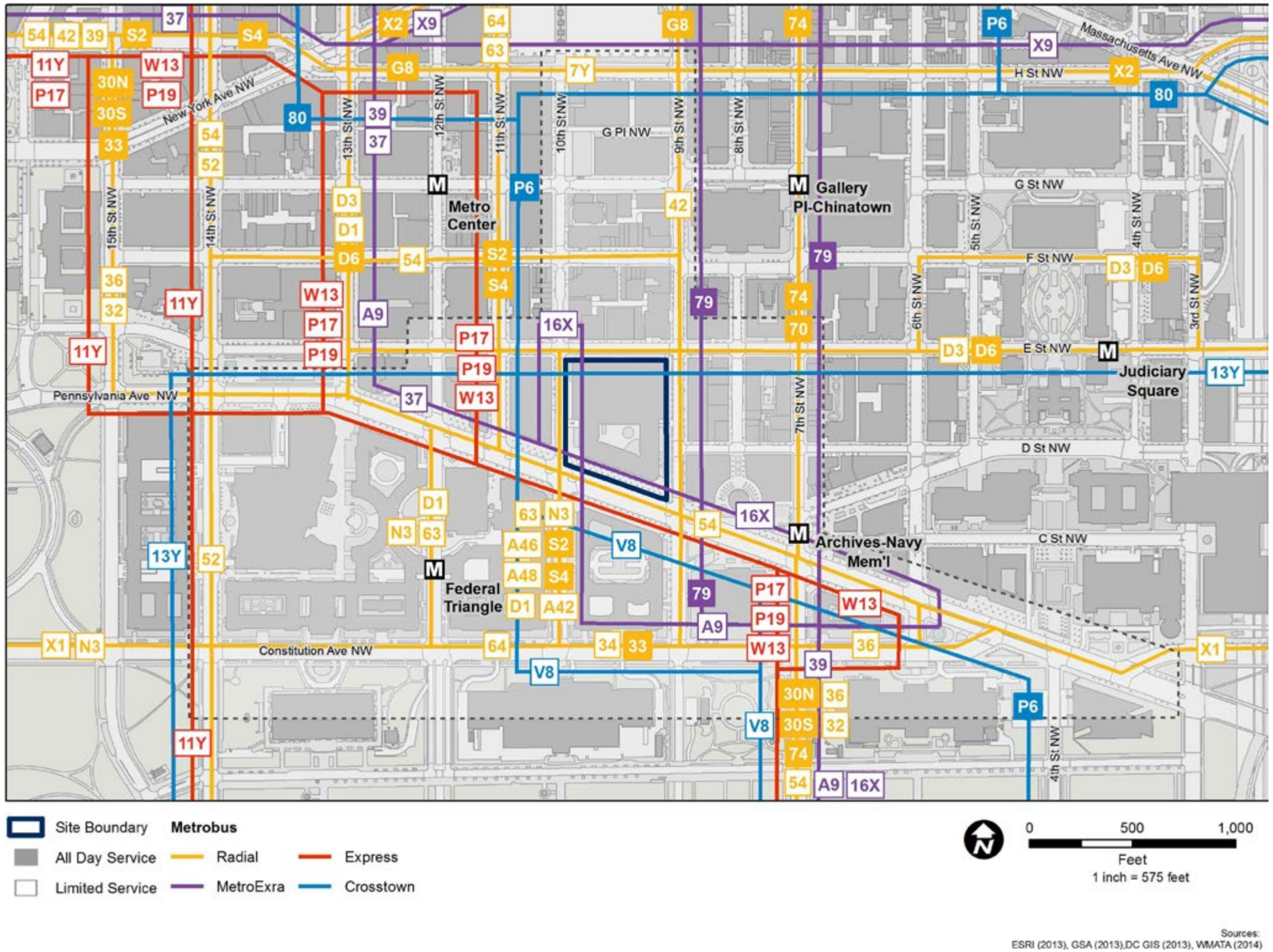
Route	Description	Stop Serving JEH Building	Major Destinations
Washington, D.C			
32	Pennsylvania Avenue Line	10th/Pennsylvania	Foggy Bottom, Pennsylvania Ave NW/SE, Southern Ave
34	Naylor Road Line	10th/Pennsylvania	Archives, Naylor Road
36	Pennsylvania Avenue Line	10th/Pennsylvania	Foggy Bottom, Pennsylvania Ave NW/SE, Naylor Rd
37	Wisconsin Avenue Limited Line	10th/Pennsylvania	Friendship Heights, Wisconsin Ave NW, Archives
39	Pennsylvania Avenue Limited Line	7th/Pennsylvania	Foggy Bottom, Pennsylvania Ave SE, Naylor Rd
42	Mount Pleasant Line	9th/F	Mt Pleasant, Connecticut Ave NW, Downtown
52	14th Street Line	14th/D	Takoma, 14th St NW, L'Enfant Plaza
54	14th Street Line	10th/Pennsylvania	Takoma, 14th St NW, L'Enfant Plaza
63	Takoma - Petworth Line	11th/E	Takoma, Petworth, Federal Triangle
64	Fort Totten - Petworth Line	11th/E	Fort Totten, 11th St NW, Federal Triangle
74	Convention Center - Southwest Waterfront Line	7th/Pennsylvania	Waterfront, 7th St SW/NW, Convention Center
80	North Capitol Street Line	9th/H	Fort Totten, Brookland, Union Station, Metro Center, Foggy Bottom
A42	Anacostia - Congress Heights Line	10th/Pennsylvania	Southern Ave, Anacostia, M St SE, Archives
A46	Anacostia - Congress Heights Line	10th/Pennsylvania	Southern Ave, Anacostia, M St SE, Archives
A48	Anacostia - Congress Heights Line	10th/Pennsylvania	Congress Heights, Anacostia, M St SE, Archives
A9	M.L. King Jr. Avenue Limited Line	12th/Pennsylvania	Livingston, MLK Jr Ave SE, M St SE, McPherson Square
D1	Glover Park - Federal Triangle Line	10th/Pennsylvania	Glover Park, Dupont Circle, Federal Triangle
D3	Ivy City - Dupont Circle Line	10th/E	Georgetown, Dupont Circle, Downtown, Ivy City
D6	Sibley Hospital - Stadium-Armory Line	10th/E	Sibley Hospital, Georgetown, Dupont Circle, Downtown, Stadium-Armory
G8	Rhode Island Avenue Line	9th/H	Brookland, Rhode Island Ave NE, Farragut Square
N3	Massachusetts Avenue Line	10th/Pennsylvania	Friendship Heights, Massachusetts Ave NW, Dupont Circle, Federal Triangle
P6	Anacostia - Eckington Line	10th/Pennsylvania	Anacostia, M St SE, Archives, Eckington
V8	Minnesota Ave – M Street Line	7th/Pennsylvania	Deanwood, Minnesota Ave NE/SE, M Street SE, Smithsonian, Archives
X1	Benning Road Line	10th/Constitution	Minnesota Ave, Union Station, Federal Triangle, Foggy Bottom
X2	Benning Road - H Street Line	9th/H	Minnesota Ave, Benning Rd/H St NE, McPherson Square
X9	Benning Road - H Street Express Line	9th/H	Capitol Heights, Minnesota Ave, Benning Rd/H St NE, Metro Center

Table 4-22: Metrobus Routes Serving the JEH Parcel Study Area (continued)

Route	Description	Stop Serving JEH Building	Major Destinations
Washington, D.C. & Silver Spring, Maryland			
70	Georgia Avenue - 7th Street Line	7th/Pennsylvania	Silver Spring, Georgia Ave NW, Archives
79	Georgia Avenue Metro Extra Line	7th/Pennsylvania	Silver Spring, Georgia Ave NW, Archives
S2	16th Street Line	11th/E	Silver Spring, 16th St NW, Federal Triangle
S4	16th Street Line	11th/E	Silver Spring, 16th St NW, Federal Triangle
Prince George's County, Maryland			
W13	Bock Road Line	10th/Pennsylvania	Fort Washington, South Capitol St, Farragut Square
P17	Oxon Hill - Fort Washington Line	10th/Pennsylvania	Fort Washington, Oxon Hill, Farragut Square
P19	Oxon Hill - Fort Washington Line	10th/Pennsylvania	Fort Washington, Oxon Hill, Farragut Square
Virginia			
11Y	Mt Vernon Express Line	14th/Pennsylvania	Mt Vernon, Alexandria, Downtown
13Y	Arlington – Union Station	10th/E	Reagan National Airport, Downtown, Union Station
16X	Columbia Pike - Federal Triangle Line	10th/Pennsylvania	Columbia Pike (Arlington), Federal Triangle
7Y	Lincolnia - North Fairlington Line	10th/Pennsylvania	Lincolnia, North Fairlington, Federal Triangle

Source: WMATA (2014e)

Figure 4-24: Metrobus Routes Serving the JEH Parcel Study Area



Bus: Metrobus

There are 35 Metrobus routes that serve the JEH parcel study area on weekdays. While the majority of these routes only serve neighborhoods within Washington, D.C., several also serve areas outside Washington, D.C., including: Silver Spring, Maryland; Prince George's County, Maryland; Arlington County, Virginia; Fairfax County, Virginia; and Alexandria, Virginia. Within Washington, D.C., nearly every neighborhood has Metrobus service to the study area with the exception of the Connecticut Avenue NW corridor (west of Rock Creek), Langdon and Fort Lincoln (Northeast), and Benning Ridge (between East Capitol Street and Pennsylvania Avenue SE). In addition to the 35 routes that serve the study area on weekdays, 2 routes serve the study area on weekends only. These routes include Route 13Y (Arlington to Union Station) and Route V8 (Minnesota Avenue – M Street).

The majority of routes in the study area have stops at intersections along Pennsylvania Avenue that provide close access to the JEH building. Sixteen routes have stops at 10th Street NW and Pennsylvania Avenue NW, while an additional six routes have stops at other intersections along Pennsylvania Avenue NW. Table 4-22 summarizes the Metrobus routes that serve the study area along with their major destinations served and their stops closest to the JEH building. Figure 4-24 illustrates Metrobus routes that serve the study area.

WMATA recently restructured the 30s line in August 2014 and added two routes to the Pennsylvania Avenue corridor within the study area: 30N and 30S. Route 30N will operate between Naylor Road and Friendship Heights, and Route 30S will operate between Southern Avenue and Friendship Heights. Route 33 will operate between Friendship Heights and Archives. Although Routes 32 and 36 will continue to operate on Pennsylvania Avenue, both will only travel as far west as Foggy Bottom. Because these routes primarily serve local travel within Washington, D.C., and the overall 30s line will follow the same route through the study area, the service changes would likely not be significant to the outcomes of this analysis. WMATA continually makes minor adjustments to local bus services to better serve demand.

Bus Service Characteristics and Frequency of Service

The 35 Metrobus routes that serve the study area on weekdays have varying service characteristics and LOS. Bus route LOS generally consist of two measures: headways, or the time between buses during certain periods, and span of service, or the start and end time of each route. Major service characteristics include service during peak periods only, late night service, late night/early morning only service to replace Metrorail service, limited stop MetroExtra service, and high frequency service. Of the weekday Metrobus routes, 15 routes have peak-only service, 16 have late-night service, 3 have late-night/early-morning only service, 6 are limited-stop MetroExtra routes, and 21 have high frequencies of 15 minutes or less at some point on weekdays. Table 4-23 summarizes the major service characteristics of Metrobus routes that serve the study area on weekdays.

The routes serving the study area also have varying service frequencies on weekdays. As noted in table 4-24, some routes provide frequent service at 15-minute frequencies or less. Overall, Routes X2 and 79 provide the most frequent service, with frequencies of 10 minutes or less in both directions during peak periods. Route X2 operates along the H Street NW corridor in the study area, while Route 79 provides limited stop service to the 7th Street NW corridor, ending at the Archives Metro Station. Of the routes that directly serve the JEH parcel at the Pennsylvania Avenue NW/10th Street NW intersection, Routes 32, 36, 54, D1, P6, and 7Y all have peak frequencies in peak directions of 15 minutes or less.

Table 4-24 shows the bus frequencies by time period for the Metrobus routes in the study area. Peak periods (6:00 AM to 9:00 AM and 3:00 PM to 7:00 PM) are highlighted. The early AM period falls between 4:00 AM and 6:00 AM, the midday period between 9:00 AM and 3:00 PM, the evening period between 7:00 PM and 11:00 PM, and the late night period between 11:00 PM and 4:00 AM.

Table 4-23: Major Service Characteristics of Metrobus Routes Serving the JEH Parcel Study Area on Weekdays

Service Characteristic	Routes
Peak Only Service	11Y, 16X, 37, 39, 63, 7Y, A9, D1, D3, N3, P17, P19, W13, X1, X9
Late Night Service	32, 34, 36, 42, 52, 54, 64, 70, 74, 80, D6, G8, P6, S2, S4, X2
Late Night/Early AM Only Service	A42, A46, A48
Limited Stop (MetroExtra)	16X, 37, 39, 79, A9, X9
High Frequency (Peak =< 15 minutes)	32, 36, 39, 42, 52, 54, 63, 64, 70, 74, 79, 7Y, 80, A9, D1, D6, G8, P6, S2, S4, X2

Source: WMATA (2014e)

Table 4-24: JEH Parcel Metrobus Route Frequencies

Route & Direction	Headways (minutes)						Number of Weekday Trips	Span of Service
	Early AM	AM Peak	Midday	PM Peak	Evening	Late Night		
11Y North	-	26	-	-	-	-	7	6:34 AM TO 9:03 AM
11Y South	-	-	-	40	-	-	6	4:10 PM TO 7:25 PM
16X East	-	18	-	27	-	-	10	5:45 AM TO 9:37 AM; 3:00 PM TO 6:55 PM
16X West	-	23	-	27	-	-	9	5:30 AM TO 9:22 AM; 3:36 PM TO 7:28 PM
32 East	30	13	28	15	30	75	59	4:15 AM TO 2:39 AM
32 West	15	9	24	13	34	75	71	4:04 AM TO 3:42 AM
34 East	40	23	28	18	40	150	45	5:10 AM TO 1:26 AM
34 West	24	20	30	20	48	150	45	4:33 AM TO 12:55 AM
36 East	30	23	28	17	30	100	50	4:28 AM TO 2:08 AM
36 West	24	15	30	24	30	75	51	4:37 AM TO 3:12 AM
37 North	-	-	-	20	-	-	12	4:00 PM TO 7:42 PM
37 South	-	18	120	-	-	-	13	6:30 AM TO 10:09 AM
39 East	-	-	-	20	-	-	12	3:30 PM TO 7:33 PM
39 West	-	15	-	-	-	-	12	6:00 AM TO 9:46 AM
42 North	40	15	12	10	10	25	108	4:44 AM TO 3:19 AM
42 South	24	11	12	10	13	30	102	4:20 AM TO 2:45 AM
52 North	60	16	23	15	27	50	60	5:06 AM TO 3:05 AM
52 South	20	16	23	22	30	60	57	4:10 AM TO 2:29 AM
54 North	40	20	23	16	30	43	58	4:46 AM TO 3:35 AM
54 South	24	15	24	20	30	60	57	4:20 AM TO 3:00 AM
63 North	60	15	1 trip	12	-	-	35	5:17 AM TO 9:31 AM; 2:58 PM TO 7:22 PM
63 South	30	11	-	18	-	-	34	4:30 AM TO 9:46 AM; 3:12 PM TO 6:27 PM
64 North	40	15	20	15	22	33	69	5:34 AM TO 1:25 AM
64 South	40	14	20	16	24	60	64	5:09 AM TO 12:50 AM
70 North	17	13	12	12	12	23	105	4:00 AM TO 3:40 AM
70 South	12	12	12	13	13	30	103	4:00 AM TO 2:59 AM
74 North	40	13	15	15	24	60	72	5:03 AM TO 12:59 AM
74 South	30	13	15	15	24	75	72	4:45 AM TO 12:42 AM
79 North	-	9	12	9	2 trips	-	77	6:03 AM TO 7:50 PM
79 North	-	9	12	9	2 trips	-	77	6:03 AM TO 7:50 PM
79 South	-	8	12	10	2 trips	-	79	6:00 AM TO 7:45 PM

Source: WMATA (2014e)

Table 4-24: JEH Parcel Metrobus Route Frequencies (continued)

Route & Direction	Headways (minutes)						Number of Weekday Trips	Span of Service
	Early AM	AM Peak	Midday	PM Peak	Evening	Late Night		
7Y North	40	12	-	30	-	-	26	5:09 AM TO 9:35 AM; 3:18 PM TO 6:40 PM
7Y South	1 trip	36	1 trip	15	-	-	23	5:57 AM TO 9:16 AM; 3:12 PM TO 7:13 PM
80 North	40	14	16	10	24	60	78	5:07 AM TO 2:16 AM
80 South	17	9	15	12	30	100	82	4:29 AM TO 1:20 AM
A42 North	60	-	-	-	-	-	2	4:14 AM TO 5:23 AM
A42 South	60	-	-	-	-	300	3	4:48 AM TO 6:01 AM; 12:33 AM TO 1:08 AM
A46 North	60	-	-	-	-	50	8	4:00 AM TO 5:14 AM; 12:18 AM TO 3:12 AM
A46 South	1 trip	-	-	-	-	-	1	5:12 AM TO 5:47 AM
A48 North	60	-	-	-	-	300	3	4:26 AM TO 5:33 AM; 12:11 AM TO 12:40 AM
A48 South	40	-	-	-	-	50	9	4:21 AM TO 6:07 AM; 1:10 AM TO 3:52 AM
A9 North	1 trip	15	-	-	-	-	13	5:55 AM TO 9:44 AM
A9 South	-	-	-	18	-	-	13	3:35 PM TO 7:38 PM
D1 East	-	15	1 trip	-	-	-	13	7:10 AM TO 9:49 AM
D1 West	-	-	-	48	2 trips	-	6	4:30 PM TO 7:43 PM
D3 East	-	-	-	34	-	-	7	3:02 PM TO 6:45 PM
D3 West	-	23	1 trip	-	-	-	9	6:05 AM TO 10:03 AM
D6 East	60	18	21	13	30	50	62	5:15 AM TO 2:37 AM
D6 West	24	11	21	16	30	75	66	4:10 AM TO 1:45 AM
G8 East	60	18	28	13	27	50	58	5:29AM TO 12:46AM
G8 West	30	9	30	15	30	100	62	4:40 AM TO 11:56 AM
N3 East	-	36	-	-	-	-	5	6:45 AM TO 9:24 AM
N3 West	-	-	-	60	-	-	4	4:48 PM TO 6:58 PM
P17 North	30	20	-	-	-	-	13	4:47 AM TO 9:53 AM
P17 South	-	-	1 trip	17	-	-	15	2:57 PM TO 8:06 PM
P19 North	60	23	-	-	-	-	10	5:35 AM TO 9:06 AM
P19 South	-	-	-	24	-	-	10	3:42 PM TO 7:07 PM
P6 North	30	15	20	17	30	50	62	5:00 AM TO 1:04 AM
P6 South	40	18	19	18	30	43	60	5:05 AM TO 1:04 AM
S2 North	30	18	14	7	13	30	104	4:42 AM TO 3:39 AM

Source: WMATA (2014e)

Table 4-24: JEH Parcel Metrobus Route Frequencies (continued)

Route & Direction	Headways (minutes)						Number of Weekday Trips	Span of Service
	Early AM	AM Peak	Midday	PM Peak	Evening	Late Night		
S2 South	15	5	13	12	34	43	107	4:09 AM TO 2:56 AM
S4 North	30	18	17	12	20	75	71	4:58 AM TO 1:09 AM
S4 South	20	15	16	15	30	150	66	4:26A M TO 12:26 AM
W13 North	24	23	-	-	-	-	13	4:52A M TO 9:02 AM
W13 South	-	-	-	22	-	-	11	3:35 PM TO 7:53 PM
X1 East	-	-	-	30	-	-	8	3:38 PM TO 6:49 PM
X1 West	-	16	-	-	-	-	11	6:06 AM TO 9:23 AM
X2 East	17	9	8	6	14	23	142	4:04 AM TO 3:20 AM
X2 West	13	8	8	8	14	30	135	4:15 AM TO 2:52 AM
X9 East	-	18	-	18	-	-	23	6:30 AM TO 9:29 AM; 3:30 PM TO 7:14 PM
X9 West	-	16	1 trip	22	-	-	23	6:15 AM TO 9:41 AM; 3:43 PM TO 6:55 PM

Table 4-25: JEH Parcel Top Ten Metrobus Average Weekday Ridership by Route

Route	Description	Average Weekday Ridership
X2	Benning Road - H Street	17,404
70	Georgia Avenue - 7th Street	15,506
32	Pennsylvania Avenue Line	9,997
80	North Capitol Street Line	9,727
S2	16th Street Line	9,535
79	Georgia Avenue Metro Extra	9,164
36	Pennsylvania Avenue	6,663
42	Mount Pleasant	6,655
S4	16th Street	6,419
54	14th Street	6,347

Source: WMATA (2014f)

Ridership by Route

Several routes that serve the study area have some of the highest ridership in the Metrobus system overall, including Routes X2, 70, and 32. These routes also have the highest ridership within the study area. The top three routes for ridership among the routes directly serving the JEH parcel are Route 32 with 9,997 average weekday riders, Route 36 with 6,663 average weekday riders, and Route 54 with 6,347 average weekday riders. Table 4-25 shows the weekday ridership for the top ten Metrobus routes in the study area.

Stop level ridership, bus stop inventory, and trip level ridership by route and direction can be found in the JEH TIA (Appendix B).

Bus: Commuter

Commuter bus service to the study area is provided by four different transit agencies: Maryland Transit Administration (MTA), MARTZ, Potomac-Rappahannock Transit Commission (PRTC), and Loudoun County Transit (LCT) (DC GIS 2013; MTA 2014; MARTZ 2015; Loudoun County n.d.; PRTC 2015). The majority of these commuter routes serve either the 14th Street NW corridor or the Pennsylvania Avenue NW corridor. Thirty-nine commuter bus routes serve the study area via 17 bus stops; bus stops for different service providers are often co-located. MTA has 12 stops serving 13 routes, MARTZ has 6 stops serving 12 routes, PRTC has 6 stops serving 6 routes, and LCT has 2 stops serving 8 routes. MTA provides service from several areas of Charles, Prince George's, Anne Arundel, and Howard Counties. MARTZ primarily provides service from Fredericksburg, Virginia, and Stafford, Virginia. PRTC provides service from Prince William County, and LCT provides service from Leesburg, Virginia; Purcellville, Virginia; and the area surrounding Dulles Airport in Loudoun County, Virginia. Figure 4-25 illustrates the 17 commuter bus stop locations within the study area, while the 39 commuter bus routes that serve the study area are summarized in the JEH TIA (Appendix B).

Figure 4-25: Commuter Bus Stops within the JEH Parcel Study Area

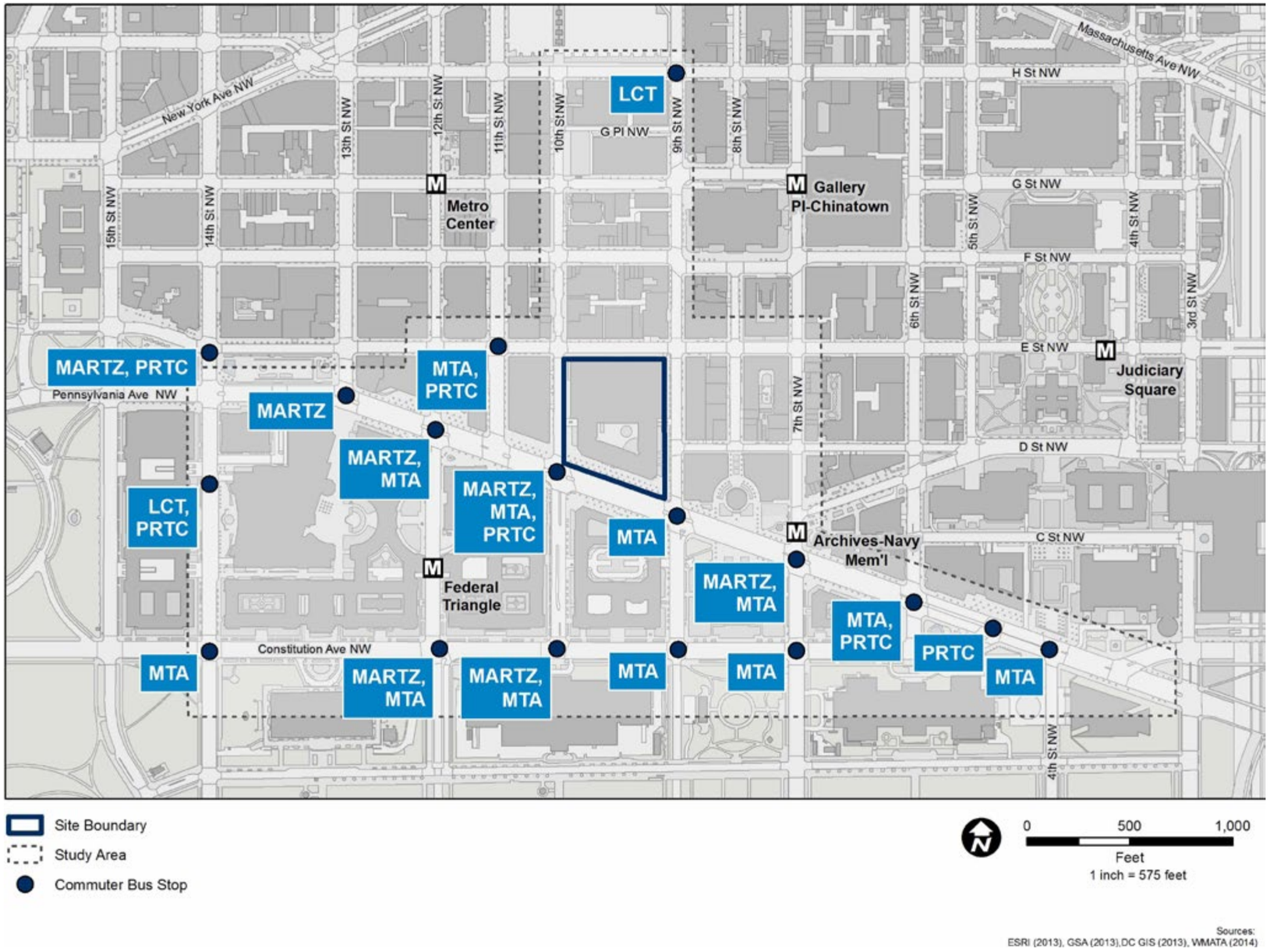
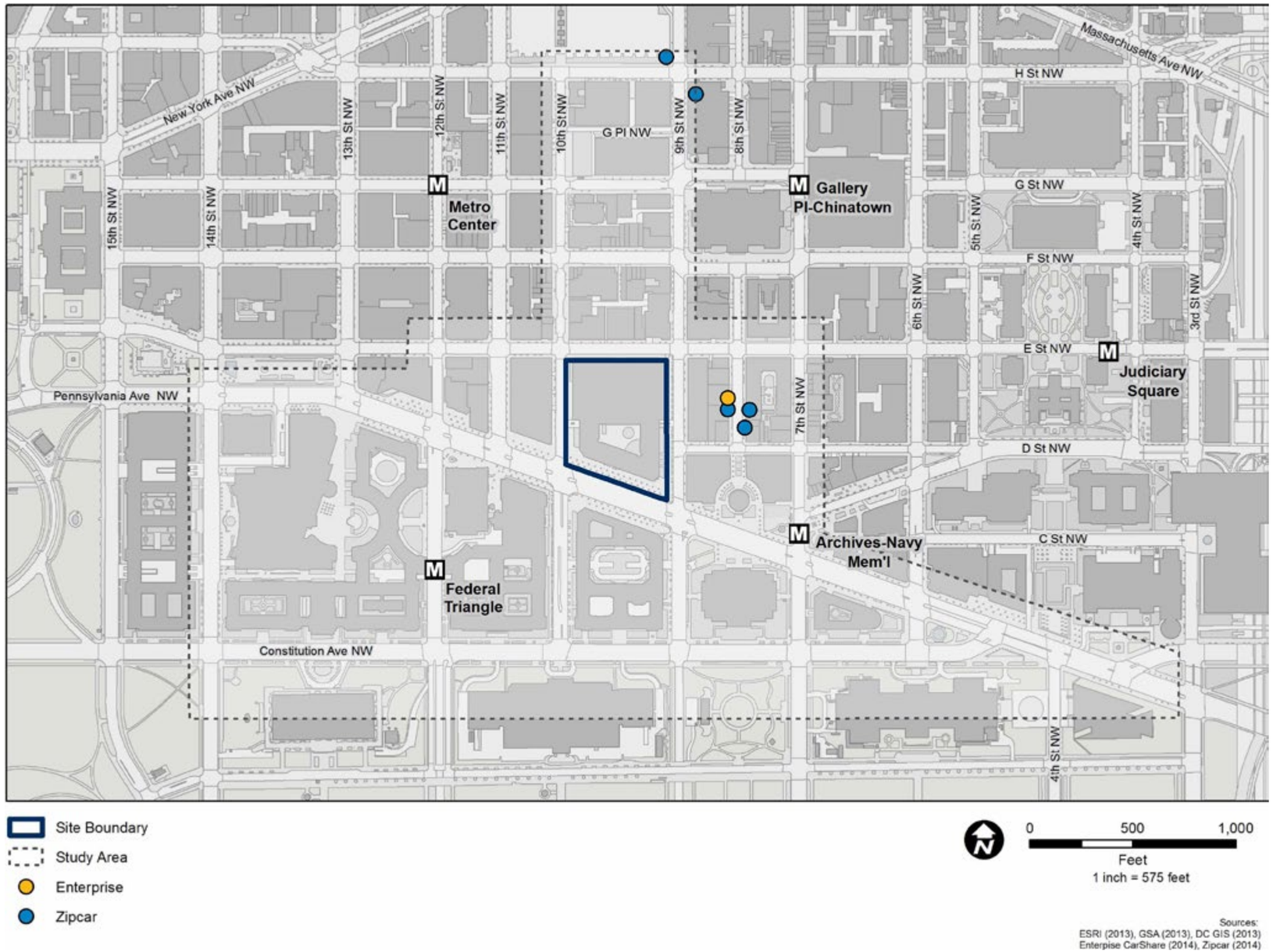


Figure 4-26: Car Share Locations within the JEH Parcel Study Area



Ridesharing/Slugging

Slugging, or casual carpooling, serves commuters traveling to Washington, D.C., from Springfield, Woodbridge, Stafford, Fredericksburg, Alexandria, and Arlington, Virginia. There are two locations for slugging located within the JEH parcel study area: 14th Street NW at Constitution Avenue NW and 14th Street NW at D Street NW (Slug-lines.com 2014). Slugging is a demand-based, informal system that changes over time based on user needs and trip patterns; therefore, new slug lines emerge and existing slug lines disband as needed. The best time for afternoon pick-ups (returning to Virginia) at both locations is between 4:00 PM and 5:00 PM (www.slug-lines.com). The 14th Street NW/Constitution Avenue NW location is served by two lines both operating to and from Springfield, Virginia. One line serves a park-and-ride lot ("Bob's") located just west of I-95, near the intersection of Old Keene Mill Road and Bland Street. The other line serves "Rolling Valley," located at the commuter lot near the intersection of 9300 Old Keene Mill Road and Shiplett Boulevard.

The 14th Street NW/D Street NW location is located at a Metrobus stop and is served by three lines, one operating to and from the Lake Ridge area of Woodbridge, Virginia, and two operating to and from Dale City, Virginia. The Lake Ridge line serves "Old Hechinger's," located at 1310 Old Bridge Road, Woodbridge, Virginia. The Dale City line serves two locations: Potomac Mills and Horner Road. Potomac Mills is located on the south side of the Potomac Mills Shopping Center at 14362 Gideon Drive, Dale City, Virginia. Horner Road is located near the intersection of Prince William Parkway and Horner Road.

Carsharing

There are currently three companies that offer carsharing in Washington, D.C.: Zipcar, Enterprise, and Car2Go. Zipcar and Enterprise have designated pick-up/drop-off locations, while Car2Go allows users to park anywhere within Washington, D.C., with the exception of the National Mall, Tidal Basin, and Hains Point area. Enterprise currently has one carshare location within the study area, while Zipcar has five. These locations are clustered in two locations: 8th Street NW between D and E Streets NW and at the 9th Street NW/H Street NW intersection. Five of the six carshare locations are in parking garages, and one is on the street. Table 4-26 and figure 4-26 summarizes these locations.

Shuttles

There are a number of shuttles serving the study area that are operated by various Federal Government agencies (GSA 2010). The precise beginning and ending locations of these shuttles is not public information. The following Federal agencies operate shuttles within the study area.

- Department of Homeland Security
- Department of Defense
- Department of Education
- Department of Interior
- Department of Justice
- Department of Transportation
- Environmental Protection Agency
- Federal Communications Commission
- General Services Administration
- Nuclear Regulatory Commission

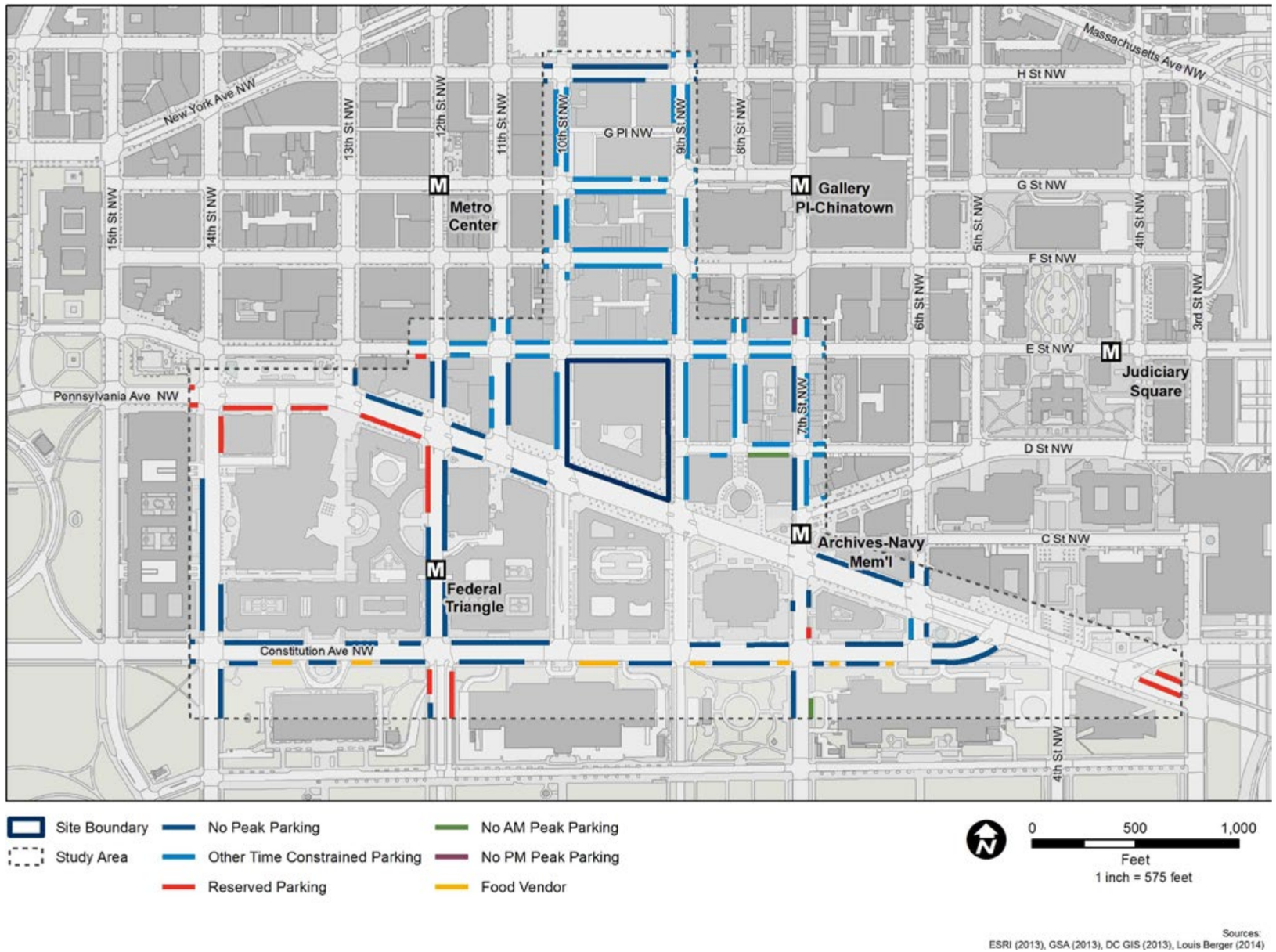
slugline forming 14th St. NW. Photo Courtesy of Dan Macy (© 2009)

Table 4-26: Existing Carshare Locations within the JEH Parcel Study Area

Company	Location	Type
Enterprise	875 D Street NW	Garage
Zipcar	Archives Metro	On street
Zipcar	425 8th Street NW	Garage
Zipcar	875 D Street NW	Garage
Zipcar	8th/H Street NW	Garage
Zipcar	870 9th Street NW (City Center)	Garage

Source: Enterprise CarShare (2015); Zipcar (2015)

Figure 4-27: On-street Parking in the JEH Parcel Study Area



4.1.9.8 Parking

Parking near the JEH parcel includes limited metered and otherwise restricted on-street parking, as shown in figure 4-27, and structured below-grade parking accessible to the public as shown in figure 4-28. Information about on-street parking in the area was gathered through site visits carried out on July 16 and 17, 2014. Besides the public parking garage in the Ronald Reagan building and International Trade Center, all other nearby garage parking is north of Pennsylvania Avenue NW.

A review of the on-street parking map (figure 4-27) reveals that there is no on-street parking allowed on the JEH parcel block, along several sections of Pennsylvania Avenue NW including between 9th and 10th Streets NW, along 9th and 10th Streets NW between Pennsylvania and Constitution Avenues NW, and on the north side of Constitution Avenue NW between 9th and 10th Streets. Beyond the areas of "no on-street parking" in the immediate vicinity of the JEH building, on-street parking is generally metered and time constrained (typically a 2-hour time limit) with the closest on-street parking located to the north, east and west of the JEH building. On-street parking is limited to non-peak hours along Pennsylvania Avenue NW; H Street NW; 7th, 12th, and 14th Streets NW; and Constitution Avenue NW, as well as one side of the street on 13th, 11th, and 6th Streets NW in the study area. Reserved parking for government or Smithsonian officials and specific zone permit holders is concentrated along Pennsylvania Avenue NW and one block of E Street NW between 12th and 15th Streets NW, on two sections of 12th Street NW, a small portion of 14th Street near Pennsylvania Avenue NW, a small portion of 7th Street NW near Constitution Avenue NW, and on a small portion of Pennsylvania Avenue NW east of its intersection with Constitution Avenue NW. Food vendor on-street parking is also available along the south side of Constitution Avenue NW. Some sections of the study area have different AM and PM on-street parking situations, as shown in figure 4-27.

In addition to the on-street parking areas, the areas along the west side of 10th Street NW and the east side of 9th Street NW between Pennsylvania Avenue NW are reserved for Metrobus parking and tour bus parking, respectively. The east side of 14th Street in front of the Ronald Reagan building is also designated as a bus stop area with no street parking. Shuttle pick-up and drop-off was observed on July 16, 2014, on the north side of Constitution Avenue NW between 9th and 10th Streets NW. A few loading zones are also demarcated in the study area, including one along the east side of 10th Street NW between E and F Streets NW.

4.1.9.9 Truck Access

Currently, trucks accessing the JEH building enter through a shared vehicular entrance on 10th Street NW. Trucks seeking access to the building are examined more thoroughly than standard personal vehicles.

JEH PARKING

- Parking near the JEH parcel includes limited metered and otherwise restricted on-street parking, and structured below-grade parking accessible to the public. However, there is no on-street parking allowed on the JEH parcel block, along several sections of streets surrounding the JEH parcel.
- In addition to on-street parking, areas along 10th Street NW (west side) and 9th Street NW (east side) between Pennsylvania Avenue NW are reserved for Metrobus parking and tour bus parking, respectively.

Figure 4-28: Garage Parking in the JEH Parcel Study Area

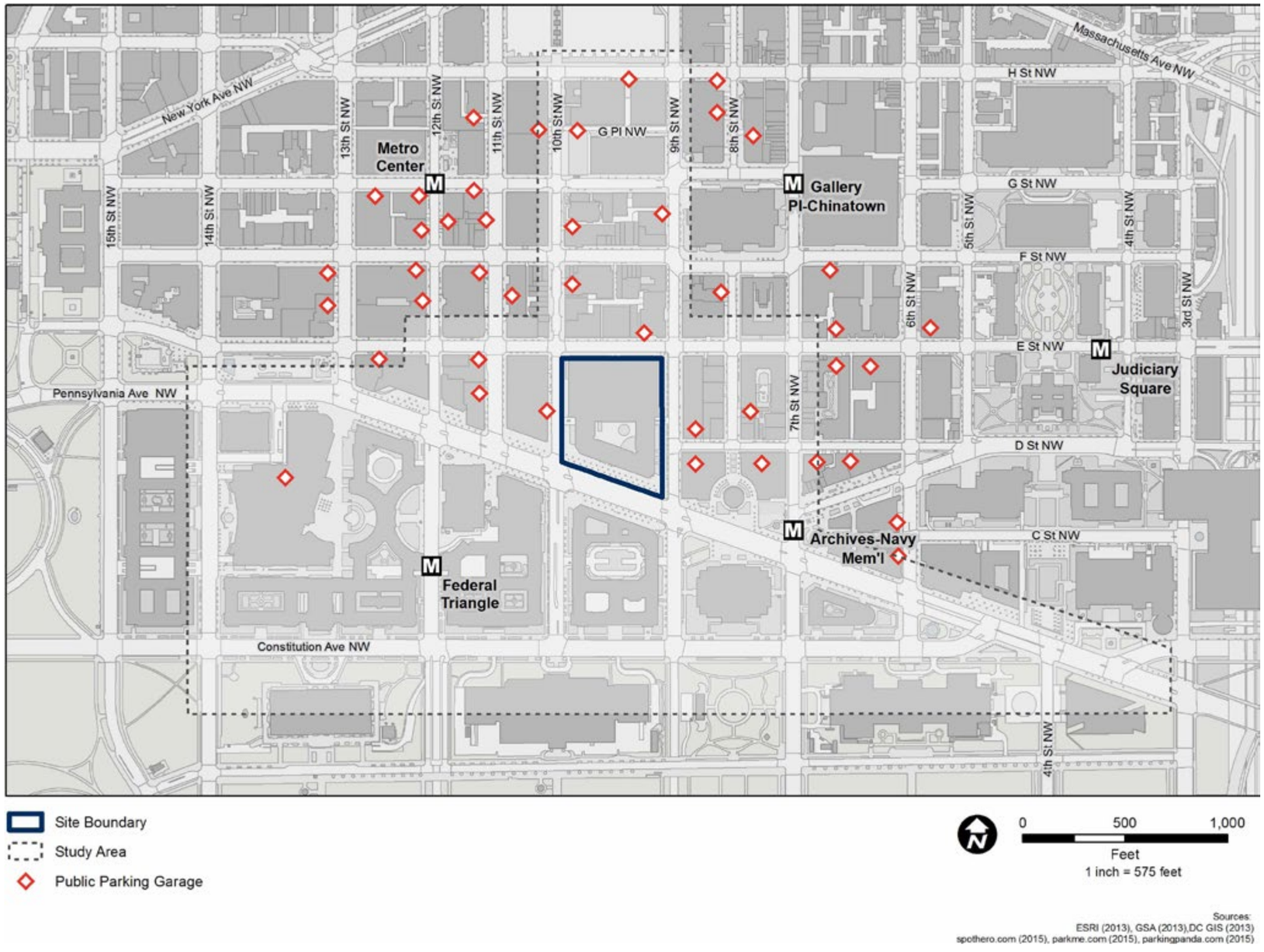
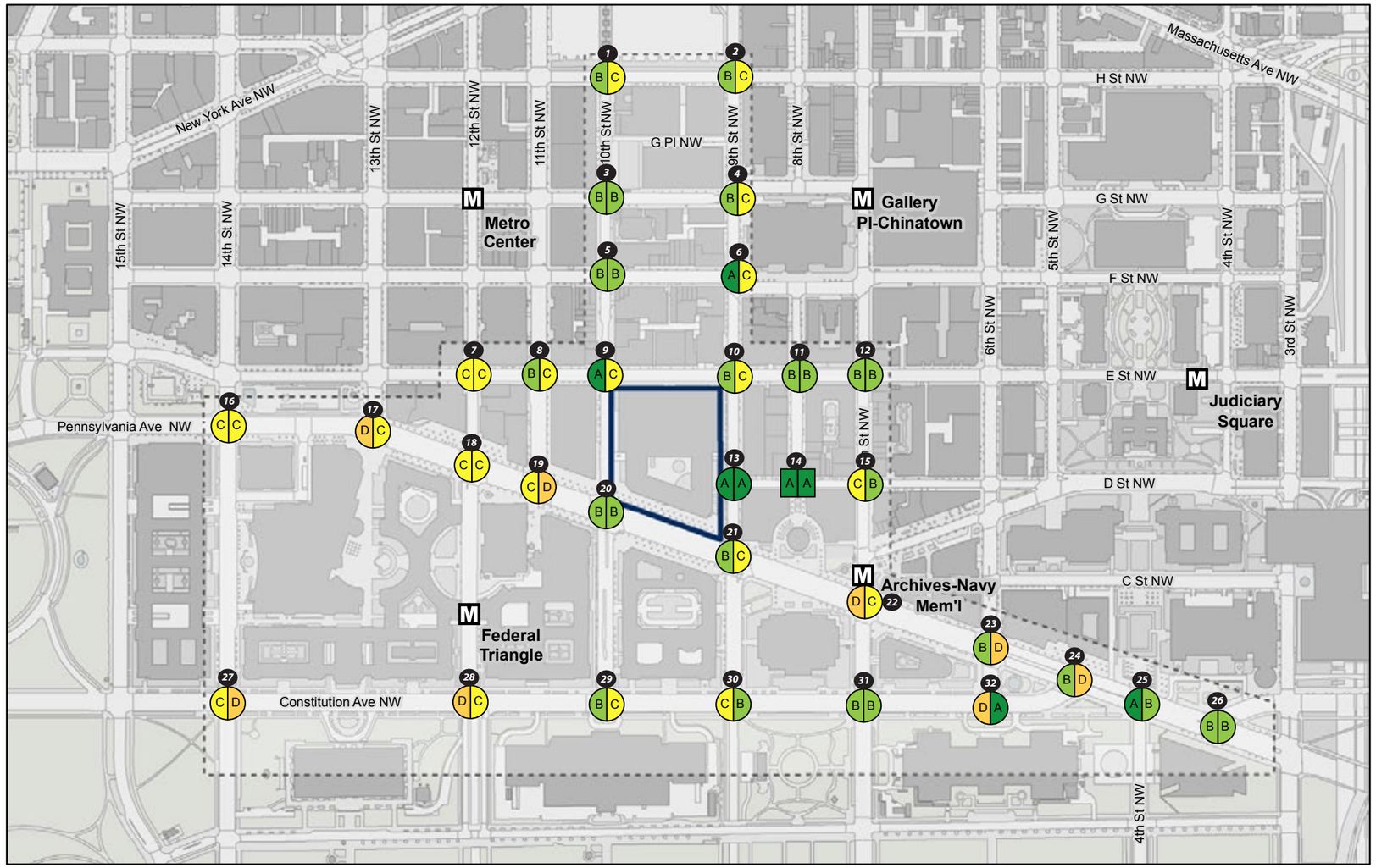


Figure 4-29: JEH Parcel Existing Level of Service Diagram



4.1.9.10 Traffic Analysis

Section 3.10.4.3 explains the analysis, tools, concepts, and definitions for analyzing traffic operations as well as the process used to analyze the study area intersections. The section below provides the traffic analysis results.

Existing Condition Intersection Operations Analysis

Synchro™ was used to calculate the vehicle delay and LOS operation for each study area intersection. Based on the signalized intersection analysis, all of the study intersections operate at overall acceptable conditions during the morning and afternoon peak hours. A total of 10 signalized intersections would experience an unacceptable conditions for one or more turning movements. The JEH TIA (Appendix B) contains a more detailed Existing Condition traffic operations analysis.

Based on the unsignalized intersection analysis, the one unsignalized intersection in the study area (8th Street NW and D Street NW) operates at an acceptable condition during the AM and PM peak hours.

Intersection Operations Analysis

The average LOS for each overall intersection is depicted in figure 4-29 for AM and PM peak hours. Table 4-27 shows the results of the LOS capacity analysis and the intersection vehicle delay for the Existing Condition during the AM and PM peak hours.

Intersection Queuing Analysis

Section 3.10.4.3 introduces the queuing analysis methods used for each study area intersection and which tools were used to obtain the results. Observations during the week of February 9, 2015, in the study area surrounding the existing JEH parcel in downtown Washington, D.C., noted queuing on many blocks during both the AM and PM peak hours. While queuing was noted along many blocks, most of these queues cleared with the signal cycles controlling the adjacent intersections. However, there were a few points with significant queuing that did not clear with the signal cycles. During the AM peak hour, northbound 12th Street operated as a continuous queue from the ramps exiting I-395 and through the Constitution Avenue and Pennsylvania Avenue intersections, dissipating after E Street. During the PM peak hour, southbound 9th Street operated as a continuous queue from G Street through Pennsylvania Avenue to Constitution Avenue.

Based on the Synchro™ and SimTraffic™ analysis, 28 signalized intersections would experience queuing lengths that would exceed the available storage capacity. The remaining intersections in the study area would provide sufficient storage for the anticipated demand. The JEH TIA (Appendix B) contains a more detailed Existing Condition traffic queuing analysis.

Table 4-27: JEH Parcel Existing Condition AM and PM Peak Hour Operations Analysis

#	Intersection	AM Peak Hour Overall			PM Peak Hour Overall		
		Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check
1	10th Street NW & H Street NW	13.3	B	Pass	20.1	C	Pass
2	9th Street NW & H Street NW	19.4	B	Pass	21.6	C	Pass
3	10th Street NW & G Street NW	14.3	B	Pass	18.0	B	Pass
4	9th Street NW & G Street NW	12.6	B	Pass	28.1	C	Pass
5	10th Street NW & F Street NW	12.2	B	Pass	17.6	B	Pass
6	9th Street NW & F Street NW	9.5	A	Pass	21.9	C	Pass
7	12th Street NW & E Street NW	20.9	C	Pass	25.7	C	Pass
8	11th Street NW & E Street NW	14.6	B	Pass	25.6	C	Pass
9	10th Street NW & E Street NW	8.7	A	Pass	23.5	C	Pass
10	9th Street NW & E Street NW	12.2	B	Pass	29.2	C	Pass
11	8th Street NW & E Street NW	13.8	B	Pass	13.5	B	Pass
12	7th Street NW & E Street NW	18.6	B	Pass	18.8	B	Pass
13	9th Street NW & D Street NW	7.7	A	Pass	8.3	A	Pass
14	8th Street NW & D Street NW (AWSC)	8.2	A	Pass	8.4	A	Pass
15	7th Street NW & D Street NW	26.1	C	Pass	16.8	B	Pass
16	14th Street NW & Pennsylvania Avenue NW	27.3	C	Pass	21.7	C	Pass
17	13th Street NW & Pennsylvania Avenue NW	36.0	D	Pass	23.9	C	Pass
18	12th Street NW & Pennsylvania Avenue NW	23.7	C	Pass	20.3	C	Pass
19	11th Street NW & Pennsylvania Avenue NW	27.4	C	Pass	42.6	D	Pass
20	10th Street NW & Pennsylvania Avenue NW	15.2	B	Pass	15.1	B	Pass
21	9th Street NW & Pennsylvania Avenue NW	11.2	B	Pass	21.4	C	Pass
22	7th Street NW & Pennsylvania Avenue NW	38.2	D	Pass	21.9	C	Pass
23	6th Street NW & Pennsylvania Avenue NW	16.5	B	Pass	49.7	D	Pass
24	Constitution (WB) Avenue NW & Pennsylvania Avenue NW	19.8	B	Pass	37.1	D	Pass
25	4th Street NW & Pennsylvania Avenue NW	9.9	A	Pass	14.1	B	Pass
26	Constitution (EB) Avenue NW & Pennsylvania Avenue NW	18.0	B	Pass	17.9	B	Pass
27	14th Street NW & Constitution Avenue NW	24.0	C	Pass	54.7	D	Pass
28	12th Street NW & Constitution Avenue NW	45.0	D	Pass	27.4	C	Pass
29	10th Street NW & Constitution Avenue NW	13.6	B	Pass	24.5	C	Pass
30	9th Street NW & Constitution Avenue NW	26.0	C	Pass	17.8	B	Pass
31	7th Street NW & Constitution Avenue NW	17.6	B	Pass	17.8	B	Pass
32	6th Street NW & Constitution Avenue NW	42.8	D	Pass	6.0	A	Pass

Notes:
AWSC = All-Way STOP-Controlled unsignalized intersection
EB = Eastbound, WB = Westbound
LOS = Level of Service
Delay is Measured in Seconds Per Vehicle.
Red cells denote intersections operating at unacceptable conditions.

Table 4-28: JEH Parcel Two Highest Ozone and $PM_{2.5}$ Values, 2010 to 2014

Monitoring Station		Year				
		2010	2011	2012	2013	2014
#110010043 – 2500 1st Street NW, Washington, D.C.	8-Hour Ozone	0.10/0.088	0.092/0.087	0.098/0.088	0.068/0.066	0.08/0.071
	24-Hour $PM_{2.5}$ – 1	34.1/33.0	30.6/30.2	34.1/31.9	27.3/26.7	30.1/25.8
	24-Hour $PM_{2.5}$ - 2	N/A	N/A	31/23.6	27.6/26	18.7/18.1
#110010042 – Park Service Office 1100 Ohio Drive, Washington, D.C.	24-Hour $PM_{2.5}$	35.1/25.2	30.7/26.9	31.2/27.7	25.7/18.7	17.3/16.8
#110010041 – 420 34th Street NE, Washington, D.C.	8-Hour Ozone	0.096/0.090	0.085/0.084	0.083/0.083	0.071/0.069	N/A
	24-Hour $PM_{2.5}$ – 1	62.2/36.8	28.1/27.8	35.5/33.8	27.6/25.8	30.7/23.8
	24-Hour $PM_{2.5}$ - 2	37.1/25.8	29.2/25.0	N/A	N/A	N/A
#110010050 – 301 Van Buren Street NW, Washington, D.C.	8-Hour Ozone	N/A	N/A	N/A	0.068/0.067	0.082/0.074
#110010025 – Takoma Sc. Piney Branch Road NW, Washington, D.C.	8-Hour Ozone	0.087/0.085	N/A	N/A	N/A	N/A

Source: USEPA (2014a)

JEH GREENHOUSE GAS EMISSIONS AND AIR QUALITY AFFECTED ENVIRONMENT OVERVIEW

- There is broad scientific consensus that humans are changing the chemical composition of earth's atmosphere. Activities, such as fossil fuel combustion, deforestation, and other changes in land use, are resulting in the accumulation of trace GHGs, such as CO_2, in the atmosphere.
- An increase in GHG emissions is said to result in an increase in the earth's average surface temperature, which is commonly referred to as global warming.
- GHG sources at JEH include boilers, chillers, water heaters, daily commuters, and emergency generators. Currently, JEH monitors CO_2e emissions for stationary sources. In FY 2013, JEH emitted 16,002 million metric tons of CO_2e

4.1.10 Air Quality and Greenhouse Gas (GHG) Emissions

The following sections describe the affected environment for air quality and greenhouse gases (GHGs) relevant to the JEH parcel.

4.1.10.1 Greenhouse Gases

GHG emission sources at JEH include boilers, chillers, water heaters, daily commuters, and emergency generators. Currently, the FBI calculates estimated carbon dioxide equivalent (CO_2e) emissions for stationary sources based on fuel consumption and utility use. In FY 2013, JEH emitted an estimated 31,854 metric tons CO_2e from stationary sources and 2,184 metric tons CO_2e from employee commutes (see section 4.2.9 for more information).

4.1.10.2 Air Quality

All sites considered in this EIS are within the same airshed (AQCR 47); all airshed-wide indicators are provided in section 3.11.2.

Existing Ambient Air Quality Concentrations

As discussed in section 3.11.2, the JEH parcel is located in a nonattainment area for the 8 hour ozone (O_3) standard and a maintenance area for particulate matter ($PM_{2.5}$) and carbon monoxide (CO).

Ambient air quality is monitored in the study area by stations meeting USEPA's design criteria for State and Local Air Monitoring Stations and National Air Monitoring Stations. There are five monitoring stations located within Washington, D.C., that measure O_3, $PM_{2.5}$, and meteorological conditions in Washington, D.C. The highest and second highest values recorded at these stations during the period 2010 through 2014 are shown in table 4-33.

Regional Air Quality Index Summary

As described in section 3..1.2.1, USEPA calculates the Air Quality Index (AQI) for five major air pollutants regulated by the Clean Air Act (CAA): ground-level O_3, PM, CO, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2). MWCOG collects data daily to determine air quality for the region and releases it in the form of the AQI.

Table 4-29 displays recent AQI data for Washington, D.C., indicating that an AQI above 300 has not been recorded in Washington, D.C., in the 2010-2014 period.

Table 4-29: AQI Data for Washington, D.C.

Year	AQI - 101 to 150 Unhealthy for Sensitive Groups (days)	AQI - 151 to 200 Unhealthy (days)
2010	18	2
2011	11	0
2012	12	1
2013	0	0
2014	1	0

Source: USEPA (2014b)

UNHEALTHY AIR QUALITY

An AQI value above **151** is considered **unhealthy**. Ah this point, everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.

JEH AIR QUALITY

- Air quality is assessed by regions known as airsheds. The Metropolitan Washington, D.C., area is also known as Air Quality Control Region (AQCR) 47 and includes the JEH parcel as well as all three site alternative locations
- Federal regulations designate AQCRs in violation of the National Ambient Air Quality Standards (NAAQS) as nonattainment areas. According to the severity of the pollution problem, nonattainment areas can be categorized as marginal, moderate, serious, severe, or extreme. USEPA has classified the Metropolitan Washington, D.C., area (AQCR 47), which includes the District of Columbia, Prince George's County, Maryland, and Fairfax County, Virginia, as in marginal nonattainment for the 8-hour ozone NAAQS and in moderate nonattainment for $PM_{2.5}$.
- Climate in the Washington, D.C., Metropolitan area is humid and continental with an average high temperature of 88°F in July and an average low temperature of 25°F in January.

JEH NOISE AFFECTED ENVIRONMENT OVERVIEW

- The JEH parcel exists within a heavily developed urban area, and noise sources in the project area include vehicular traffic along adjacent streets, movement of people, emergency response vehicles, motorcade escorts, construction equipment, and operations from Ronald Reagan Washington National Airport.
- Noise is monitored and measured using the A-weighted decibel (dBA), which is used to express the relative loudness of sounds in the air as perceived by the human ear. Human ability to perceive change in noise levels varies widely from person to person, as do responses to perceived changes. Generally, a 3 dBA change in noise level would be barely perceptible to most listeners, whereas a 10 dBA change is normally perceived as doubling (or halving) of noise levels and is considered a substantial change.
- Because the JEH parcel is located in a highly developed urban area, sensitive noise receptors surround the entirety of the property and include a number of residences, hotels, and parks, most notably the National Mall operated by NPS.

NOISE-SENSITIVE RECEPTORS

Human activities or land uses that may be subject to the stress of significant interference from noise, including residential dwellings, parks, hotels, hospitals, nursing homes, education facilities, churches, and libraries. Sensitive receptors may also include threatened or endangered noise-sensitive biological species.

Hotel Harrington
http://susanreep.com/blog/tag/hotel-harrington/

National Archives Building from Constitution Avenue
Licensed under Public Domain via Commons
https://commons.wikimedia.org/wiki/File:National_Archives_DC_2007s.jpg#/media/File:National_Archives_DC_2007s.jpg

4.1.11 Noise

The JEH parcel exists within a heavily developed urban area. Noise sources within the project area include vehicular traffic along adjacent streets, including E Street NW, 9th Street NW, 10th Street NW, and Pennsylvania Avenue NW. Other sources are human activities associated with an urban environment including the movement of people, emergency response vehicles, motorcade escorts, construction equipment, and operations from Ronald Reagan Washington National Airport. The JEH parcel consists entirely of Federal office space with an underground parking garage, and noise generated is typical of these land uses.

Because the JEH parcel is located in a highly developed urban area, sensitive noise receptors surround the entirety of the property and include a number of residences, hotels, and parks, most notably the National Mall operated by NPS. The closest sensitive receptor is the Lado International Institute, approximately 150 feet to the east of the parcel. Other sensitive noise receptors within 500 feet include multiple residences, Hotel Harrington, Hotel Monaco-Washington, D.C., Courtyard by Marriott-Washington Convention Center, Ford's Theatre, and the National Archives and Records Administration.

Noise regulations applicable to the JEH parcel include Section 5 of the Washington, D.C., Noise Control Act of 1977 (DC Law 2-53, 24 DCR 5293), which permits noise from construction or demolition (excluding pile drivers) activity between 7:00 AM and 7:00 PM on any weekday (DCODAI 1977). Per Section 5 of the Act, noise levels for construction or demolition activities are not permitted to exceed 80 dBA unless through a variance granted by the Mayor of Washington, D.C.

Maximum operational sound levels are established in Washington, D.C's, Municipal Regulations (Chapter 27; Section 2701), which are applicable for the day and night in specific zones defined in the statute, as shown in table 4-38. The JEH parcel is within the commercial or light manufacturing zone, where the maximum permitted daytime noise level is 65 dBA for daytime and 60 dBA for nighttime.

4.1.12 Infrastructure and Utilities

The following sections describe the affected environment for infrastructure and utilities relevant to the JEH parcel.

4.1.12.1 Water Supply

The District of Columbia Water and Sewer Authority (DC Water), formerly known as DC WASA, was created in the mid-1990s as a quasi-independent authority of Washington, D.C.(DC Water 2015a). DC Water provides water and wastewater services to more than 640,000 residents, 700,000 employees, and 17.8 million visitors per year within its approximately 725 square mile service area. DC Water also provides wastewater treatment for flows from an additional 1.6 million people across parts of Montgomery, Prince George's, Fairfax, and Loudoun Counties in Maryland and Virginia (DC Water 2015b).

The U.S. Army Corps of Engineers (USACE) treats and supplies water to DC Water for distribution via the Washington Aqueduct. Raw water is acquired from the Great Falls and Little Falls intakes on the Potomac River and is treated at the Dalecarlia and McMillan Water Treatment Plants (WTPs). The WTPs treat the raw water using screening; flocculation and sedimentation; rapid sand filtration; and chemical additions for chlorination, fluoridation and pH control. The capacity of the Dalecarlia WTP is 164 million gallons per day (MGD) based on filtration rates of two gallons per minute per square foot (gpm/sf), and a maximum of 264 MGD. The McMillan WTP has an average design capacity of 120 MGD based on a filter design rate of 4 gpm/sf and a maximum capacity of 180 MGD (DC Water 2015c).

DC Water pumps an average of 100 MGD and has the capacity to store 95 million gallons of water at its five reservoirs and three water towers, not including the 41 million gallons within the aqueduct. The design capacity of these WTPs is reportedly greater than the day-to-day demands and peak requirements of the customers (DC Water 2015b).

The JEH building is provided with potable and fire protection water by DC Water and is within the low service area. The low service area is served by the Dalecarlia and Bryant Street pumping stations, and the system pressure within the area is maintained by the Brentwood Reservoir (DC Water 2015d). According to maps provided by DC Water Permit Operations, there are 12-inch water mains along 10th Street, E Street, and the north side of Pennsylvania Avenue. There is also a 20-inch water main along the south side of Pennsylvania Avenue and a 16-inch water main along 9th Street. Based on utility maps provided by DC Water, the building is provided with two, 12-inch service connections along 10th Street. At least two active hydrants are located on each side, all of which are in good working order. System operating pressure in the area is approximately 60 pounds per square inch (psi).

Table 4-30: JEH Parcel Maximum Noise Levels

Zone	Maximum Noise Level (dBA)	
	Daytime	Nighttime
Commercial or light manufacturing zone	65	60
Industrial Zone	70	65
Residential, special purpose, or waterfront zone	60	55

Source: 27 DCR 2701

JEH INFRASTRUCTURE AND UTILITIES AFFECTED ENVIRONMENT OVERVIEW

- The JEH parcel is provided with potable and fire protection water by DC Water and is within the low service area. DC Water also owns the Blue Plains Advanced Wastewater Treatment Plan (AWTP). The DC Water collection and conveyance system consists of 1,800 miles of sanitary and combined sewers and nine wastewater pump stations
- The JEH parcel is within a highly developed urban environment served with wastewater collection and treatment services by DC Water and has wastewater collection adjacent on all sides. Based on available GIS information dated 2006, the JEH building appears to be within DC Water's B Street/New Jersey Avenue (B St/NJ Ave) sewer subshed along the border of the Easby Point sewer subshed.
- The JEH building is provided with electric service by PEPCO. The site is within a highly developed urban environment and currently receives high voltage supply from four 13.2-kilovolt (kV) feeders.
- The JEH building receives natural gas from Washington Gas and cable and high speed internet service from Comcast Cable.
- The JEH building is within the Comcast cable and high-speed internet service area. Secure fiber exists at the site.
- GIS information from 2006 shows that the JEH building borders DC Water's B St/NJ Ave and Easby Point drainage areas, which have combined sewer systems collecting both stormwater and sanitary wastewater.

DUCT BANK

An assembly of conduits designed to protect and consolidate cabling to and from buildings.

4.1.12.2 Wastewater Collection

DC Water owns the Blue Plains Advanced Wastewater Treatment Plant (AWTP), which is the largest advanced treatment facility of its kind with an annual average daily capacity of 370 MGD and a peak wet weather capacity in excess of 1,000 MGD (one billion gallons per day) (DC Water 2015b). As of September 2014, the monthly average influent flow at the Blue Plains AWTP was well below capacity at 263 MGD.

The DC Water collection and conveyance system consists of 1,800 miles of sanitary and combined sewers and nine wastewater pump stations (DC Water 2015e). Approximately one-third of the collection system is combined sewers that predate 1900 that are designed to collect both stormwater and sanitary flows (DC Water 2015f). During significant rain events, the capacity of these combined sewers is exceeded, which results in the discharge of the combined flow directly to the Anacostia River, Rock Creek, the Potomac River, or tributary waters via combined sewer outfalls (CSO). DC Water has 53 CSO outfalls included in the existing National Pollutant Discharge Elimination System (NPDES) permit (Permit No. DC0021199) from USEPA. This permit was last modified on May 27, 2014, and expires September 30, 2015 (DC Water 2015e).

The Blue Plains Intermunicipal Agreement, revised in 2012, is an arrangement between Washington, D.C., Montgomery and Prince George's Counties in Maryland, and Fairfax County in Virginia defining the rights, responsibilities, and obligations of the various parties regarding capacity allocation, management of wastewater facilities, and biosolids management (DC Water 2015g).

The JEH parcel is within a highly developed urban environment served with wastewater collection and treatment services by DC Water and has wastewater collection adjacent on all sides. Based on available GIS information dated 2006, the JEH building appears to be within DC Water's B Street/New Jersey Avenue (B St/NJ Ave) sewer subshed along the border of the Easby Point sewer subshed (DC.Gov 2014b). Both are areas of the DC Water collection system with combined sewers (stormwater and sanitary); however, DC Water reports that the area of the JEH building has a localized, separated wastewater system (Bilvardi 2015).

The Low Area Trunk Sewer is a 42-inch diameter brick and concrete pipe along Pennsylvania Avenue adjacent to the building, which is currently in the process of being rehabilitated (DC Water n.d.). Maps provided by DC Water Permit Operations show a 24-inch reinforced concrete pipe sewer along 9th Street that discharges into a 42-inch sewer at the intersection of D Street. The JEH building is provided with wastewater service via a connection to the Low Area Trunk Sewer, which conveys wastewater to the Main and O Street pump stations on its path to the Blue Plains AWTP for treatment. Recent upgrades at the Main and O Street pump stations included replacement of stormwater pumps, various sluice gates, and gate valves; rebuilding and upgrading sanitary pumps; upgrading electrical and ventilation systems; replacing screens and installing a screening handling system; and installing odor control systems (DC Water 2015h).

4.1.12.3 Electric Power

The Potomac Electric Power Company, Inc. (PEPCO), a subsidiary of Pepco Holdings, Inc., serves more than 800,000 residences and businesses in the Washington, D.C., metropolitan area (PEPCO 2015a). PEPCO has a service area of approximately 640 square miles of which 566 square miles is located in Montgomery and Prince George's Counties in Maryland (PEPCO 2015b). PEPCO's bulk transmission system consists of transmission lines operating at 115 kilovolt (kV), 138kV, 230kV, and 500kV. PEPCO has transmission interconnections with Potomac Edison, Baltimore Gas and Electric, and Dominion Virginia Power.

A merger between PHI and the Exelon Corporation is likely in the near future (PHI 2015b). Exelon, which is headquartered in Chicago, currently has subsidiaries in 48 states, the District of Columbia, and Canada (Exelon 2015). According to information available on the PHI website, the merger has been approved by the Federal Energy Regulatory Commission, the Virginia State Corporation Commission, the Delaware Public Service Commission, New Jersey Board of Public Utilities, and Maryland Public Service Commission (PHI 2015b), and PHI stockholders. The Public Service Commission of the District of Columbia rejected the merger in August 2015, which PEPCO and Exelon are currently in the process of appealing (Washington Post 2015). A date for the finalization of the merger is not publicly known at this time.

The JEH parcel is provided with electric service by PEPCO. The site is within a highly developed urban environment and currently receives high voltage supply from four 13.2kV feeders. These high-tension feeders enter the building in a common duct bank fed from a PEPCO subsurface structure located on 9th Street. The current demand for electricity at the JEH building is relatively high, as result of the high energy intensity of information technology equipment associated with FBI HQ operations.

4.1.12.4 Natural Gas

Washington Gas Light Company was founded in 1848 and was the first gas company in the United States chartered by Congress. Since then, Washington Gas has grown to provide natural gas service to more than one million residential, commercial, and industrial customers throughout Washington, D.C., as well as in areas of Maryland and Virginia (Washington Gas 2015a). Washington Gas doesn't not currently provide natural gas to the JEH building.

Maps provided by Washington Gas show that there is a 2-inch service line supplied by a 2-inch gas main along 10th Street, which has an operating pressure of 20 psi based on information obtained from Washington Gas. The information provided also indicates other gas lines adjacent to the building include 12-inch mains along Pennsylvania Avenue and 9th Street, and a 4-inch main along E Street. All of these main are listed as having an operating pressure of 20 psi.

4.1.12.5 Telecommunications

Verizon, RCN, Cox, and Comcast are the major telecommunications service providers in the Washington, D.C., Metropolitan region.

The JEH building is within the Comcast cable and high-speed internet service area. Secure fiber exists at the site.

4.1.12.6 Stormwater Management

GIS information from 2006 shows that the JEH building borders DC Water's B St/NJ Ave and Easby Point drainage areas (DC.Gov 2014b), which have combined sewer systems collecting both stormwater and sanitary wastewater. Stormwater from the JEH parcel is conveyed to DC Water's Blue Plains AWTP. During heavy storms, the combined sewers can overflow, and the overflow capacity is discharged to the Potomac River. The Clean Rivers Project, estimated for completion in 2030, is an ongoing long-term DC Water program to reduce combined sewer overflows.

Maps provided by DC Water Permit Operations show that the JEH building has a 12-inch stormwater lateral that exits the building to the south then turns west along Pennsylvania Avenue before connecting to the 66-inch sewer on 10th Street just south of the intersection. The 66-inch line also receives flow from 60-inch and 48-inch reinforced concrete pipe sewers along 10th Street and E Street, respectively, and discharges into the B St/NJ Ave trunk sewer. The B St/NJ Ave outfall (CSO 010) discharges into the Anacostia River adjacent to the Main and O Street Pump Stations just upstream of the Frederick Douglass Memorial Bridge (DC Water 2015f).

4.2 Environmental Consequences

JEH GEOLOGY & TOPOGRAPHY ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH SOILS ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: Indirect, short-term, adverse impacts.

The following sections describe the environmental consequences of the exchange and future redevelopment of the JEH parcel. The real estate transaction (exchange) transferring the JEH parcel from public into private ownership would not have any direct impacts at the same time and place as the Proposed Action. However, indirect impacts would occur later in time (40 CFR 1508.8) as a result of the redevelopment of the JEH parcel. Therefore, indirect impacts are evaluated for the No-action Alternative as well as for RFDS 1 and RFDS 2 for each resource topic. Descriptions of the No-action Alternative as well as the RFDS 1 and 2 under all of the action alternatives are found in section 2.4.4.

The results of the transportation analysis (section 4.2.9) indicate that there are no mitigation measures outside of changes to signal timing. Therefore, the evaluations in the following sections do not consider further indirect impacts from the implementation of these mitigation measures to the other resources.

4.2.1 Earth Resources

The following sections describe the environmental consequences relevant to the future redevelopment of the JEH parcel and associated study areas for earth resources.

EARTH RESOURCES ASSESSMENT OF SIGNIFICANCE

Impacts to earth resources would not result in significant impacts, as defined in section 3.2.3.

4.2.1.1 Geology and Topography

Impacts to geology and topography are evaluated for the No-action Alternative at JEH as well as RFDS 1 and RFDS 2, which are common to all action alternatives evaluated in the EIS.

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to existing geology or topography because there would be no disturbance to the JEH building and parcel.

RFDS 1

Under RFDS 1, there would be no measurable impacts to geology or topography. Although the interior of the JEH building would be renovated, no changes to the topography or geologic substrate would occur from redevelopment.

RFDS 2

Under RFDS 2, there would be no measurable impacts to topography. Although demolition of the JEH building would occur during construction, it is anticipated that little regrading would be necessary to redevelopment the site. The parcel would remain relatively flat once construction is complete.

Demolition of the current structure and the redevelopment of the parcel, according to the land use controls described in section 4.1.4, would result in indirect impacts to geology. The existing geologic substrate at the parcel would be affected by the demolition of the JEH building and subsequent clearing of the parcel, as well as construction activities associated with its redevelopment. The JEH parcel currently includes underground parking, so there has already been extensive excavation within the parcel. Demolition and construction activities would impact geology primarily through excavation, grading, leveling, filling, compaction, and the drilling of footers. The geologic features at the parcel have been previously disturbed and their natural composition altered by the introduction of artificial fill and the construction of the JEH building, and as such, the redevelopment of the parcel would not affect any features that have not been previously impacted. Given the relatively small land area containing the parcel, and the fact that there would not be a substantial change in site characteristics with the proposed redevelopment, there would be no measurable impacts to geology.

4.2.1.2 Soils

Impacts to soils are evaluated for the No-action Alternative at JEH as well as RFDS 1 and RFDS 2, which are common to all action alternatives evaluated in this EIS.

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to soils because no ground-altering activities would occur, and therefore no soils would be disturbed.

RFDS 1

Under RFDS 1, there would be no measurable impacts to soils. No soils would be disturbed during the interior renovation of the JEH building.

RFDS 2

Under RFDS 2 there would be indirect, short-term, adverse impacts to soils associated with construction activities. The existing soils at the parcel would be affected by the demolition and subsequent clearing of the parcel, as well as construction activities associated with the redevelopment. Demolition and construction at the parcel would result in the temporary impacts associated with soil disturbance. Construction activities would temporarily compact, expose, disturb, and modify the structure of soils during earth-moving activities, including excavation, grading, leveling, filling, and compaction. These impacts would be limited in geographic extent, and associated with the construction phase only. Soils at the parcel have been previously disturbed, their natural composition altered, and all productivity removed by historic construction activities associated with the JEH building and parcel, and as such, the redevelopment of the parcel would not impact any soils that have not been previously impacted.

The disturbance to the parcel during construction would temporarily expose soils and potentially lead to increased erosion from stormwater runoff; however, all applicable regulations and best management practices would be followed to minimize the potential for adverse impacts stemming from erosion. Stormwater runoff carrying sediment could enter the combined sewer system during overflow events and discharge directly to the Anacostia River, leading to impacts to water quality within that waterway. The exchange partner would be responsible for obtaining required permits in compliance with the Clean Water Act (CWA) and District of Columbia regulations, and for developing any required sediment and erosion control and stormwater pollution prevention plans. The construction activities at the parcel would be required to comply with the District of Columbia stormwater rule under the existing large municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) permit for stormwater management. Sediment targets are met through a focus on the implementation of urban stormwater management projects outlined in various Watershed Implementation Plans. Implementing best management practices (BMPs), such as the use of silt fencing and erosion matting to minimize erosion of sediment due to stormwater runoff during and following construction.

Over the long term, there would be no measurable impacts because there would be a minimal change in the parcel's soil characteristics. There is the potential for long-term, beneficial impacts to soils as a result of landscaping and low-impact development techniques that could reduce the overall amount of impervious surface and erosion potential at the parcel. The introduction of these landscape elements could also result in soil productivity improvements. The range of beneficial impacts would vary greatly depending on the amount of landscaping and the extent of damage to the soils from previous disturbances and alterations, including construction impacts, all of which are unknown at this time.

4.2.2 Water Resources

Impacts to water resources are evaluated for the No-action Alternative at JEH as well as RFDS 1 and RFDS 2, which are common to all action alternatives evaluated in this EIS.

WATER RESOURCES ASSESSMENT OF SIGNIFICANCE

Impacts to water resources would not result in significant impacts, as defined in section 3.3.3.

4.2.2.1 Surface Water

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to surface water resources because there would continue to be no surface water features on the parcel.

RFDS 1

Under RFDS 1, there would be no measurable impacts to surface waters because there would continue to be no surface water features on the parcel.

RFDS 2

Under RFDS 2, there would be no measurable impacts to surface water. However, there could be indirect, short-term, adverse impacts to surface water during construction activities. Under RFDS 2, the existing JEH building would be demolished and the parcel would be redeveloped according to land use controls as described in section 4.1.4. The disturbance to the parcel would temporarily expose soils and potentially lead to increased erosion and water quality issues, as described in section 4.2.1.2. Operation of construction equipment increases the likelihood of accidental leaks or spills of fuel, lubricants, or other materials. The exchange partner would be responsible for obtaining required permits, implementing BMPs as described in section 4.2.1.2, and complying with the CWA and District of Columbia regulations. Construction activities at the parcel would be required to comply with the District of Columbia stormwater rule under the existing MS4 NPDES permit for stormwater management to ensure compliance with water quality standards and protect receiving waters from impacts. Through the Chesapeake Bay Total Maximum Daily Load (TMDL), Washington, D.C., has specific sediment and nutrient limits allocated for the urban sector that must be met for water quality standards to be attained within the Chesapeake Bay watershed. Sediment targets are met through a focus on the implementation of urban stormwater management projects that are generally documented in Watershed Implementation Plans. In addition to following a Watershed Implementation Plan, redevelopment of the parcel would also require the implementation of BMPs, such as the use of silt fencing and erosion matting to minimize erosion of sediment due to stormwater runoff during and following construction.

JEH SURFACE WATER ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH HYDROLOGY ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: Indirect, short-term, adverse impacts and indirect, long-term, beneficial impacts.

JEH GROUNDWATER ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

4.2.2.2 Hydrology

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts because there would be no change to hydrology at the JEH parcel.

RFDS 1

Under RFDS 1, there would be no measurable impacts to hydrology. Although the interior of the JEH building would be renovated, no changes to the parcel hydrology would occur.

RFDS 2

Under RFDS 2, the hydrology of the parcel would continue to be composed of stormwater runoff rather than natural surface waters. The exchange partner would be responsible for obtaining required permits in compliance with local stormwater regulations and for developing any required stormwater management plans, as described in sections 4.2.1.2 and 4.2.2.1. Before the enactment of the current stormwater regulations, projects were not required to retain specific volumes of stormwater. Implementation of sediment and erosion control measures, stormwater control and mitigation BMPs such as infiltration basins, as well as low-impact development techniques such as pervious pavement, as required by District of Columbia regulations, would reduce the quantity of stormwater runoff during and after construction. BMPs would minimize indirect, adverse impacts from the future redevelopment of the parcel.

As part of the District of Columbia stormwater management rule (21 DCMR §5 [2013]), actions under RFDS 2 would be considered major land-disturbing and/or major substantial improvement activities. These activities must meet stormwater management performance requirements regulating volumes of stormwater runoff and peak discharge rates that must be maintained during and after construction. A stormwater management plan that outlines the BMPs, land cover, and actions that would be implemented to meet these requirements must be submitted. More information regarding BMPs specific to Washington, D.C., can be found in section 3.3.3.4. Furthermore, low-impact development techniques supported by stormwater management programs and initiatives throughout Washington, D.C., would also reduce the volume of stormwater, particularly stormwater that enters the combined sewer system. There would be no increase in impervious surfaces, and there could be a potential effective decrease in impervious surfaces, given the development requirements in the zoning and stormwater regulations.

In accordance with Federal and District of Columbia regulations, the exchange partner would be required to comply with the District of Columbia stormwater rule under the existing MS4 NPDES permit, and implement BMPs to control stormwater runoff into the Potomac River through the development of appropriate management plans and the use of sediment and erosion control measures. Plans include a stormwater management and pollution prevention plan and a sediment and erosion control plan. Further guidance and strategies for managing stormwater and associated sediment erosion can be found in the various Watershed Implementation Plans associated with the Chesapeake Bay TMDL.

Under RFDS 2, there would be indirect, short-term, adverse impacts to hydrology as a result of temporary alterations in stormwater drainage, and the increased risk of reductions in water quality as a result of construction activities. These impacts would be minimized by compliance with the CWA and District of Columbia stormwater management rule which would require the implementation of BMPs.

After construction is completed, there would be indirect, long-term beneficial impacts to hydrology resulting from implementation of BMPs and low-impact development techniques that were not required when the JEH building was initially constructed, but are currently required for any major land-disturbing projects within Washington, D.C., as described earlier in this section.

4.2.2.3 Groundwater

No-action Alternative

Under the No-action Alternative at JEH, no measurable impacts to groundwater would occur because there would be no construction or other activities that would disturb groundwater within the parcel.

RFDS 1

Under RFDS 1, there would be no measurable impacts to groundwater. Although interior of the JEH building would be renovated, no ground-disturbing activities would occur.

RFDS 2

There is some chance that shallow groundwater resources would be disturbed by the redevelopment of the parcel, and the potential to build additional subterranean levels for parking. The presence of shallow groundwater within the parcel may require dewatering operations to facilitate excavation and grading during construction. Potential impacts to local groundwater resources include modification of groundwater levels through drawdown or diversion of flow; dewatering would result in short-term minor adverse impacts in the vicinity of construction only. Any shallow groundwater resources at the parcel have already been disturbed by the existing development. The exchange partner would implement appropriate measures to prevent any groundwater contamination, including the handling of any hazardous materials used during construction. As described in section 4.1.2.3, groundwater is typically not used as a source of potable water in the District. Should groundwater be needed in support of the new development, the exchange partner would be required to comply with all applicable regulations, including those enforced by the District Department of the Environment and the DC Municipal Regulations Parts 1150–1158 for any groundwater uses.

Permitting requirements that would mitigate impacts to groundwater include an NPDES General Construction Permit for discharges of dewatered groundwater, if necessary. The exchange partner may be required to implement BMPs to prevent contamination of groundwater during construction, including not allowing fuels or other materials to leach into the ground. The stormwater and erosion and sediment control BMPs and low-impact development techniques described in sections also could reduce potential contamination of groundwater.

4.2.2.4 Wetlands

Because there are no wetlands on the JEH parcel, there would be no measurable impacts to wetlands under the No-action Alternative, RFDS 1, or RFDS 2.

4.2.2.5 Floodplains

No-action Alternative

Under the No-action Alternative at JEH, no measurable impacts would occur because there would be no change to the infrastructure or activities occurring within the floodplain at the JEH parcel.

RFDS 1

Under RFDS1, no measurable impacts would occur. Although the interior of the JEH building would be renovated, there would be no changes to the configuration of the structures on the parcel or to parcel topography.

RFDS 2

Under RFDS 2, there would be no measurable impacts to floodplains because the JEH parcel is already currently developed and the floodplain and its associated values have been disturbed. Much of the parcel is located within the 500-year floodplain with a small area of the southern portion of the JEH parcel located within a 100-year floodplain. As described in section 4.1.2.5, the recent completion of the 17th Street levy may result in future floodplain delineations excluding the JEH parcel. Notwithstanding, floodplains and associated functions and values at the parcel have already been disturbed by the existing urban environment of downtown Washington, D.C. GSA has evaluated the exchange in accordance with GSA's Floodplain Management Desk Guide, which outlines an eight-step process required for actions that stimulate development in a floodplain. GSA would inform the exchange partner that the parcel contains land within the 100-year floodplain. Because the JEH parcel is already developed, there would be no net loss of the beneficial natural values of the floodplain from future redevelopment. The exchange partner would be required to adhere to appropriate building practices for construction in a floodplain, such as not changing the natural flood channel, developing a flood management plan, or adhering to building codes for construction in a floodplain. Therefore, there would be no measurable impacts to floodplains. Public notification regarding the Proposed Action in the 100-year floodplain at the JEH parcel would be provided in the Record of Decision (ROD), and the public would have an additional opportunity to comment on the Final EIS and ROD.

4.2.3 Biological Resources

Impacts to biological resources are evaluated for the No-action Alternative at JEH as well as RFDS 1 and RFDS 2, which are common to all action alternatives evaluated in this EIS.

BIOLOGICAL RESOURCES ASSESSMENT OF SIGNIFICANCE

Impacts to biological resources would not result in significant impacts, as defined in section 3.4.3.

4.2.3.1 Vegetation

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to vegetation because there would be no disturbance or change to the existing vegetation.

RFDS 1

Under RFDS 1, no measurable impacts would occur to vegetation. Although the interior of the building would be renovated, there would be no disturbance or change to the existing vegetation on the parcel.

RFDS 2

Under RFDS 2, there would be indirect, short-term, adverse impacts to vegetation associated with the removal of vegetation during the construction period. The existing vegetation on the parcel would be removed during construction, and the parcel would be re-landscaped once construction is complete. There is the potential for long-term, beneficial impacts to vegetation as a result of landscaping and low-impact development techniques that could reduce the overall amount of impervious surface and increase the amount of vegetation within the parcel. The range of beneficial impacts would vary greatly depending on the amount of landscaping and the types of vegetation introduced, both of which are unknown at this time. Notwithstanding, it is possible that one or more of the existing rows of street trees could be permanently removed. Therefore, there could be beneficial or adverse impacts under RFDS 2, but there is insufficient information available to make an impact determination at this time.

JEH WETLANDS ENVIRONMENTAL CONSEQUENCES SUMMARY

- **No-action Alternative**: No measurable impacts.
- **RFDS 1**: No measurable impacts.
- **RFDS 2**: No measurable impacts.

JEH FLOODPLAIN ENVIRONMENTAL CONSEQUENCES SUMMARY

- **No-action Alternative**: No measurable impacts.
- **RFDS 1**: No measurable impacts.
- **RFDS 2**: No measurable impacts.

JEH VEGETATION ENVIRONMENTAL CONSEQUENCES SUMMARY

- **No-action Alternative**: No measurable impacts.
- **RFDS 1**: No measurable impacts.
- **RFDS 2,** Indirect, short-term, adverse impacts.

JEH AQUATIC SPECIES ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH TERRESTRIAL SPECIES ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: Indirect, short-term, adverse impacts.

JEH SPECIAL STATUS SPECIES ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

4.2.3.2 Aquatic Species

Because there are no aquatic species on the parcel, and no water resources in the immediate vicinity that could be affected by development activities, there would be no measurable impacts to aquatic species under the No-action Alternative, RFDS 1, or RFDS 2 at the JEH parcel.

4.2.3.3 Terrestrial Species

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to terrestrial wildlife because there would be no construction activities, nor would there be any change to the amount of habitat on the parcel.

RFDS 1

Under RFDS 1, no measurable impacts would occur to terrestrial wildlife. Although the interior of the JEH building would be renovated, there would be no exterior construction activities and no change to the amount of habitat on parcel.

RFDS 2

Under RFDS 2, there would be indirect, short-term, adverse impacts to terrestrial species. There are currently few terrestrial species present on the JEH parcel due to a lack of suitable habitat. The little habitat for small urban animal species that currently exists on the parcel would be removed during construction. Additionally, the noise produced from construction activities may disturb terrestrial species on adjacent land, causing them to temporarily relocate. Once construction is complete, populations of urban terrestrial species would likely return to the parcel and its environs. There is the potential for long-term, beneficial impacts to terrestrial species as a result of landscaping and low-impact development techniques that could increase the amount and quality of suitable habitat within the parcel. The range of beneficial impacts would vary greatly depending on the amount of landscaping and the types of vegetation introduced, both of which are unknown at this time.

4.2.3.4 Special Status Species

No special status species occur at the parcel, therefore there would be no measurable impacts to special status species under the No-action Alternative, RFDS 1, or RFDS 2 at the JEH parcel.

4.2.4 Land Use, Planning Studies, and Zoning

LAND USE, PLANNING STUDIES, AND ZONING ASSESSMENT OF SIGNIFICANCE

Impacts to land use and zoning would not result in significant impacts, as defined in section 3.5.3.

4.2.4.1 No-action Alternative

Under the No-action Alternative at JEH, no new measurable impacts are expected because there would be no change to the JEH parcel that would alter existing land use or zoning. The development on the parcel would continue to disagree with certain objectives of the PAP.

4.2.4.2 RFDS 1

Under RFDS 1, there would be indirect, long-term, adverse impacts to land use. Although the interior of the JEH building would be renovated, minimal exterior alterations would be made, and the parcel would be rezoned to D-7. The continued existence of the JEH building in its current configuration would continue to disagree with some planning principals for this portion of Pennsylvania Avenue, namely the stimulation of street life, diversity of uses, and the lack of pedestrian access through the parcel, especially with regards to the closed D-Street right-of-way (ROW), which is part of the original L'Enfant Plan.

4.2.4.3 RFDS 2

Under RFDS 2,there would be indirect, long-term, beneficial impacts to land use. The existing JEH building would be demolished and the parcel would be redeveloped according to land use controls as described in section 4.1.4. The parcel would contain multiple buildings with pathways between them for improved pedestrian access. There would be a mix of commercial and residential uses with ground floor retail space. A mixed-use development would align with the goals of land use plans in the area, including the District and Federal Elements of the Comprehensive, the Pennsylvania Avenue Plan, the Pennsylvania Avenue Initiative, and Extending the Legacy: Planning America's Capital for the 21st Century. Additionally, the redevelopment of the JEH building would align with the streetcar Land Use Study by providing increased programming that would contribute to the increased use of the potential streetcar development in downtown Washington, D.C. The addition of residential properties would increase programming in the neighborhood, enhance the economic vitality of the surrounding commercial uses, and contribute to a pedestrian friendly streetscape.

RFDS 2 would be consistent with limits on building heights, setbacks, density, and use found in the proposed DCOP D-7 zoning, and the Height of Buildings Act. Additionally, an Amendment to the PAP and subsequent development of Square Guidelines, currently underway, would ensure that future development of the parcel is consistent with the land use, historic preservation and design goals of the Avenue.

4.2.5 Visual Resources

VISUAL RESOURCES ASSESSMENT OF SIGNIFICANCE

Impacts to land use and zoning would not result in significant impacts, as defined in section 3.6.3.

4.2.5.1 No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impact to visual resources because the defining visual characteristics and aesthetics of the JEH building would not be altered. The D Street ROW would continue to be hindered, and Pennsylvania Avenue would continue to undulate.

4.2.5.2 RFDS 1

Under RFDS 1, there would be no measurable impact to visual resources. Although the interior of the JEH building would be renovated, no exterior alterations that would alter its visual character would occur. The D Street ROW would continue to be hindered, and Pennsylvania Avenue would continue to undulate.

4.2.5.3 RFDS 2

Under RFDS 2, the existing JEH building would be demolished and the parcel would be redeveloped according to the following land use controls:

- the PAP General Guidelines and Square Guidelines, currently in the process of being updated;
- the Height of Buildings Act; and
- proposed D-7 zoning regulations, which would permit the highest density commercial development achievable under the Height of Buildings Act. This change in zoning would reinforce Pennsylvania Avenue's role as a physical and symbolic link between the White House and the U.S. Capitol while also promoting concentrations of retail to reinforce the area's historic role as a center for retail commerce.

Currently, the JEH building has a fortress-like façade that is not consistent with the historical and cultural character of the area. As a result of the historic preservation, planning, and design principles that would be included in future Square Guidelines, the redevelopment of this parcel under RFDS 2 would ensure future development is more consistent with the unique historical and cultural character of the area than the existing structure. Notably, the reintroduction of D Street as a pedestrian ROW would better align the parcel's development with the L'Enfant Plan.

Views of the JEH parcel along Pennsylvania Avenue from the U.S. Navy Memorial Plaza, Market Square, National Archives, the Department of Justice, Old Post Office building, Evening Star building, and the William Jefferson Clinton Federal building would remain largely consistent with current views. This was determined by comparing the RFDS parameters to the characteristics of the existing building, and qualitatively identifying any changes that would result in impacts. Depending on the setback requirements elucidated in the Square Guidelines, the building setback along Pennsylvania Avenue NW, 9th Street NW, 10th Street NW, and E Street NW may decrease, however it is anticipated that the changes would be consistent with the overall visual character of the area, and that these changes would not cause the buildings to encroach into existing ROWs such that views are adversely impacted. Views from adjacent buildings into the parcel along the surrounding streets, including views from Ford's Theatre would also remain consistent with current views. Other prominent locations with currently limited views of the JEH parcel along 9th, 10th, and E Streets NW include the Smithsonian National Museum of Natural History and the National Mall. Views of the JEH parcel from these locations could be more prominent as taller buildings would potentially be allowed closer to the Avenue.

Under RFDS 2, there would be would be indirect, long-term, beneficial impacts to visual resources due to the anticipated improvements in aesthetic and visual quality of the redevelopment. There could be indirect, long-term, adverse impacts due to increased height and reduced setbacks of the redevelopment, however the development of a Plan Amendment and Square Guidelines would mitigate or avoid these adverse impacts.

JEH LAND USE AND ZONING ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: Indirect, long-term, adverse impacts.

RFDS 2: Indirect, long-term, and beneficial.

JEH VISUAL RESOURCES ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: Indirect, long-term, beneficial impacts.

JEH ARCHAEOLOGICAL RESOURCES ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH HISTORIC RESOURCES ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

4.2.6 Cultural Resources

CULTURAL RESOURCES ASSESSMENT OF SIGNIFICANCE

Impacts to cultural resources would not result in significant impacts, as defined in section 3.7.3.

4.2.6.1 Archaeological Resources

No-action Alternative

Under the No-action Alternative at JEH, no measurable impacts to archaeology would occur because there would be no excavation or other ground-disturbing activities at the JEH parcel.

RFDS 1

Under RFDS 1, there would be no measurable impacts to archaeology. Although the interior of the JEH building would be renovated, no excavation or other ground-disturbing activities would occur.

RFDS 2

Under RFD2, there would be no measurable impacts. Although there would be subsurface excavation, the parcel has previously been excavated and the potential for extant archaeological resources on the parcel is extremely low.

Should there be an unanticipated discovery of archaeological resources during construction, a stipulation of the Section 106 PA would require additional consultation with the DC SHPO and other parties through the standard review process under 36 CFR §800. Through this ongoing process, it is assumed that any impacts to archaeological resources would be avoided or mitigated to the extent that they would be negligible.

4.2.6.2 Historic Resources

No-action Alternative

Under the No-action Alternative, no measurable impacts to historic resources would occur because the JEH parcel would remain in government ownership and the site would not be redeveloped.

RFDS 1

Under RFDS 1, there would be no direct impacts as a result of the exchange of the JEH parcel because the JEH building is not historic. Additionally, there would be no measurable indirect impacts to historic resources. Although the interior of the building would be renovated, there would be no alteration to the existing form and massing of the JEH building, and a regulatory and review processes exists to ensure consistency with the historic context of the Pennsylvania Avenue NHS and other historic resources.

RFDS 2

Similar to RFDS 1, under RFDS 2 there would be no direct impacts from the exchange of the JEH parcel as the JEH building is not historic. Under RFDS 2, there would be the potential for indirect impacts to historic properties within the area of potential effect as the exchange could ultimately result in the redevelopment of Squares 378 and 379 which sits within the Pennsylvania Avenue NHS and adjacent to numerous national historic districts. To address potential indirect impacts that could result a procedural Section 106 Programmatic Agreement (PA) will be developed. The procedural PA will outline regulations and other legally enforceable processes already in place to ensure redevelopment avoids, minimizes, and mitigates potential impacts; should these conditions not be met, the PA will outline a process for reinitiating Section 106 consultation. The PA among GSA, NCPC, NPS, the U.S. Commission of Fine Arts (CFA), the DC SHPO and other signatory consulting parties, would require the development of a Plan Amendment to the PAP and Square Guidelines for Squares 378 and 379 prior to the exchange of the parcel. Due to its location within the Pennsylvania Avenue NHS and the jurisdictional boundaries of the Shipstead-Luce Act, the redevelopment of the parcel under this scenario would require review and permitting approval by the D.C. Historic Preservation Review Board and CFA. All modifications made to the property by the exchange partner after exchange would be reviewed for their conformity to the PA, Plan Amendment, Square Guidelines, and the PAP by GSA and NCPC under Section II of the 1996 PADC MOA. Renovation of the existing building would be subject to other local regulatory processes that would require alterations conform to local design, historic preservation, zoning and other regulations.

Under RFDS 2, there could be indirect, long-term, adverse impacts to historic properties because the existing character of the area would be altered. However, these potential impacts would be avoided by the enforcement of the Section 106 PA, which outlines the regulatory and review processes described in this section, including the enforced conformity to Square Guidelines, PAP, and other regulations.

4.2.7 Socioeconomic and Environmental Justice

SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE ASSESSMENT OF SIGNIFICANCE

Impacts to socioeconomics and environmental justice would not result in significant impacts, as defined in section 3.8.3.

Impacts related to changes in population and demographics as a result of the proposed JEH alternatives (RFDS 1 and RFDS 2) are considered in the context of the local economy of Washington, D.C., and the Washington, D.C., MSA. Impacts to businesses that provide services to residents and commuters, such as retail establishments, food facilities, and others are evaluated qualitatively. Impacts to tax revenues, population, housing, schools, and community facilities and services of Washington, D.C., and the Washington, D.C., MSA are all described qualitatively. Benchmarks for some impacts, such as impacts to construction employment, have been created by identifying the greatest annual change over a recent historical period to create a quantitative threshold for the magnitude of impacts on each resource. For this analysis, it is assumed that the employees who would work in commercial space in the JEH building under alternatives RFDS 1 and 2 already work in Washington, D.C., live in the MSA, and would not relocate their permanent residences when their workplace relocates to the JEH parcel.

4.2.7.1 Population and Housing

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to population or housing in the Washington, D.C., MSA because there would be no change in the location of FBI HQ facilities or employees, and no major construction would take place on the JEH parcel.

RFDS 1

Under RFDS 1, there would be no measurable impact to population or housing in Washington, D.C., or the Washington, D.C., MSA. The FBI would vacate the JEH parcel and the parcel would remain empty of operational employees during the renovation period. During the future operational period of the building, the total workforce would be similar to the current building's employed workforce. Therefore, the approximate net change in workforce as a result of the renovation of the building would be zero. Because the employed workforce of the building would not change from the Existing Condition and because all new employees are expected to currently reside in the Washington, D.C., MSA and not relocate their permanent residence as a result of this redevelopment scenario, there would be no measurable impact to population or housing in Washington, D.C., or the Washington, D.C., MSA.

RFDS 2

Construction of the new 1,066 residential units under this scenario would lead to a direct increase in the population and housing of Washington, D.C., and the Washington, D.C., MSA. Each new residential unit is expected to be 750 SF. This analysis assumes two occupants would inhabit each unit. Thus, if each unit was occupied, this would increase the population in Washington, D.C., and the Washington, D.C., MSA by 0.34 percent and 0.04 percent, respectively, from their 2013 populations. This population increase is less than the greatest year-over-year population change in recent history, between 2009 and 2010 in Washington, D.C., at 2.6 percent and between 2005 and 2006 in the Washington, D.C., MSA at 3.3 percent. This change in population would result in an indirect and long-term impact to the local population. The level of impact and the adverse or beneficial nature of the impact resulting from a change in population are discussed in the following section because a change in population impacts housing, employment, income, recreation, and community services in different ways.

Under this scenario, available housing would increase in Washington, D.C., and the Washington, D.C., MSA by 0.4 percent and 0.05 percent, respectively. In recent history, the greatest year-over-year increase in housing vacancy occurred between 2009 and 2010 in Washington, D.C. (23.9 percent) and between 2005 and 2006 in the Washington, D.C., MSA (1.8 percent). The latest total housing vacancy statistics for these two areas are shown in section 4.1.7.1. The increase associated with the addition of 1,066 housing units under this scenario would be less than both of these historical extreme changes and would make up less than one percent of all vacant housing in both Washington D.C. and the Washington, D.C. MSA.

JEH POPULATION & HOUSING ENVIRONMENTAL CONSEQUENCES SUMMARY

- **No-action Alternative**: No measurable impacts.
- **RFDS 1**: No measurable impacts.
- **RFDS 2:** Indirect and long-term impacts to population; insufficient information available to determine the impacts to the homeownership and rental markets.

JEH EMPLOYMENT & INCOME ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: indirect, short-term, beneficial impacts.

RFDS 2: Indirect, short- and long-term, beneficial impacts to employment and income; indirect, short-term, adverse impacts to sales, income, and employment.

As this housing unit increase would provide more housing for local residents, this could lead to a slight decrease in housing prices by increasing housing supply. Therefore, this alternative could result in indirect, short-term, beneficial impacts to homebuyers, and, conversely, result in adverse impacts to home sellers due to increased housing supply in the local market. Should the units be marketed as rental units, similar beneficial and adverse impacts could occur to renters and landlords, respectively. Since the number of residential units that would be owner- or renter-occupied is unknonwn at this time, there is insufficient information available to determine the impacts to the homeownership and rental markets under this alternative.

In addition to new housing, new ground-floor retail establishments would be added to the site. These new retail establishments would likely be staffed predominantly by individuals who already reside in Washington, D.C., or the Washington, D.C., MSA. However, some staff members at these businesses, such as owners and managers, would likely relocate to Washington, D.C., or the Washington, D.C., MSA to operate these retail stores.

Under RFDS 2, there would be indirect and long-term impacts to population, as population would increase in Washington, D.C., and the Washington, D.C., MSA. There would be both beneficial and adverse impacts to housing. There would be indirect, short-term, beneficial impacts to homebuyers because housing prices would be reduced, and indirect, short-term, adverse impacts to home sellers because their home prices, independent of other factors affecting home prices, would be reduced.

4.2.7.2 Employment and Income

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to employment or income in Washington, D.C., or the Washington, D.C., MSA because the number of employees at the parcel would not change, and economic development, employment, and income changes associated with construction activities and redevelopment would not occur under this scenario.

RFDS 1

Because the JEH building would undergo interior renovations, there would be impacts resulting from localized construction worker spending and construction employment under RFDS 1.

Renovation and Operations-related Spending

For the purpose of this analysis, it is assumed that a majority of renovation-related spending associated with the interior renovation of the JEH building would occur within the Washington, D.C., MSA. All renovation spending is assumed to be new dollars spent in the Washington, D.C., MSA. Impacts to business sales, employment, and income would have indirect impacts to the local economy. These new dollars spent on renovation at the parcel would result in indirect impacts on business sales, employment and employee income. This spending and the impacts from this spending would be primarily concentrated within the construction industry. Indirect impacts would occur from purchases of goods and services and salary payments by businesses that have been contracted to support or provide materials for the renovation under this scenario. Induced impacts would occur throughout Washington, D.C., and the Washington, D.C., MSA as a result of spending by employees receiving incomes as result of this project.

Once renovation is complete and operation of the JEH building recommences, daily expenditures by employees and office-related spending on maintenance and office supplies and services would be similar to current levels. Because the parcel would continue to support approximately the same number of employees during a regular work week relative to existing conditions, operations-related spending would have no measurable impact to employment or income in Washington, D.C., or the Washington, D.C., MSA.

Overall, there would be indirect, short-term, beneficial impacts to employment and income within Washington, D.C., and the Washington, D.C., MSA as a result of construction-related spending, and no measurable impacts to employment and income within Washington, D.C., and the Washington, D.C., MSA as a result of operations-related spending.

Renovation Employment

The construction sector, which includes employment in renovation, is considerable in the Washington, D.C., MSA; it comprised 4.6 percent (181,745 jobs) of all of jobs in the Washington, D.C., MSA in 2011, the latest year in which jobs in this industry were disclosed (BEA 2013). In Washington, D.C., the number of construction industry jobs comprised approximately 3 percent of all jobs in 2013. The total number of jobs in the construction industry in the Washington, D.C., MSA was approximately 11 times larger than the number of jobs in the construction industry in Washington, D.C.

The largest year-over-year increase (10 percent) in construction jobs in the Washington, D.C., MSA occurred between 2005 and 2006 (BEA 2013). The greatest year-over-year negative change in construction employment in the Washington, D.C., MSA occurred between 2007 and 2008 with an approximate 15 percent decrease in construction full-time and part-time jobs (BEA 2013). This represents a loss of 38,044 jobs in the Washington, D.C., MSA.[1]

[1] BEA data on construction jobs in the Washington, D.C., MSA for 2012 and 2013 was not available so the historic year-to-year change was identified only for 2001 to 2011.

RFDS 1 is expected to require approximately 2.4 million gross square feet (GSF) of renovation. According to the St. Elizabeths EIS, this level of renovation would require 6,720 full-time equivalent construction workers for a one-year period. These workers would earn an average salary of approximately $46,900, resulting in approximately $315 million in construction wages that would result directly from project spending. However, it is not likely that all 6,720 construction workers would be employed for only one year and, instead, the project would occur over multiple years which would reduce the impact to the local construction workforce.

MWCOG expects employment in the construction industry in Washington, D.C., to grow by 202 jobs per year until 2020. When this growth is extrapolated to the Washington, D.C., MSA, it is anticipated that 962 new jobs would be created annually until 2020 within the Washington, D.C., MSA. As the greatest historical year over year increase in construction jobs resulted in an increase of 22,000 construction jobs and as the maximum one year increase in construction laborers associated with this project is anticipated to be approximately 6,720 laborers, it is anticipated that the local construction labor pool could provide these workers. While it is anticipated that the majority of the construction workers would come from the Washington, D.C., MSA, due to the amount of future construction planned for the area, it is likely that some workers could relocate to the Washington, D.C., MSA as a result of RFDS 1. In addition, some specialized renovation workers may temporarily relocate to the Washington, D.C., MSA during the renovation period to fill jobs that cannot be filled by the local construction laborer pool. Any temporary relocation of construction workers to the Washington, D.C., MSA would have indirect, short-term, beneficial impacts to the local lodging and food and beverage sectors as these renovation workers spend their income in the Washington, D.C., MSA.

Some local businesses located near the JEH parcel could be impacted as a result of a gap in full-time employment at the JEH building during the renovation period and interruptions to foot traffic caused by the renovation. This could result in lost sales and income to these businesses.

Operations Employment

Under RFDS 1, there would be no measurable impact to employment and income from operations employment because the employed workforce of the redeveloped JEH building would not change from the Existing Condition, the operations-workforce is expected to currently reside in the Washington, D.C., MSA, and it is not anticipated that these workers would relocate their permanent residence as a result of this scenario.

RFDS 2

Under RFDS 2. There would be indirect, long-term, beneficial operations- and retail-related spending impacts to employment and income in Washington, D.C., and the Washington, D.C., MSA. Residents who relocate to Washington, D.C., or the Washington, D.C., MSA from outside of these two areas would have indirect, long-term, beneficial impacts on income, sales, and employment in Washington, D.C., and the Washington, D.C., MSA as a result of their spending on rent, food, and other services.

Construction, Commercial and Retail Operations, and Residential-related Spending

Impacts to sales, employment, and income occurring as a result of construction spending under RFDS 2 would be similar to, but greater than those described for RFDS 1. A larger construction workforce would be required under this scenario than under RFDS 1. Therefore, it is assumed that short-term impacts to business sales, employment, and income in Washington, D.C., and the Washington, D.C., MSA, resulting from spending of construction dollars, would be greater under this scenario than under RFDS 1.

Commercial and retail operations-related spending would be slightly greater than the operations-related spending described under RFDS 1 because RFDS 2 would add retail shops to the bottom level of the JEH parcel which would increase the amount of retail-related spending associated with the JEH parcel relative to RFDS 1. This would result in indirect, long-term, beneficial operations- and retail-related spending impacts to employment and income in Washington, D.C., and the Washington, D.C., MSA. Therefore, there would be indirect, short- and long-term, beneficial impacts to employment and income in Washington, D.C., and the Washington, D.C., MSA as a result of construction-related spending and operations- and retail-related spending.

The new 1,066 residential units would be home to approximately 2,100 people who would spend their income in Washington, D.C., and the Washington, D.C., MSA. Residents who relocate to Washington, D.C., or the Washington, D.C., MSA from outside of these two areas would have indirect, long-term, beneficial impacts on income, sales, and employment in Washington, D.C., and the Washington, D.C., MSA as a result of their spending on rent, food, and other services.

Construction Employment

Impacts to construction employment occurring as a result of construction spending under RFDS 2 would be similar to, but greater than, those described under RFDS 1 because a larger construction workforce would be required under this scenario. RFDS 2 is expected to generate approximately 183,000 more GSF of construction space than RFDS 1. This would result in a total employment of 7,232 full-time equivalent construction workers for a one-year period. This would result in approximately $339 million in construction wages that would result directly from project spending. This increase in total employment and income associated with construction labor is about eight percent higher under RFDS 2 relative to RFDS 1.

JEH TAXES
ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: Indirect, long-term, beneficial impacts to tax revenues. Indirect, short-term, beneficial impacts to sales and income tax revenues.

RFDS 2: Indirect, long-term, beneficial impacts to tax revenues; indirect, short-term, beneficial impacts to sales and income tax revenues.

Similar to RFDS 1, a majority of the construction workforce under this scenario are anticipated to come from the Washington, D.C., MSA and are not anticipated to relocate to the Washington, D.C., MSA as a result of this scenario. However, due to the amount of future construction planned for the area, it is likely that some workers could relocate to the Washington, D.C., MSA as a result of RFDS 2 and that the amount of workers that could relocate would be slightly greater under this scenario than under RFDS 1.

Additionally, similar to the RFDS 1, some specialized construction workers may relocate temporarily to the Washington, D.C., MSA during the construction period. This relocation would have indirect, short-term, beneficial impacts to the local lodging and food and beverage sectors as specialized workers spend their income in the Washington, D.C., MSA. It is likely that construction employment levels, including local construction workers, and the total cost of this project would be higher under this scenario than under RFDS 1. The impacts to local construction employment would depend on the total cost and anticipated construction employment, which are unknown at this time.

Similar to RFDS 1, some local businesses located near the JEH parcel could be impacted as a result of a gap in full-time employment at the JEH building during the construction period and interruptions to foot traffic caused by the construction. This would result in lost sales and income to these businesses that would likely be greater than impacts described under RFDS 1 as the construction period under RFDS 2 is expected to last longer than the renovation period under RFDS 1. This would result in indirect, short-term, adverse impacts to businesses near the JEH parcel.

Commercial and Retail Operations Employment

Under RFDS 2, the employed operations workforce would be slightly greater relative to RFDS 1, as a result of ground-floor retail operations. Employment associated with the commercial space in the JEH building would not change from the Existing Condition. This increase in the employed operations workforce would result in an indirect, long-term, beneficial impact to employment in Washington, D.C., and the Washington, D.C., MSA.

4.2.7.3 Taxes

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to tax revenues in Washington, D.C., or the Washington, D.C., MSA because the JEH parcel would remain under the ownership of the Federal Government. This would mean that Washington, D.C., would continue to not receive property tax revenues from this parcel. There would be no employment of construction workers or spending on construction to generate sales or income taxes, and there would be no change in population or employment levels after construction to impact sales or income taxes.

RFDS 1

The transfer of the JEH parcel from a Federally owned parcel to a privately owned parcel would result in an increase in property tax revenues to Washington, D.C. Currently, no property taxes are collected on the site. Once the parcel is privately owned, property taxes can be collected.

There may be some impacts to income and sales taxes in Washington, D.C., and the Washington, D.C., MSA during the renovation period from income taxes that could be applied to the income of construction workers and sales taxes that could be applied to goods and services that are procured to support the renovation of the JEH building. This could result in indirect, short-term, beneficial impacts to sales and income tax revenues, respectively, for Washington, D.C. and Washington, D.C., MSA.

There would be no operations-related impacts to income and sales taxes because the workforce in the JEH building would remain approximately the same relative to the no action alternative, and the operations-related employees are not anticipated to relocate their permanent residences under this alternative. Therefore, there would be no measurable long-term impact to sales and income taxes under this scenario.

RFDS 2

Impacts to property taxes resulting from the transfer of the JEH parcel from a Federally owned parcel to a privately owned parcel would be the same as those described under RFDS 1.

Impacts to sales and income tax revenues for Washington, D.C., and the Washington, D.C., MSA, as a result of spending on the demolition and construction of the JEH parcel would be similar to but greater than those described under RFDS 1 because spending on demolition and construction under RFDS 2 is anticipated to be greater than spending on renovation under RFDS 1, resulting in comparably greater indirect, short-term, beneficial impacts to sales and income tax revenues.

Operations-related tax revenue impacts resulting from the income taxes of those employed in the commercial space in the new facility would be the same as those impacts described under RFDS 1 because the number of employees and the assumptions about the primary residences of those employees would remain this same under this scenario relative to RFDS 2. There would be no measurable long-term impact to sales and income taxes as a result of operation-related spending under this scenario.

There would be an increase in sales and income tax revenues to Washington, D.C., as a result of sales at the new retail and residential units under this scenario. Additionally, any products purchased within Washington, D.C., by individuals who relocated there, and any incomes earned by those same individuals would generate sales and income taxes for Washington, D.C. These increases in sales and income taxes in Washington, D.C., revenues would result in indirect, long-term, beneficial impacts.

4.2.7.4 Schools and Community Services

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impact to schools or community services because there would be no consolidation of the FBI HQ at a new site and no construction activities at the JEH parcel.

RFDS 1

While some specialized renovation workers may temporarily relocate to the Washington, D.C., MSA under this scenario, the majority of renovation workers are not expected to relocate. Over the long-term, the amount of future employees would not change from existing conditions, and all future employees likely reside in the Washington, D.C., MSA currently. Given the central location of the JEH parcel, it may be reasonably assumed that future employees would not relocate their permanent residence as a result of this development scenario. Therefore, no measurable impacts to local community services or schools would occur as a result of renovation or operations-related workforce employment.

The interior renovation of the JEH building is expected to result in a localized, incremental increase in demand for community services during renovation. The capacity of community services to respond to requests for assistance at the parcel likely already exists given its urban nature and the concentration of businesses already in the area. In particular, the progressively improved response times of the Washington, D.C. Metropolitan Police Department over the past two years indicate that this police force's capacity to respond to incidents has recently increased. However, there is insufficient information available at this time to determine these impacts as the amount of additional demand that would be placed on community services during the construction period is unknown.

RFDS 2

Impacts to schools and community services that would occur during the demolition and construction period under this scenario are similar to the impacts described during the renovation period under RFDS 1. However, impacts to police services, fire and emergency services, and medical facilities under this scenario would likely be slightly greater than those described under RFDS 1 because the construction activities would be of a larger magnitude and higher cost under RFDS 2, which could correlate with potentially greater adverse impacts to these community services. However, there is insufficient information available at this time to determine these impacts as the amount of additional demand that would be placed on schools and community services during the construction period is unknown.

The development of retail establishments and residential units under RFDS 2 would have a greater impact to schools and community services than the impacts described for RFDS 1 because the number of people occupying the site during the operational period would increase, as a result of employment at the retail establishments and the new residential population. This increased population would result in an increased number of school children and an increased use of community services.

The District of Columbia Public Schools currently enrolls 65,270 students. Current statistics provided by the U.S. Census indicate that 1 in every 14 persons in the census tract around RFDS 2 is a child. If all of these children attend schools then the local school population would grow by less than one percent as result of this scenario. Furthermore, it is likely that some of the future occupants of these units already live in Washington, D.C., and their relocation would not have an impact to the local school system. Impacts to schools, as a result of people relocating from outside Washington, D.C. and moving into these residential units is anticipated to result in an indirect, short-term, adverse impact to schools while schools adjust to this change in student population. Additionally, as public schools in Washington D.C. are currently underutilized (DCPS 2015) and schools would adjust over time to compensate for changes in enrollment, there would likely be no measurable impacts to schools. However, there is insufficient information available at this time to determine the long-term impacts that would occur to schools as the amount of additional demand that would be placed on schools as a result of this scenario is unknown.

Police services, fire and emergency services, and medical facilities in Washington, D.C., and the Washington, D.C., MSA would be impacted by those individuals that relocate from outside Washington, D.C., and the Washington, D.C., MSA to these residential units. The potential for indirect, adverse impacts would occur only while these services adjust to increases in the total serviced population. Over time, the income and property taxes paid by these new residents would be used to increase funding for community services in Washington, D.C., which would then be used to increase the service levels of these services, thereby avoiding long-term, adverse impacts resulting from the increased population at the parcel.

JEH SCHOOLS & COMMUNITY SERVICES ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: Insufficient information available to determine impacts to community services. No measurable impacts to schools.

RFDS 2: Insufficient information available to determine impacts to community services and no measurable impacts to schools in the short-term. Short-term impacts to community services during the operational period while these services adjust to a change in serviced population. Insufficient information available to determine long-term impacts to schools.

JEH RECREATION & OTHER COMMUNITY FACILITIES ENVIRONMENTAL CONSEQUENCES SUMMARY

Under the No-action Alternative, there would be no measurable impacts to recreation and community facilities.

Under both redevelopment scenarios, there is insufficient information available to determine impacts to recreation and other community facilities.

JEH ENVIRONMENTAL JUSTICE ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No long-term adverse impacts to minority or low-income communities.

RFDS 2: No long-term adverse impacts to minority or low-income communities.

4.2.7.5 Recreation and Other Community Facilities

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impact to recreation resources or community facilities because there would be no change in visitation to local parks, recreation centers, gyms, or other community facilities in the area surrounding the JEH parcel.

RFDS 1

Under RFDS 1, there could be a gap in full-time employment at the JEH building during the renovation period which would result in a temporary, slight decrease in visitation to local parks, recreation centers, gyms, or other community facilities. This impact could be short-term and both adverse and beneficial. Adverse impacts could result from visitors spending less income at these resources during the renovation period, and beneficial impacts could result to other recreation and community facilities users as a result of visitors using less of these facilities during the renovation period. Once the renovated building is re-opened, visitation and use of recreational facilities and other community facilities in proximity to the JEH parcel resulting from the redevelopment of this site would likely not measurably change from the existing conditions. However, there is insufficient information available at this time to determine the impacts that would occur to recreation and other community facilities at this site.

RFDS 2

Short-term impacts under this scenario would be the same as those described for RFDS 1, likely resulting in both adverse and beneficial impacts to local parks, recreation centers, gyms, and other community facilities during the demolition and redevelopment of the JEH parcel. Over the long-term, there could be greater visitation at recreation resources and other community facilities under this scenario as a result of the use of these resources and facilities by employees and visitors of the building's new retail establishments and residential units. The increased use of nearby community facilities as compared to the No-action Alternative, could also have both beneficial and adverse impacts. Given the increase in population at the parcel, there exists the potential for overuse of recreational resources and community facilities. As part of its long range planning, the companies and Washington, D.C. agencies that manage these facilities could explore adding capacity to existing facilities if they determine adequate demand exists. There could be beneficial impacts as a result of retail employees, retail visitors, and residential unit occupants spending their income at these resources and facilities. However, similar to the RFDS 1 scenario, there is insufficient information available at this time to determine the impacts that would occur to recreation and other community facilities.

4.2.7.6 Environmental Justice

Of the 18 census tracts within 1 mile of the JEH parcel in Washington, D.C., there are two tracts with relatively high minority populations, five tracts with more than 20 percent of their populations living below poverty, and one tract that meets both criteria. Therefore, slightly less than half of the census tracts within 1 mile of the JEH parcel contain sensitive communities.

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to sensitive populations because there would be no changes to employment, housing, income, population, schools or community services in Washington, D.C., or the Washington, D.C., MSA.

RFDS 1

The internal renovations of the current JEH building would create construction-related jobs in the short-term, resulting in further benefits to the local community and the Washington, D.C., MSA. These construction-related jobs could positively impact the local community and the Washington D.C., MSA through the creation of additional income and employment for local residents in the short-term. Some of the local residents that fill these jobs could come from low-income or minority communities. However, actual hiring practices would be determined by the construction contractor for this project; therefore, it is not certain that that any jobs created under this alternative would be filled by persons from the low-income or minority communities identified in section 4.2.7.6.

Under RFDS 1, there would be no measurable impacts to sensitive populations because, as indicated in sections 4.2.9, 4.2.10, and 4.2.11, there would be no adverse unmitigated impacts to transportation or transit services, air-quality, or noise, respectively, during the short- or long-term.

RFDS 2

The demolition and redevelopment of the JEH parcel would result in the creation of some new construction and retail-related jobs, resulting in further benefits to the local community and the Washington, D.C., MSA through the creation of additional income and employment for local residents. These new construction and retail-related jobs could positively impact the local community and the Washington D.C., MSA through the creation of new income and employment opportunities in both the short- and long-term. Some of the local residents that fill these jobs could come from low-income or minority communities. However, actual hiring practices would be determined by the construction contractor for this project or by proprietors of the retail businesses at the parcel; therefore, it is not certain that any jobs created under this alternative would be filled by persons from the low-income or minority communities identified in section 4.2.7.6. Furthermore, the addition of new housing could result in lowered housing prices as a result of increased supply, leading to indirect, short-term, beneficial impacts to minority and low-income homebuyers. However, indirect, short-term, adverse impacts could occur to minority and low-income home sellers as home prices, independent of other factors, could be lower as a result of increased housing supply. Similar to RFDS 1, there would be no adverse impacts to transportation or transit services, air quality, or noise under this alternative.

There could be some adverse impacts on sensitive communities living near the JEH parcel as a result of impacts from noise that would be adverse during the short-term demolition and redevelopment period. However, it is expected that construction crews would follow local noise ordinances, including timing of construction noise, in order to mitigate adverse impacts to sensitive populations.

There would be no long-term adverse impacts to minority or low-income communities under this scenario, and because short-term adverse impacts would have been mitigated to the extent practicable and permitted by law, there are not anticipated to be any environmental justice impacts under this scenario.

4.2.7.7 Protection of Children

No-action Alternative

The No-action Alternative would not create impacts or changes to the existing JEH parcel. Therefore, there would be no measurable impacts to children living near the parcel or children attending childcare centers or schools in proximity to the parcel.

RFDS 1

As described in section 4.1.7, there are a number of childcare centers and schools within a 1 mile radius of the JEH parcel. The Basis School is located one block east of the JEH parcel. Children walking or commuting to The Basis School could be impacted by construction traffic if the roads near the JEH parcel are used for construction traffic. Thomson Elementary School is located less than 1 mile from the JEH parcel and is not located on or by main roads that could be impacted by this scenario; therefore, no impacts to this school are expected. Bright Horizons Family Solutions childcare center is located one block east of the JEH parcel on Pennsylvania Avenue, and the Federal Trade Commission Child Care Center is located approximately 0.5 mile southeast of the JEH parcel on Pennsylvania Avenue. HHS/ED Children's Center, Covington Kids, and Triangle Tots are located approximately 0.5 mile west of the JEH parcel along Pennsylvania Avenue. The National Office Child Development Center is located one block southwest of the project site along Constitution Avenue. Both Constitution Avenue and Pennsylvania Avenue are primary arteries in Washington, D.C., and as such, could be used by traffic associated with the renovation. Arnold & Porter Children's Center is located one block northwest of the project site along E Street NW. It is possible that this street could be used by construction or commuter traffic coming to or from the site. Just Us Kids is located two blocks east of the project site along D Street NW. This street could be used for construction or commuter traffic coming to or from the project site. Milestones Enrichment Center is located three blocks north of the JEH parcel and also is not located on or near any major roads that could be used for renovation traffic; no impacts to this childcare center are expected.

Under this scenario, some impacts to children (e.g., releases of odor and dust during the renovation of the JEH parcel) may occur as a result of children attending schools or day care centers in proximity to the JEH location. Additionally, an increase in renovation traffic to and from the JEH parcel could impact children who are commuting or walking to school. However, these impacts would not have a disproportionately high and adverse impact to children. Therefore, no mitigation of disproportionate and adverse impacts to children is required under EO 13045 as a result of this scenario.

RFDS 2

Impacts to children under this scenario would be the same as those described for the RFDS 1. Therefore, no mitigation of disproportionate and adverse impacts to children is required under EO 13045 as a result of RFDS 2.

JEH PROTECTION OF CHILDREN ENVIRONMENTAL CONSEQUENCES SUMMARY

- **No-action Alternative**: No measurable impacts.
- **RFDS 1:** no mitigation of disproportionate and adverse impacts to children is required under EO 13045.
- **RFDS 2:** no mitigation of disproportionate and adverse impacts to children is required under EO 13045.

JEH PUBLIC HEALTH AND SAFETY ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: Indirect, long-term, adverse impacts to emergency services and life safety.

RFDS 1: Indirect, long-term, beneficial impacts to emergency services and life safety.

RFDS 2: Indirect, long-term, beneficial impacts to public health and safety; indirect, short-term, adverse impacts.

4.2.8 Public Health and Safety/ Hazardous Materials

PUBLIC HEALTH AND SAFETY/ HAZARDOUS MATERIALS ASSESSMENT OF SIGNIFICANCE

Impacts to public health and safety would not result in significant impacts, as defined in section 3.9.3.

4.2.8.1 Public Health and Safety

No-action Alternative

Under the No-action Alternative at JEH, the FBI's HQ would remain at the JEH building. The FBI Police would continue to provide protective security to FBI employees and facilities, and continue to provide the initial response in the case of an emergency on the parcel. Current law enforcement, emergency and fire response capacity in the vicinity would remain the same and response times would remain unchanged. As a high profile Federal building, the ongoing presence of the FBI HQ at the JEH parcel under the No-action Alternative could prolong a somewhat elevated potential for intentional destructive acts. In order to minimize the risk of injury to both FBI employees and the public, the FBI would continue to maintain an emergency response plan to be followed in case of intentional destructive acts or other emergencies. This would be augmented by a response from local police departments.

Under the No-action Alternative, there would continue to be two notable risks to the health and safety of FBI employees and visitors within the JEH building. First, the FBI would continue to operate a firing range for employee use within the JEH building. Public access would be restricted and employee use would continue to be consistent with Occupational Safety and Health Administration (OSHA) regulations (29 CFR Parts 1900 to 1999); however, a slight risk of injury would remain. Secondly, the deteriorating condition of the building would continue to pose a threat to the health and safety of FBI HQ employees and visitors from structural and building system deficiencies (GAO 2011).

Indirect, long-term, adverse impacts to emergency services and life safety would occur under the No-action Alternative resulting from the ongoing risk of intentional destructive acts associated with a high profile government facility, the continued operation of a firing range, and the deterioration of the JEH building structure and systems.

RFDS 1

Under RFDS 1, the JEH parcel would no longer house a high-profile government building, thus lowering the risk of intentional destructive acts. The interior renovations associated with this redevelopment scenario would remove the risk to public health and safety from the operation of a firing range and the structural and building system deficiencies currently present in the JEH building. In addition to these beneficial impacts, some temporary adverse impacts associated with construction and demolition activities would occur, but they would be limited in scope to the construction labor force performing the interior renovations. No construction activities would occur exterior to the JEH building or to areas within or directly adjacent to the parcel. The implementation of OSHA standards, and other local permitting and inspection requirements during construction would minimize the impacts to public health and safety under RFDS 1.

Overall, under RFDS 1 there would be indirect, long-term, beneficial impacts to emergency services and life safety as a result of the lowered risk of intentional destructive acts, removal of the firing range, and improvements to the JEH building's structure and systems. There would also be indirect, short-term, adverse impacts to public health and safety associated with the construction required to redevelop the parcel.

RFDS 2

Under RFDS 2, there would be indirect, long-term, beneficial impacts to emergency services and life safety as a result of the lowered risk of intentional destructive acts, removal of the firing range, and removal of the deteriorating JEH building, similar to those described for RFDS 1. Because the future redevelopment of the parcel would include a residential component, the presence of a full-time residential population at the parcel may increase demand for emergency services. However, it is not anticipated that the addition of approximately 800 residential units at the parcel would increase demand beyond the capacity of law enforcement, emergency, and fire services to provide a timely and effective response.

Indirect, short-term, adverse impacts to public health and safety associated with the demolition of the JEH building and redevelopment of the parcel would occur in areas within or directly adjacent to the parcel. The construction labor force performing the construction activities, as well as pedestrians and motorists traveling adjacent to the parcel would be the primary populations impacted by construction activity. Contractors would be required to ensure that workers receive proper safety training for operation of mechanical equipment and utilize proper safety clothing, equipment, and procedures at all times. These measures would be expected to minimize the risk of injury and the related need for emergency response. The implementation of OSHA standards, DDOT traffic control plans to safely route pedestrians and vehicles around the work zone to the extent that it would impact public space, and other local permitting and inspection requirements during construction would minimize the impacts to public health and safety under RFDS 2.

4.2.8.2 Hazardous Materials

No-action Alternative

Under the No-action Alternative at JEH, there would be no new measurable impacts to health and safety as a result of hazardous materials, because there would be no change to the condition of the hazardous materials that currently exist on the parcel. JEH would continue to produce hazardous waste as a result of ongoing operations building maintenance and firing range use.

RFDS 1

Under RFDS 1, most of the identified hazardous building materials would pose a hazard when they are disturbed during renovation activities and would not be accepted for disposal in a construction debris landfill. Abatement activities, including specific corrective actions and handling/disposal protocols would be necessary, but these would be expected to mitigate any potential human health and safety risks. Indirect, short-term, adverse impacts to health and safety as a result of hazardous materials are expected under RFDS 1. Indirect, long-tern, beneficial impacts are expected from the abatement of hazardous materials that would occur during renovation.

RFDS 2

Under RFDS 2, the JEH building would be demolished and the parcel redeveloped. Demolition of the building would have the potential to mobilize a number of different types of hazardous materials into the environment, and disturbance of these materials would pose a hazard to workers at the parcel in particular, as described under RFDS 1. Based on the findings of the hazardous building materials survey conducted for the JEH building (WSP 2015), large quantities of hazardous building materials would need to be addressed as part of demolition activities. Abatement, handling, and disposal protocols would vary depending on the specific hazardous material, but proper implementation of a comprehensive abatement strategy would be expected to minimize potential health and safety impacts.

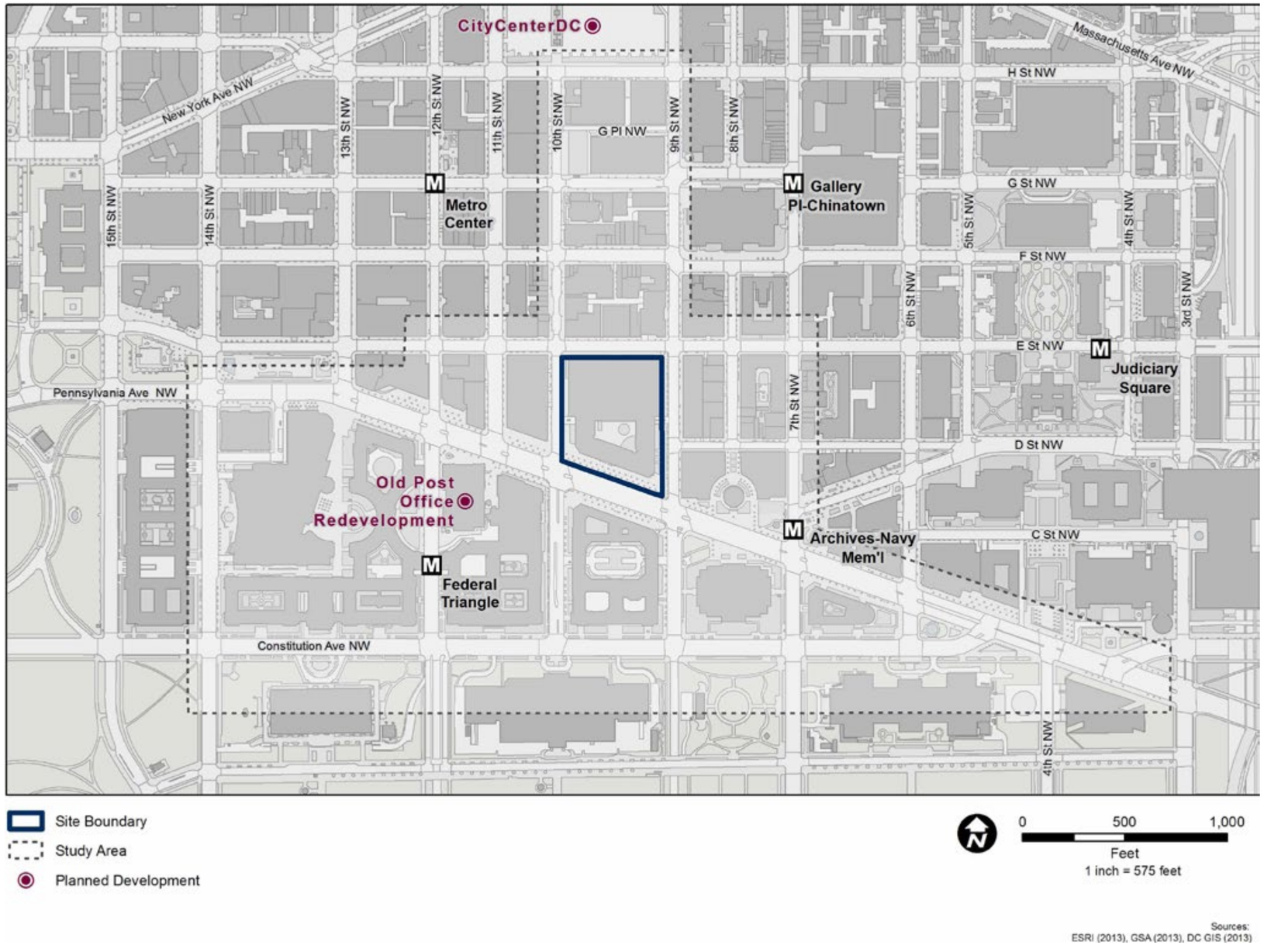
JEH HAZARDOUS MATERIALS ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: Indirect, short-term, adverse impacts to hazardous materials; indirect, long-term, beneficial impacts.

RFDS 2: Indirect, short-term, adverse impacts; indirect, long-term, beneficial impacts.

Figure 4-30: JEH Parcel No-build Condition Planned Development Locations



4.2.9 Transportation

The following sections evaluate the impacts by mode of travel for the No-action Alternative and the two RFDSs, common to all action alternatives. Section 3.10.4.3 contains a summary of the methods and assumptions followed for the traffic analysis.

TRANSPORTATION ASSESSMENT OF SIGNIFICANCE

Impacts to transportation under the No-action Alternative would result in significant impacts to public transit as defined in section 3.10. Other resources considered under transportation would not result in significant impacts.

4.2.9.1 No-action Alternative

Planned Developments

Based on the DDOT Scoping Form (Appendix A), two planned developments are included as part of the No-action Alternative: a hotel proposed along Pennsylvania Avenue NW and mixed-use development primarily composed of residential and office development along H Street NW (figure 4-30). Both developments are located adjacent to or within the study area.

Old Post Office Redevelopment would include a 267-room hotel; 1,000-seat conference center; 492,000-SF fitness club; 925-seat drinking place; 16,600-SF restaurant; 8,900-SF bread/bagel shop; and 1,700-SF specialty retail center (GSA in cooperation with NCPC 2013a). The proposed redevelopment would be located at the intersection of Pennsylvania Avenue and 12th Street NW, two blocks west of the JEH parcel. This proposed development would change existing office and retail use to hotel and support uses within the historic Old Post Office building. The project proposes to introduce vehicular access to the hotel via the previously closed 11th Street NW; this access point would be the main hotel entrance and the primary vehicular entry point for drop-offs, valet parking, and access to the 150 parking spaces located under the adjacent Old Post Office Annex building (GSA 2013a). The Pennsylvania Avenue entrance would be reinstated as the primary pedestrian point of entry, with additional pedestrian entrances provided on 12th Street and C Street NW. Redevelopment of the building is expected to be complete by 2016.

CityCenterDC is a mixed-use development on the site of the Old DC Convention Center that includes two phases. Phase I of the project includes two office buildings, two apartment buildings, two condominium buildings, ground-floor retail, a public park, and a parking garage with more than 1,500 parking spaces and is included in the No-action Alternative (Development 2013). Phase II of the project includes a hotel and another office building with their own parking garages; because the timetable of Phase II is unknown, it is not included in the No-action projects in this analysis. The Phase I development included 462,085 SF of office; 252,023 SF of retail; and 674 residential units (GS 2008). The proposed phase I mixed-use would occupy two city blocks bounded by H Street, I Street, 9th Street, and 11th Street NW. The property parking garage would be accessible from both 9th and 11th Streets NW.

Planned Roadway Improvements

DDOT is conducting a citywide traffic signal optimization initiative scheduled to be completed by the end of 2016 (DDOT 2015a). There are no other planned roadway improvements within the study area. However, the lane geometry at the intersection of 11th Street NW and Pennsylvania Avenue NW (Intersection #19) would change under the No-action Alternative. Figure 4-31 shows the revised lane geometry for this intersection; the changes shown in red include the addition of a northbound approach south of Pennsylvania Avenue NW with all turning movements, a southbound 11th Street NW through movement, an eastbound Pennsylvania Avenue NW right-turn movement, and a westbound Pennsylvania Avenue NW left-turn movement. The lane geometry of all other intersections remains the same as the Existing Condition.

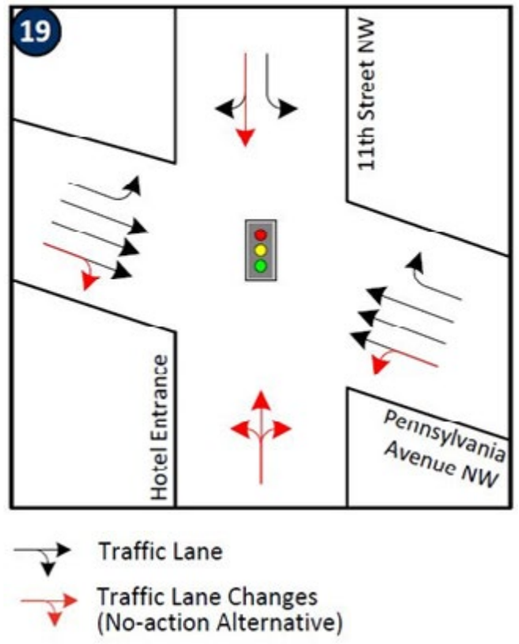
Pedestrian Network

With the redevelopment of the Old Post Office site, a curb cut and driveway to access the hotel would be added on the south side of Pennsylvania Avenue at 11th Street NW (GSA in coordination with NCPC 2013b). This driveway would require the reconfiguration and retiming of the 11th Street and Pennsylvania Avenue NW intersection (Intersection #19) and create a pedestrian-vehicle conflict point. To alleviate conflicts, the new intersection would include walk signals to minimize potential safety concerns, and the pedestrian crosswalk would be differentiated with paving to distinguish it from the vehicular areas. The intersection would also be fully accessible. Additionally, with the Old Post Office project, the mid-block crosswalk at the C Street plaza across 12th Street would be improved to have a wider ramp for accessibility.

As per DDOT's *2015-2020 Transportation Improvement Program*, published by MWCOG, the District-wide Bicycle and Pedestrian Management Program includes sign and lighting upgrades to benefit pedestrians (MWCOG 2014a). Some surface improvements could also be made to the existing pedestrian facilities with future expected addition of transit options.

Under the No-action Alternative, there would be no measurable impacts to pedestrians. It is not anticipated that the redevelopment of the Old Post Office, development of CityCenterDC, or other area pedestrian growth through 2025 would result in a substantial change to the volume of pedestrian activity or substantial changes to existing pedestrian infrastructure in proximity to the JEH parcel. Additionally, the increase in vehicular traffic in the study area would not affect pedestrians crossing at the intersections and would not substantially affect their access to the surrounding street network, and any pedestrian/vehicular conflicts would also be mitigated. Indirect, long-term, beneficial impacts may occur as a result of Pennsylvania Avenue Initiative's efforts to effectively manage the operations, maintenance, programming, and physical improvements to Pennsylvania Avenue could have a beneficial impact to pedestrians if such efforts were implemented prior to 2025.

Figure 4-31: Intersection #19 Revised No-action Lane Geometry



JEH PEDESTRIAN NETWORK NO-ACTION ALTERNATIVE ENVIRONMENTAL CONSEQUENCES SUMMARY

No measurable impacts.

JEH BICYCLE NETWORK NO-ACTION ALTERNATIVE ENVIRONMENTAL CONSEQUENCES SUMMARY

No measurable impacts.

CYCLE TRACKS

Allow two-way bicycle travel in a marked lane that is typically separated from vehicle travel lanes by a physical barrier.

BICYCLE LANES

Are marked lanes that allow one-way bicycle travel, typically in the same direction as adjacent vehicle travel lanes. Bicycle lanes may or may not be separated from vehicle travel lanes by physical barriers.

CONTRA-FLOW BICYCLE LANES

Are marked lanes that allow one-way bicycle travel in the opposite direction as adjacent vehicle travel lanes.

Table 4-31: DDOT Planned Bicycle Facilities in 2015

Roadway	From/To	Type
1st Street NE	Massachusetts Avenue NE to G Street NE	Cycle Track
M Street NE	2nd Street NE to 4th Street NE	Cycle Track
4th Street NE	M Street NE to Florida Avenue NE	Cycle Track
12th Street NW	Pennsylvania Avenue NW to L Street NW	Bicycle Lane
E Street NW	North Capitol Street to Columbus Circle NE	Bicycle Lane
2nd Street SE	East Capitol Street to Independence Avenue SE	Bicycle Lane
4th Street NE	C Street NE to D Street NE	Bicycle Lane
6th Street NE	C Street NE to D Street NE	Bicycle Lane
I Street SE	1st Street SE to 2nd Street SE	Bicycle Lane
6th Street SE	G Street SE to Virginia Avenue SE	Bicycle Lane
2nd Street NE	T Street NE to Rhode Island Avenue NE	Bicycle Lane
3rd Street NE	T Street NE to Rhode Island Avenue NE	Bicycle Lane
3rd Street NE/SE	Pennsylvania Avenue SE to D Street NE	Contraflow Bicycle Lane
M Street NE	4th Street NE to Florida Avenue NE	Contraflow Bicycle Lane
Ontario Road NW	Euclid Street NW to Columbia Road NW	Contraflow Bicycle Lane

Note: Those bicycle facilities within 0.25-mile of the JEH parcel are highlighted in light blue.
Source: DDOT (2015)

Table 4-32: Proposed Bicycle Facilities by in MoveDC Plan in the JEH Parcel Study Area

Roadway	From/To	Type	Prioritization
10th Street NW	H Street NW to Massachusetts Avenue NW	Bicycle Lane	Tier 1
15th Street NW	Constitution Avenue NW to Pennsylvania Avenue NW	Cycle Track	Tier 1
15th Street NW	Pennsylvania Avenue NW to I Street NW (remaining portions)	Cycle Track	Tier 1
M Street NW	Thomas Circle to 1st Street NE	Cycle Track	Tier 1
4th Street NW/SW	I Street SW to Pennsylvania Avenue NW	Cycle Track	Tier 2
Vermont Avenue NW	I Street NW to Massachusetts Avenue NW	Bicycle Lane	Tier 2
G Street NW	9th Street NW to 10th Street NW	Bicycle Lane	Tier 2
G Street NW	3rd Street NW to Massachusetts Avenue NW	Bicycle Lane	Tier 2
6th Street NW	Pennsylvania Avenue NW to Rhode Island Avenue NW	Cycle Track	Tier 2
5th Street NW	Indiana Avenue NW to Rhode Island Avenue NW	Cycle Track	Tier 2
Louisiana Avenue NW	Constitution Avenue NW to Columbus Circle NE	Cycle Track	Tier 2
Massachusetts Avenue NW	4th Street NE to Dupont Circle NW	Cycle Track	Tier 3
L Street NW	12th Street NW to 1st Street NE	Cycle Track	Tier 3
Delaware Avenue NE	Constitution Avenue NE to Columbus Circle NE	Cycle Track	Tier 3
New Jersey Avenue NW	Massachusetts Avenue NW to S Street NW	Bicycle Lane	Tier 3
Constitution Avenue NE/NW	7th Street NE to Pennsylvania Avenue NW	Cycle Track	Tier 4

Source: DDOT (2014a)

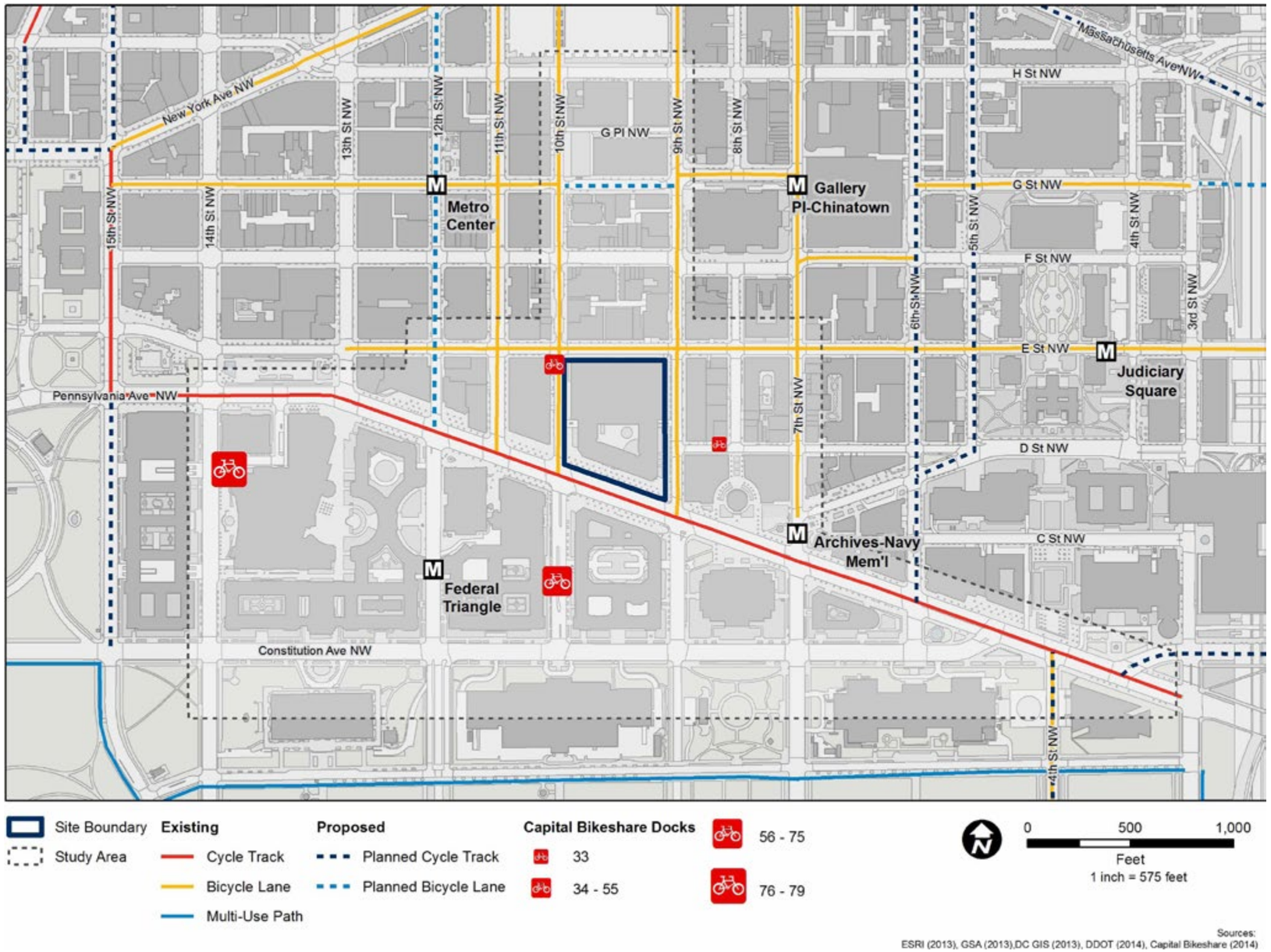
Bicycle Network

DDOT plans to construct a number of bicycle facilities throughout the District in 2015, including new cycle tracks, bicycle lanes, and contraflow bicycle lanes (DDOT 2015b). Many of these facilities are located within 2 miles of the JEH parcel and summarized in table 4-31. Those bicycle lanes that are located within 0.25 mile of the JEH parcel are highlighted in light blue and are shown as No-action Alternative bicycle lanes on figure 4-32. These proposed bicycle facilities would provide improved access with increased access from the north via the proposed 12th Street bicycle lanes.

In addition to the bicycle facilities planned for 2015, the MoveDC plan outlines bicycle improvements to expand and enhance the District's bicycle network over the next 25 years (DDOT 2014c). The plan groups improvements into four tiers, with Tier 1 containing the highest priority improvements and Tier 4 containing the lowest priority improvements. There is no set implementation date for any improvements or tiers, however. Table 4-32 summarizes proposed bicycle lanes and cycle tracks in the MoveDC plan within about 0.5 mile of the JEH parcel. The planned bicycle lanes shown in table 4-31 and the proposed bicycle lanes shown in table 4-32 are illustrated in figure 4-32; planned bicycle lanes with known implementation dates are shown as existing in the figure.

Under the No-action Alternative, there could be indirect, long-term, beneficial impacts from proposed bicycle improvements in the study area if the proposed bicycle improvements are implemented. According to the MoveDC plan, 230,000 additional annual bicycle trips are expected within the District by 2040, and these planned improvements would help to accommodate them (DDOT 2014c).

Figure 4-32: JEH Parcel No-action Alternative and Proposed Bicycle Facilities



JEH PUBLIC TRANSIT
NO-ACTION ALTERNATIVE
ENVIRONMENTAL CONSEQUENCES SUMMARY

Indirect, long-term, major adverse impacts.

AMERICAN COMMUNITY SURVEY

The American Community Survey is an on-going annual sampling of demographic data (including mode of travel) across the U.S. conducted by the U.S. Census Bureau.

Public Transit

The following sections describe Metrobus and Metrorail modes within the study area under the No-action Alternative. Commuter bus, carsharing, slugging, and shuttles are not evaluated in the No-action Alternative because future ridership information or planning documents were not available for those transportation modes. In the case of slugging, this mode of commuting is demand-based, and future planning does not exist.

Projected Transit Growth

Growth in the transit mode was calculated for the year 2025 using regional transit growth rates and projected ridership from large planned projects in proximity to the study area.

Transit trips associated with these CityCenterDC and the Old Post Office redevelopment were calculated based on the Institute of Transportation Engineers (ITE) trip generation rates and the non-single occupancy vehicle (SOV) mode split determined in the traffic analysis section of this document. The non-SOV mode split was further disaggregated into bus trips and Metrorail trips using bus (6.3 percent for bus) and subway (35.7 percent for Metrorail) proportions from the 2009-2013 American Community Survey transportation data for census tract 58, which contains the CityCenterDC project and the JEH parcel study area (U.S. Census Bureau 2009-2013). While the Old Post Office site is technically in an adjacent census tract (District of Columbia Tract 62.02), this census tract contains the National Mall and other NPS lands, and therefore is not as representative of the site mode split.

Regional transit growth rates were obtained using the MWCOG Version 2.3.57 Regional Travel Demand Model (MWCOG 2015b), which projects an annual growth rate of 2.1 percent between 2008 and 2025 on the Metrorail system and 1.9 percent on the region's bus network (including Metrobus). These growth rates were applied to 2014 Metrorail and Metrobus volumes (with CityCenterDC trips added into 2014 and Old Post Office trips added into 2016) to calculate 2025 volumes. The Regional Travel Demand Model uses socioeconomic inputs to project future travel flows across all modes of travel.

Metrorail Analysis

The Metrorail analysis was conducted using projected ridership growth in the system at the four stations within the study area and each line that serves the study area.

Ridership Growth From Planned Projects

Additional Metrorail trips created by the CityCenterDC development, the Old Post Office development, and the study area transit network are summarized in table 4-33. Fifteen-minute ridership totals were calculated by multiplying the AM peak hour and PM peak hour totals by the AM peak hour factor (PHF) of 28 percent and the PM PHF of 27 percent, respectively, for Metrorail in the study area (WMATA 2014d). The 15-minute totals for the Old Post Office development were then distributed proportionally, based on existing ridership, to the closest Metrorail station entrances (Archives-Navy Memorial, Federal Triangle, and Metro Center South). Due to the location of City Center north of the study area, it was assumed that patrons accessing the Metrorail system would do so at the north entrances to Metro Center and Gallery Place-Chinatown, neither of which are part of this analysis. However, 15-minute ridership totals for City Center were added to each platform ridership total (also proportionally based on existing ridership) at Gallery Place-Chinatown and Metro Center.

Regional Transit Growth Rate

Refer to section 3.10.4.3 for further details on how Metrorail background projected growth were calculated. Table 4-34 summarizes projected 2025 weekday entries at Metrorail stations in the study area, including background growth and growth from planned projects.

Table 4-33: Projected Metrorail Trips Associated with City CenterDC and Old Post Office Projects

Project	AM Peak Hour Trips			PM Peak Hour Trips		
	IN	OUT	TOTAL	IN	OUT	TOTAL
CityCenterDC						
	158	84	242	214	279	493
Old Post Office Redevelopment						
	103	105	208	72	62	134

Note: Values are rounded.
Source: GS (2008); GSA, in cooperation with NCPC (2013a); US Census Bureau, 2009-2013

Table 4-34: Weekday 2025 Projected Metrorail Ridership by Station

Metrorail Station	Average Weekday Entries	
	2014	2025 with Background Growth
Archives-Navy Memorial	7,535	9,441
Federal Triangle	6,982	8,749
Gallery Place-Chinatown	23,875	29,917
Metro Center	24,839	31,124

Sources: WMATA (2014d); MWCOG (2015); GS (2008); GSA in cooperation with NCPC (2013a)

Metrorail Passenger Loads

Metrorail passenger loads by line within the study area were obtained from WMATA for the busiest segment of each line during the AM peak hour and PM peak hour. Refer to section 3.10.4.3 for further details on how Metrorail passenger loads were calculated. Projections for 2025 used projected trips associated with the City Center and Old Post Office projects and the regional Metrorail growth rate (2.1 percent annually).

Current (2014) passenger loads and projected passenger loads by 2025 are all below 120 passengers per car, or what WMATA considers to be capacity. All trains were assumed to have six cars with the exception of Blue line trains, which typically have eight during peak periods (WMATA 2014g). Tables 4-35 and 4-36 summarize passenger loads per car between 2014 and 2025 during the AM peak hour and PM peak hour. No-action Alternative background growth trips are shown separately from the planned development projects to show the incremental impact of each component.

Table 4-35: JEH Parcel Current and Projected AM Peak Hour Maximum Metrorail Passenger Loads by Line

Line	Segment	Train Cars	2014 Existing		2025 No-action Alternative Background Growth		2025 No-action with Planned Development Projects	
			Pax	Load	Pax	Load	Pax	Load
Red	Gallery Place to Metro Center	136	9,125	67.1	11,434	84.1	11,651	85.7
Orange	Smithsonian to Federal Triangle	94	5,870	62.4	7,355	78.2	7,495	79.7
Green	Mt. Vernon Square to Gallery Place	68	3,542	52.1	4,438	65.3	4,522	66.5
Yellow	L'Enfant Plaza to Archives	78	3,058	39.2	3,832	49.1	3,904	50.1
Blue	Smithsonian to Federal Triangle	44	1,691	38.4	2,119	48.2	2,159	49.1

Note: Pax = passengers, Load = number of passengers per Metrorail car
Source: WMATA (2014h); GS (2008); GSA in cooperation with NCPC (2013a)

Table 4-36: JEH Parcel Current and Projected PM Peak Hour Maximum Metrorail Passenger Loads by Line

Line	Segment	Train Cars	2014 Existing		2025 No-action Alternative Background Growth		2025 No-action with Planned Development Projects	
			Pax	Load	Pax	Load	Pax	Load
Red	Metro Center to Gallery Place	142	10,614	74.7	13,300	93.7	13,605	95.8
Blue	Federal Triangle to Smithsonian	42	2,448	58.3	3,067	73.0	3,138	74.7
Green	Gallery Place to Mt Vernon Square	70	4,034	57.6	5,055	72.2	5,171	73.9
Orange	Metro Center to McPherson Square	114	6,417	56.3	8,041	70.5	8,225	72.1
Yellow	Archives to L'Enfant Plaza	78	3,588	46.0	4,496	57.6	4,599	59.0

Note: Pax = passengers, Load = number of passengers per Metrorail car
Source: WMATA (2014h); GS (2008); GSA in cooperation with NCPC (2013a)

Table 4-37: JEH Parcel Weekday Peak 15-Minute Exiting Period Ridership Growth

Metro Station	Time	2014		2025	
		Entries	Exits	Entries	Exits
Archives	8:45 AM – 9:00 AM	25	524	46	670
Federal Triangle	8:45 AM – 9:00 AM	15	467	28	597
Gallery Place East	6:15 PM – 6:30 PM	212	355	266	445
Gallery Place West	8:45 AM – 9:00 AM	12	301	15	378
Metro Center East	8:45 AM – 9:00 AM	44	434	55	544
Metro Center South	8:45 AM – 9:00 AM	20	427	36	546

Sources: WMATA (2014d); MWCOG (2015); GS (2008); GSA in cooperation with NCPC (2013a)

Table 4-38: JEH Parcel Weekday Peak 15-Minute Entering Period Platform Ridership Growth

Metro Station	Time	2014		2025	
		Entries	Exits	Entries	Exits
Archives	5:00 PM – 5:15 PM	524	56	665	77
Federal Triangle	5:00 PM – 5:15 PM	501	38	635	55
Gallery Place--Glenmont	5:00 PM – 5:15 PM	641	975	807	1,220
Gallery Place--Shady Grove	5:00 PM – 5:15 PM	1,016	534	1,302	667
Gallery Place--Green/ Yellow	5:00 PM – 5:15 PM	1,629	1,128	2,051	1,436
Metro Center--Glenmont	5:30 PM – 5:45 PM	1,171	548	1,472	680
Metro Center--Shady Grove	5:30 PM – 5:45 PM	1,183	691	1,490	859
Metro Center--Blue/ Orange/Silver	5:30 PM – 5:45 PM	1,618	1,651	2,044	2,078

Source: WMATA (2014d); MWCOG (2015); GS (2008); GSA in cooperation with NCPC (2013a)

Station Capacity Analysis

Section 3.10.4.3 contains an in-depth description of the Metrorail station capacity analysis methods. A capacity analysis was conducted for the vertical elements (escalators and stairs), faregate aisles, fare vending machines, and platforms at Archives-Navy Memorial and Federal Triangle Metro Stations, as well as the south and east entrances to Metro Center and the east and west entrances at Gallery Place-Chinatown (the closest entrances to the JEH building). The analysis used peak 15-minute periods of ridership (entries and exits) at each station according to projected 2025 No-action Alternative ridership. No-action Alternative 2025 ridership includes the City Center and Old Post Office development trips and predicted regional transit growth. Analysis for vertical elements, and faregate aisles used projected ridership from the peak exiting period at each station entrance. Table 4-37 summarizes ridership growth during the peak exiting periods at each station entrance.

The platform area analysis and fare vending machine analysis used projected ridership from the peak entering period at each station. Table 4-38 summarizes ridership growth during the peak entering period at each station platform (for peak entering period ridership by station entrance, see Fare Vending Machine sections in Appendix B).

Overall, vertical elements and faregate aisles at each station are projected to operate below a v/c of 0.7, which is considered under capacity. Fare vending machines are projected to operate above capacity at Archives-Navy Memorial, the east and west entrances to Gallery Place-Chinatown, and the east and south entrances to Metro Center. WMATA's Momentum Plan, the agency's strategic plan for the future, does not include any mention of proposed additions to fare vending machines within the system (WMATA 2014a).

Platform peak pedestrian LOS (based on the available spacing between passengers) on the busiest platform sections are projected to be at the acceptable level of B at Archives-Navy Memorial and Federal Triangle. The Red Line platforms at Gallery Place-Chinatown and Metro Center are all projected to operate at a pedestrian LOS D, while the lower platforms are projected to operate at pedestrian LOS C. At pedestrian LOS D, passengers would likely begin to spread out farther up and down the platform. Further details on the station capacity analysis are found in JEH TIA (Appendix B).

An emergency evacuation analysis was performed for each study area Metro station to evaluate evacuation capacities and procedures; WMATA typically performs this analysis for all its station capacity analysis studies. The results of the analysis are included in the "Results of Transit" section, and complete details on the emergency evacuation analysis are found in the JEH TIA (Appendix B).

Metrobus Analysis

For this analysis, it is assumed that there would be no major changes in Metrobus service in the study area by 2025. The 2025 No-action Alternative peak hour bus volumes were calculated by:

- averaging existing maximum weekday passenger loads for each route and direction at stops within the study area by stop;
- multiplying the passenger load by the number of AM peak hour and PM peak hour trips to calculate ridership per peak hour by route and direction; and
- growing the resulting ridership totals to 2025 using the regional bus growth rate of 1.9 percent.

These totals were then summed to calculate a total ridership per peak hour for the study area. To calculate the AM peak hour and PM peak hour capacity of bus services within the study area, the capacity per trip of each Metrobus route during each peak hour was multiplied by the number of trips scheduled in each peak hour. Capacities per trip for each Metrobus route were based on the typical number of seats available on each trip and the WMATA load standard (WMATA 2013e).

Total 2014 AM peak hour bus ridership in the study area was calculated at just more than 4,300 passengers, while PM peak hour bus ridership was calculated at approximately 3,950 passengers. Additional bus trips associated with the CityCenterDC project were added to these 2014 totals, while trips associated with the Old Post Office project were added to 2016 totals (see table 4-39). The trips were added proportionally to each route and direction in the study area based on their share of existing ridership. In combination with the 1.9 percent growth rate, bus passenger volumes in the study area by 2025 are forecasted to be approximately 5,350 during the AM peak hour and nearly 5,000 during the PM peak hour. This is well below the capacity of bus services within the study area, which is approximately 11,400 passengers during the AM peak hour and 10,700 passengers during the PM peak hour. Table 4-40 summarizes current and projected bus ridership in the study area.

While bus capacity in the study area as a whole would be sufficient in 2025, several individual routes would likely experience capacity issues during peak hours. Peak volumes per hour on Routes 11Y, 32, 36, 80, and G8 are all projected to be over capacity by 2025 within the study area. WMATA has completed studies of the 30s Line (Routes 32 and 36), Route 80, and Route G8, according to its website. Certain recommendations from these studies have already been implemented, and all are intended to mitigate overcrowding on these routes. Further analysis would be required to determine the extent to which the recommendations would impact capacity on these routes. Specific recommendations from WMATA's studies to improve bus capacity are found in Appendix B.

With the redevelopment of the Old Post Office site, the selected developer would seek to relocate the bus stop on Pennsylvania Avenue and 12th Street NW directly in front of the main Old Post Office Building entrance farther east, closer to 10th Street (GSA in cooperation with NCPC 2013b). This relocation of the bus stop would reduce existing conflicts between pedestrians, vehicles, and buses by increasing visibility between pedestrians and oncoming traffic and would have an overall beneficial impact by providing better access to crosswalks across Pennsylvania Avenue and 10th Street NW. The Old Post Office redevelopment study provides more details on the existing and proposed conditions at this location.

Table 4-39: Bus Passenger Trips Associated with CityCenterDC and Old Post Office Developments

Project (Year)	Non-SOV AM Peak Hour	Non-SOV PM Peak Hour	Bus Proportion of Non-SOV	Bus AM Peak Hour	Bus PM Peak Hour
CityCenterDC (2014)	679	1,382	6.3%	43	87
Old Post Office (2016)	582	375	6.3%	37	24

Note: Bus passenger trips noted in the table are for the completion year of each project, as noted in parenthesis in the "Project (Year)" column.
Source: WMATA (2014); MWCOG (2015); GS (2008); GSA in cooperation with NCPC (2013a)

Table 4-40: Current and Projected Bus Ridership in the JEH Parcel Study Area

Year	AM Peak Hour			PM Peak Hour		
	Volume	Capacity	V/C	Volume	Capacity	V/C
2014 Existing Condition	4,315	11,425	0.38	3,952	10,698	0.37
2025 with Background Growth	5,288		0.46	4,843		0.45
2025 with Background Growth and Planned Development Projects (Total No-action)	5,383		0.47	4,978		0.47

Source: GS (2008); GSA in cooperation with NCPC (2013a); WMATA Automatic Passenger Counter (APC) Data, March (2014); MWCOG (2015)

JEH PARKING
NO-ACTION ALTERNATIVE
ENVIRONMENTAL CONSEQUENCES SUMMARY

Indirect, long-term, beneficial impacts.

JEH TRUCK ACCESS
NO-ACTION ALTERNATIVE
ENVIRONMENTAL CONSEQUENCES SUMMARY

No measurable impacts.

Table 4-41: JEH Parcel Background Growth Rates for No-action Roadways

Roadway	Annual Growth Rate	Eleven-Year Growth
4th Street NW	0.5%	5.64%
6th Street NW		
9th Street NW		
11th Street NW		
12th Street NW		
13th Street NW		
E Street NW		
H Street NW		

Source: Chamberlain (2014)

Parking

Non-street parking in the study area would increase with the CityCenterDC and the Old Post Office building redevelopment, which would have parking garages of 1,555 and 150 parking spaces, respectively (Development 2013). Although 500 spaces of the City Center parking garage would be open to the public due to the retail use within the project, the Old Post Office building parking would be limited to Old Post Office patrons who use valet as well as up to five employee spaces (CityCenterDC 2014; GSA in coordination with NCPC 2013b). Due to the limited nature of parking at the Old Post Office site, off-street parking conditions would likely only see minor changes from the few employees who may opt to pay for parking at CityCenterDC and walk the remaining blocks to the JEH building.

There are no anticipated changes to street parking within the study area within the timeframe of this study, but several street parking spaces would be added to the CityCenterDC blocks with the reinstatement of the 10th Street and I Street NW rights-of-way as streets. These additional on-street parking spaces would likely be time-constrained and are intended for retail customers, deliveries, and mid-day trips to surrounding commercial buildings.

Under the No-action Alternative, there would be indirect, long-term, beneficial impacts to parking due to an increased supply mainly as a result of the CityCenterDC development project. However, the additional parking may or may not have a negative impact to future traffic (see section 4.2.9.7, Traffic Analysis).

Truck Access

Truck access routes would not change under the No-action Alternative. Therefore, under the No-action Alternative there would be no measurable impacts to truck access.

Traffic Analysis

According to the DDOT scoping form, two primary sources were relied on to develop the future traffic volumes: an approved list of planned developments agreed to by DDOT and background growth rates agreed by all parties (DDOT and the EIS project team). The DDOT scoping form is found in Appendix A.

The following section describes the process for analyzing traffic for the No-action Alternative and the results of the analysis.

DDOT is conducting a citywide traffic signal optimization initiative scheduled to be completed by the end of 2016 (DDOT 2015a). The traffic signals within the study area were not optimized as part of the No-action Alternative because DDOT's signal optimization initiative would cover many areas outside of the JEH traffic study area. The signal optimization study may consider corridor-based signal plans, bus priority corridors, or other methods to improve traffic flow on an area-wide basis that could include the JEH study area.

Background Growth

Refer to section 3.10.4.3 for a detailed description of background growth and how it was calculated. Following DDOT's guidelines, the latest available DDOT historic average daily vehicle counts were compared from 2008-2012 to provide an average annual growth rate to apply to the study area roadways (DDOT 2009b).

The comparison separated roadways into arterials, minor arterials, and local roadways based on DDOT's assigned functional classification map. Arterial and local roadways had an average negative growth while minor arterials had a 0.5 percent positive growth. This information was presented to DDOT, which agreed for the study to apply a 0.5 percent growth for the minor arterials only and a 0 percent growth rate for all other roadways. Based on the DDOT roadway functional classification map, the minor arterials are 4th Street NW, 6th Street NW, 9th Street NW, 11th Street NW, 12th Street NW, 13th Street NW, E Street NW, and H Street NW (DDOT 2014b). The background growth was forecasted out 11 years (future horizon year 2025) by using the compound formula method. Table 4-41 summarizes the background growth rates applied to the study area network.

Trip Generation and Modal Split

The trip generation and modal split process relied on the transportation studies conducted for both development projects, the Old Post Office Renovation and City Center (GSA in cooperation with NCPC 2013a; GS 2008). They both followed the DDOT Guidelines by using the *ITE Trip Generation Manual* trip rates where possible (2012). The *Old Post Office Redevelopment Transportation Study* also referenced the Washington Convention Center EIS to develop trip rates and modal split for the proposed hotel conference center. Both studies relied on the 2005 *WMATA Development-Related Ridership Survey* to determine the percentage of transit trips. The analysis used the full trip generation published in the Old Post Office transportation study, not the net trip generation, because (1) the building probably was not occupied during the time traffic counts for this project were obtained, and (2) the analysis approach was conservative. Table 4-42 presents the planned development generation summary. Appendix B contains the forecasted steps and more detailed trip generation summary.

Trip Distribution

Once the number of trips was forecasted through trip generation, and their mode was projected through the previously discussed studies, destinations of the trips were forecasted. This process followed the two transportation studies (Old Post Office Redevelopment and CityCenterDC). The *Old Post Office Redevelopment Study* distributed the trips based on the existing turning movement pattern (GSA in coordination with NCPC 2013a). The same projected trip pattern was followed. The trips were assumed to continue on the same roadway heading through the study area. The CityCenterDC trip distribution followed the same pattern assigned through the transportation study and was also assumed to continue on the same roadway heading through the study area (GS 2014). Table 4-43 contains the trip distributions covering the two planned developments, and Appendix B contains maps showing the trip distributions for both planned developments.

Development of the No-action Alternative

The planned developments, background growth, and planned roadway improvements were summed together to create the total background trip change between the Existing Condition and the No-action Alternative. Appendix B contains the individual planned developments and background growth total turning movement volumes. The No-action Alternative turning movement vehicle volumes covering all study area intersections are shown in figure 4-33.

Table 4-42: Planned Development Trips for the JEH Parcel No-action Alternative

Project	AM Peak Hour Trips			PM Peak Hour Trips		
	In	Out	Total	In	Out	Total
CityCenterDC*						
TOTAL VEHICLE TRIPS	**337**	**165**	**502**	**261**	**420**	**681**
Old Post Office Redevelopment**						
TOTAL VEHICLE TRIPS	**146**	**112**	**258**	**80**	**97**	**177**

Notes:
**Based on trip generation tables contained in the Technical Memorandum from Gorove Slade Associates to Old Convention Center Site Master Developer dated May 23, 2008 (GS 2008)*
***Based on trip generation tables published in the Old Post Office Redevelopment Transportation Study (GSA in coordination with NCPC 2013a)*

Table 4-43: JEH Parcel No-action Alternative CityCenterDC and Old Post Office Redevelopment Trip Distribution

Destination	Road	CityCenterDC Distribution	Old Post Office Redevelopment Distribution Percent			
		All Conditions	AM Inbound	AM Outbound	PM Inbound	PM Outbound
East DC/MD	Constitution Avenue East	8.0%	17.6%	17.3%	11.4	11.8
North DC	14th Street North	0.0%	8.8%	8.7%	11.4	11.8
Northeast DC/MD	10th Street North	0.0%	3.0%	0.0%	9	0.0
North DC	11th Street North	0.0%	5.9%	6.5%	9.1	23.5
South DC	7th Street South	0.0%	14.7%	1.8%	18.2	5.3
Northwest MD, Western VA	Constitution Avenue West	5.0%	23.5%	39.2%	22.7	29.4
South DC, Southeast MD, Southwest VA	12th Street / 9th Street	12.0%	26.5%	26.5%	18.2	18.2
TOTAL		**24.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Watson (2015)

Figure 4-33: JEH Parcel No-action Alternative AM and PM Weekday Peak Turning Movement Volumes

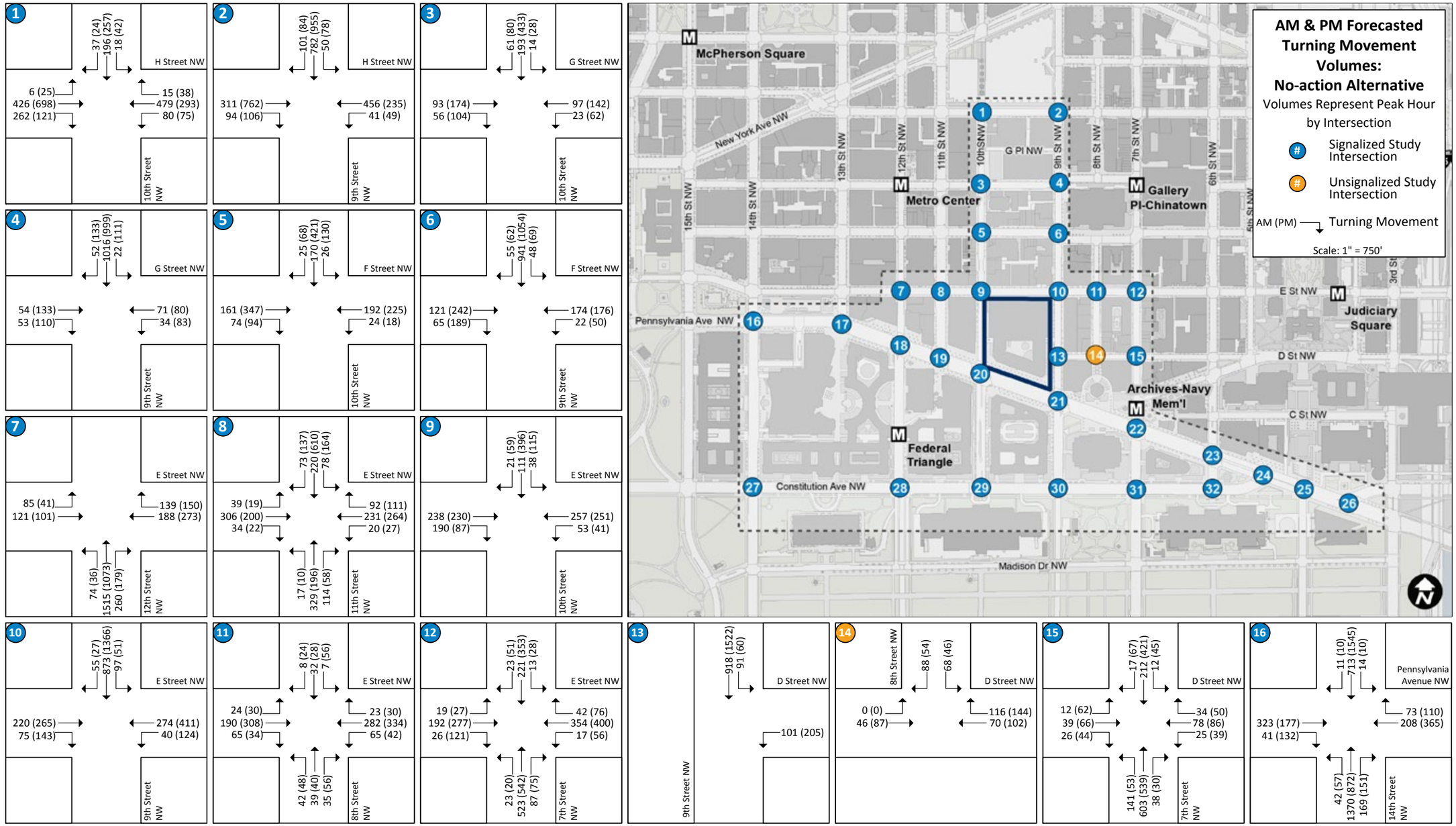
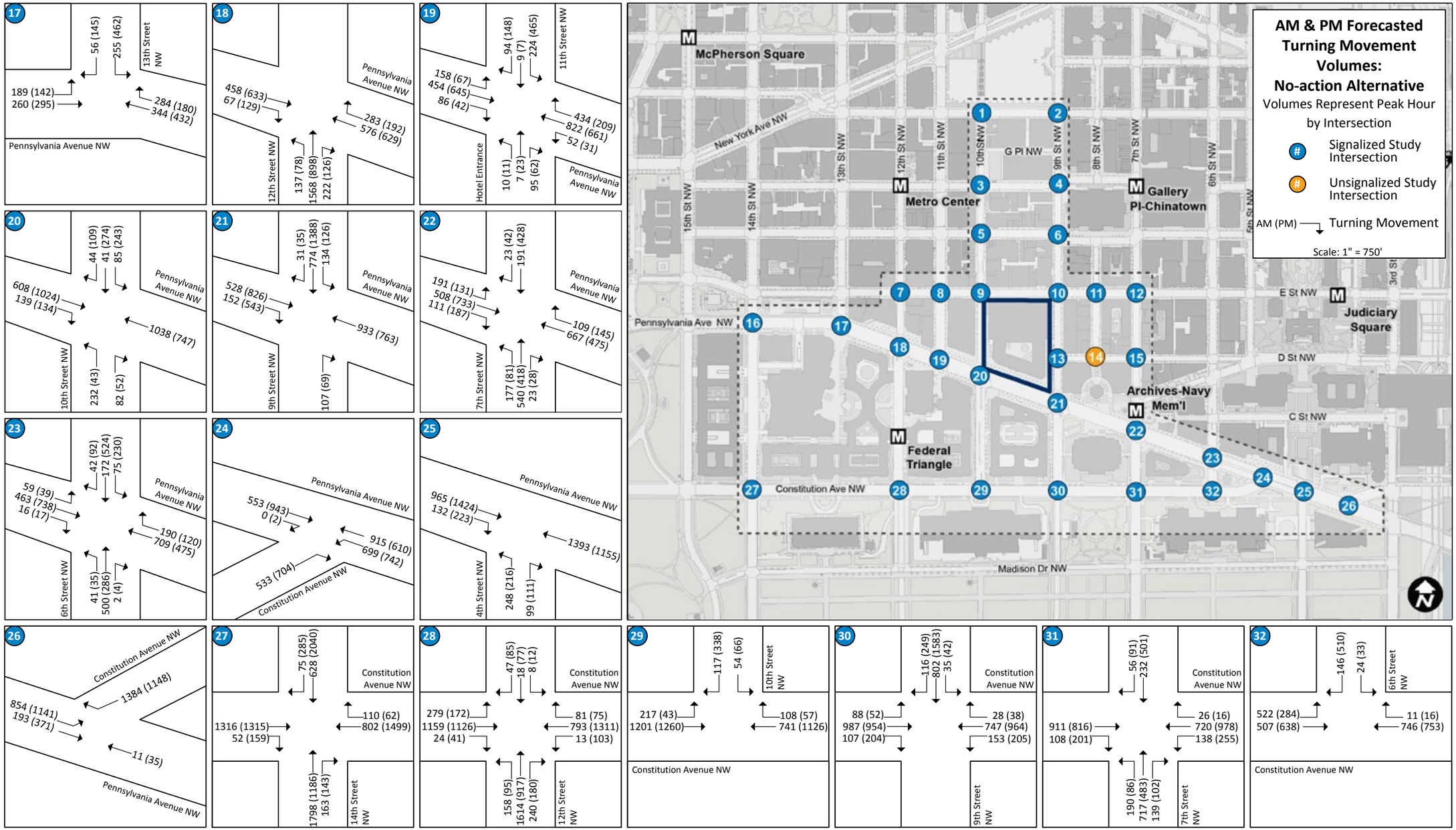


Figure 4-33: JEH Parcel No-action Alternative AM and PM Weekday Peak Turning Movement Volume (continued)



JEH TRAFFIC ANALYSIS NO-ACTION ALTERNATIVE ENVIRONMENTAL CONSEQUENCES SUMMARY

Indirect, long-term, adverse impacts.

Table 4-44: JEH Parcel No-action Alternative AM and PM Peak Hour Operations Analysis

#	Intersection	AM Peak Hour Overall			PM Peak Hour Overall		
		Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check
1	10th Street NW & H Street NW	12.8	B	Pass	19.6	B	Pass
2	9th Street NW & H Street NW	20.3	C	Pass	24.7	C	Pass
3	10th Street NW & G Street NW	14.6	B	Pass	18.2	B	Pass
4	9th Street NW & G Street NW	13.0	B	Pass	45.7	D	Pass
5	10th Street NW & F Street NW	12.1	B	Pass	17.4	B	Pass
6	9th Street NW & F Street NW	9.8	A	Pass	41.5	D	Pass
7	12th Street NW & E Street NW	21.8	C	Pass	26.3	C	Pass
8	11th Street NW & E Street NW	14.7	B	Pass	26.4	C	Pass
9	10th Street NW & E Street NW	8.8	A	Pass	24.8	C	Pass
10	9th Street NW & E Street NW	13.0	B	Pass	46.2	D	Pass
11	8th Street NW & E Street NW	13.7	B	Pass	13.5	B	Pass
12	7th Street NW & E Street NW	19.4	B	Pass	18.7	B	Pass
13	9th Street NW & D Street NW	7.7	A	Pass	8.1	A	Pass
14	8th Street NW & D Street NW (AWSC)	8.2	A	Pass	8.4	A	Pass
15	7th Street NW & D Street NW	38.7	D	Pass	18.2	B	Pass
16	14th Street NW & Pennsylvania Avenue NW	27.3	C	Pass	21.3	C	Pass
17	13th Street NW & Pennsylvania Avenue NW	35.4	D	Pass	25.2	C	Pass
18	12th Street NW & Pennsylvania Avenue NW	32.9	C	Pass	20.1	C	Pass
19	11th Street NW/Hotel Entrance & Pennsylvania Avenue NW (Signalized)	32.8	C	Pass	48.1	D	Pass
20	10th Street NW & Pennsylvania Avenue NW	19.2	B	Pass	16.1	B	Pass
21	9th Street NW & Pennsylvania Avenue NW	12.5	B	Pass	26.8	C	Pass
22	7th Street NW & Pennsylvania Avenue NW	41.8	D	Pass	25.2	C	Pass
23	6th Street NW & Pennsylvania Avenue NW	16.9	B	Pass	57.4	E	Fail
24	Constitution (WB) Avenue NW & Pennsylvania Avenue NW	20.2	C	Pass	36.8	D	Pass
25	4th Street NW & Pennsylvania Avenue NW	10.6	B	Pass	14.2	B	Pass
26	Constitution (EB) Avenue NW & Pennsylvania Avenue NW	18.6	B	Pass	18.5	B	Pass
27	14th Street NW & Constitution Avenue NW	24.4	C	Pass	54.5	D	Pass
28	12th Street NW & Constitution Avenue NW	53.7	D	Pass	31.7	C	Pass
29	10th Street NW & Constitution Avenue NW	14.8	B	Pass	24.7	C	Pass
30	9th Street NW & Constitution Avenue NW	27.3	C	Pass	32.8	C	Pass
31	7th Street NW & Constitution Avenue NW	17.1	B	Pass	19.1	B	Pass
32	6th Street NW & Constitution Avenue NW	42.6	D	Pass	6.1	A	Pass

Notes:
AWSC = All-Way STOP-Controlled unsignalized intersection
EB = Eastbound, WB = Westbound
LOS = Level of Service
Delay is Measured in Seconds Per Vehicle.
Red cells denote intersections operating at unacceptable conditions.

No-action Alternative Operations Analysis

Based on the Synchro™ signalized intersection analysis, the majority of the study intersections would operate at acceptable conditions during the AM and PM peak hours in 2025. However, the intersection of 6th Street NW and Pennsylvania Avenue NW would operate at LOS E during the PM peak hour. This is the only intersection within the study area that would operate under unacceptable conditions during a peak hour period in 2025. None of the study area intersections would operate at LOS F during a peak hour. A total of 13 signalized intersections would experience an unacceptable conditions for one or more turning movements. Compared to the Existing Condition, the No-action Alternative would have no change in the number of intersections failing during the AM peak hour and there would be one more intersection failing during the PM peak hour. The JEH TIA (Appendix B) contains a more detailed No-action Alternative traffic operations analysis.

The overall intersection LOS grades for the No-action Alternative are shown in figure 4-34 for the AM and PM peak hours. Table 4-44 shows the results of the LOS capacity analysis and the intersection projected delay under the No-action Alternative during the AM and PM peak hours.

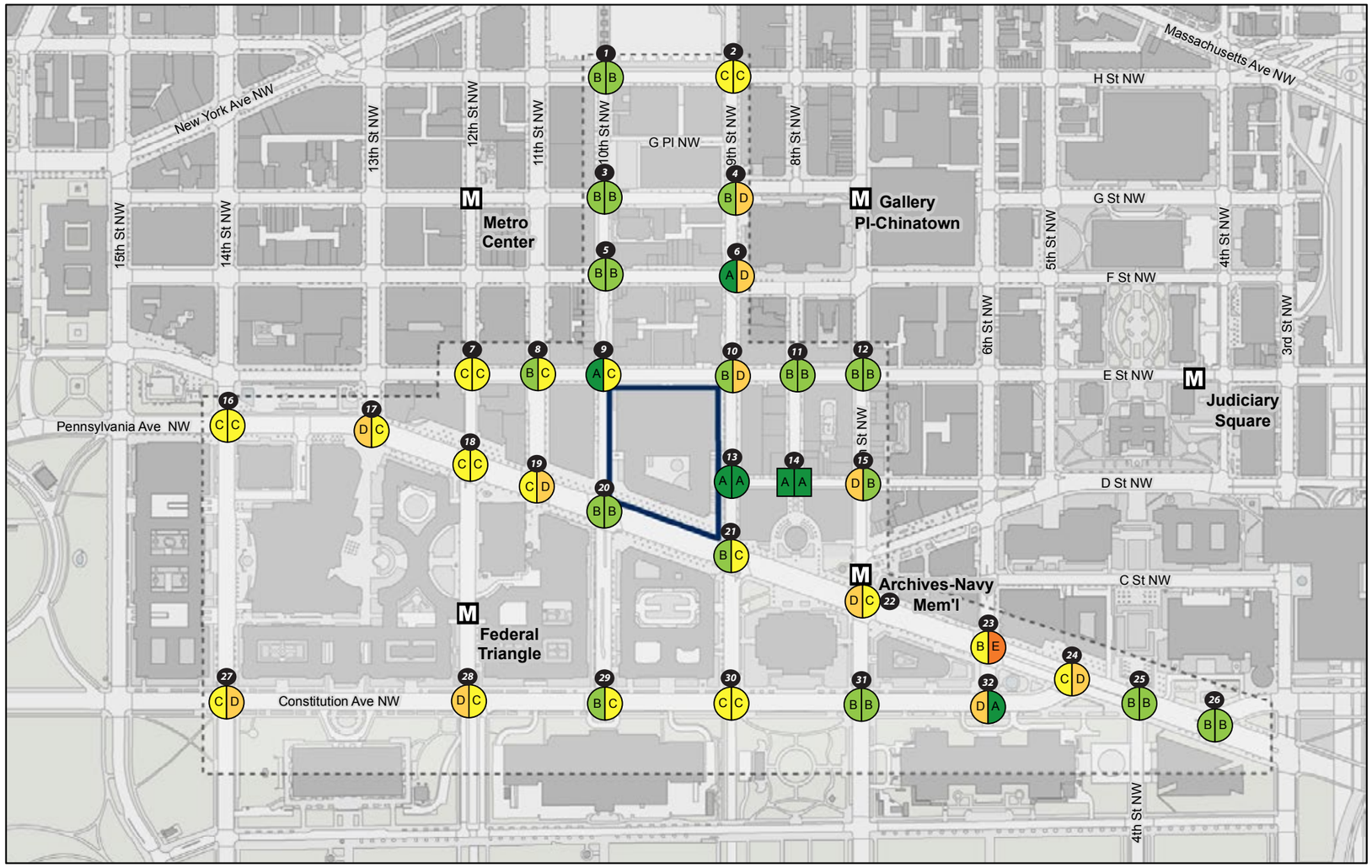
No-action Alternative Queuing Analysis

Based on the Synchro™ and SimTraffic™ analysis, 30 signalized intersections and one unsignalized intersection would experience queuing lengths that would exceed the available storage capacity. The remaining intersections in the study area would provide sufficient storage for the anticipated demand. Compared to the Existing Condition, the No-action Alternative would have failing queues for two more intersections during the AM peak hour and two more intersections during the PM peak hour. The JEH TIA (Appendix B) contains a more detailed No-action Alternative traffic queuing analysis.

Summary of Traffic Analysis: No-action Alternative

Overall, the AM peak hour would experience isolated through-movement delays caused by queuing at three intersections (Intersections #19, #22, and #28). During the PM peak hour, 11 intersections would experience through-movement delays caused by queueing (Intersections #1, #2, #4, #9, #10, #20, #21, #23, #27, #28, and #29). Together these conditions would result in indirect, long-term, adverse impacts. Table 4-44 contains the intersection names tied to the intersection numbers listed above.

Figure 4-34: No-action Alternative Intersection LOS for AM and PM Peak Hours



Sources:
ESRI (2013), GSA (2013),DC GIS (2013)

JEH PEDESTRIAN NETWORK RFDS 1 ENVIRONMENTAL CONSEQUENCES SUMMARY

No measurable impacts.

JEH BICYCLE NETWORK RFDS 1 ENVIRONMENTAL CONSEQUENCES SUMMARY

No measurable impacts.

4.2.9.2 RFDS 1

This section introduces the conditions under RFDS 1 for the JEH parcel and provides a summary of each mode of travel and the potential impact. This includes descriptions of the pedestrian network, bicycle network, public transit system, parking conditions, truck access, and traffic operations. Impacts under RFDS 1 are compared to the No-action Alternative.

Pedestrian Network

Under RFDS 1, pedestrian trips on the JEH parcel and between the JEH parcel and the nearest Metrorail stations, other transit options, and nearby land uses would remain generally consistent with the current levels of pedestrian trips because the parcel would continue to accommodate approximately 5,000 employees.

Figure 4-20 in section 4.1.9.5 depicts the existing state of ADA compliance at crosswalks in the study area. As figure 4-20 shows, most of the curbs in the immediate vicinity of the JEH parcel are at least partly ADA compliant. However, all of the curbs on the same block as the JEH parcel are only partly ADA compliant because they all lack rumble strips or detectable warnings (i.e., dome-shaped bumps) (USDOJ 2007). Although the anticipated modal split favors pedestrians and the use of alternative travel modes, it is assumed that without significant redevelopment or building upgrades that require reconstruction of substantial portions of the sidewalk, the exchange partner may not upgrade the sidewalk frontages and curb ramps to full ADA compliance outside the JEH building in the reuse of the parcel. According to DDOT's Design and Engineering Manual, for rehabilitation projects (not new construction or reconstruction projects), the "design of pedestrian and bicycle facilities should be considered where warranted and cost effective" (DDOT 2009c). If and when the exchange partner redevelops the parcel or substantial sidewalk rehabilitation is required, it is assumed that it would be asked to ensure that the sidewalks and ramps on this block are also ADA compliant at that time (District Department of Public Works 2000). Depending on the DDOT requirements, other sidewalk and public space upgrades or improvements may also be required to adhere to the DDOT Downtown Streetscape Regulations and the regulations noted in the Public Realm Design Manual, a joint publication of DCOP and DDOT (2011).

Bicycle Network

Under RFDS 1 there would be no measurable indirect impacts to bicycle facilities or the bicycle network in the study area, because there are no additional planned bicycle facilities directly adjacent to the JEH parcel in the MoveDC plan (DDOT 2014c), It is anticipated that a similar number or slight increase of people would commute to the parcel via bicycle given that it would continue to accommodate approximately 5,000 employees, and other bicycle improvements in the larger metropolitan area may make bicycling more attractive to additional users.

Public Transit

The following sections describe RFDS 1 for the Metrorail and Metrobus modes within the study area. The other transit modes, commuter bus, shuttles, and slugging, were not analyzed because these modes do not have existing or future ridership statistics, or comprehensive planning documents. It is anticipated that a similar number or slight increase of people would commute to the parcel via commuter bus, shuttle, or slugging, however the parcel would continue to accommodate approximately 5,000 employees.

Projected Transit Growth

Projected transit trips associated with the future development conditions were calculated for RFDS 1 and then added to the 2025 No-action Alternative ridership totals for the Metrobus and Metrorail modes. The site mode split was determined for each land use in the DDOT Scoping Form, and was based on a number of previous studies and the parking supply planned for the scenario (see DDOT Scoping Form, Appendix A, for further details). The transit mode was further split into Metrorail and Metrobus trips using average Metrobus/Metrorail mode splits from the 2005 WMATA Development Survey (WMATA 2006) and the MWCOG Round 8.3 Cooperative Forecasts (MWCOG 2014b). Table 4-45 summarizes these mode splits by land use.

The total number of trips by peak period associated with RFDS 1 was determined using the general office trip generation rates from the I*TE Trip Generation Manual* (ITE 2012). To calculate net trips for the scenario by peak period, existing trips to and from the parcel were subtracted from the total trips calculated for the scenario. Table 4-46 summarizes the net transit trips for RFDS 1. Overall, the scenario would result in approximately 525 additional AM peak transit trips and 537 additional PM peak transit trips (in and out columns combined).

Metrorail Analysis

To evaluate the impact under RFDS 1 to the Metrorail system within the study area, the net transit trips calculated for the AM peak hour and PM peak hour in table 4-46 were disaggregated into Metrorail and Metrobus trips, using the transit mode splits from table 4-45. Table 4-47 summarizes net Metrorail trips generated for RFDS 1.

The net Metrorail trips associated with RFDS 1 were added to the projected 2025 No-action Alternative ridership totals for each station entrance and line proportionally based on projected 2025 No-action Alternative ridership.

Table 4-45: RFDS 1 Mode Share by Land Use

Mode Share	FBI	Future Office	Future Residential/ Retail
Vehicle	13.5%	17%	10%
Carpool	8.5%	11%	11%
Bicycle	2%	3%	8%
Walk	1%	2%	12%
Transit	75%	67%	59%
Percent of Transit Mode	**FBI**	**Future Office**	**Future Residential/ Retail**
Metrorail	84%	84%	85%
Metrobus	16%	16%	15%

Source: DDOT Scoping Form (Appendix A); MWCOG (2014c); WMATA (2006)

JEH PUBLIC TRANSIT
RFDS 1
ENVIRONMENTAL CONSEQUENCES
SUMMARY

No measurable impacts, however the long-term, major adverse impacts described for the No-action Alternative would continue.

Table 4-46: RFDS 1 Net Transit Trips

Use	Independent Variable	Time Period	All Modes			Transit Mode			
			IN	OUT	TOTAL	Transit Mode Split	IN	OUT	TOTAL
Existing JEH Trips to Subtract									
JEH	5,045 employees	AM Peak	1,361	102	1,463	75%	1,020	77	1,097
		PM Peak	68	1,289	1,357	75%	51	967	1,018
RFDS 1 Trips									
General Office	5,045 employees	AM Peak	2,131	291	2,422	67%	1,428	195	1,622
		PM Peak	395	1,926	2,321	67%	264	1,291	1,555
Net Trips for RFDS 1 (RFDS 1 Trips Minus JEH trips)									
Total		**AM Peak**					**407**	**118**	**525**
		PM Peak					**213**	**324**	**537**

Source: DDOT Scoping Form (Appendix A); MWCOG (2014c); WMATA (2006)
Note: Calculations may not appear correct due to rounding.

Table 4-47: RFDS 1 Net Metrorail Trips

Use	Independent Variable	Time Period	All Modes			Transit Mode			
			IN	OUT	TOTAL	Transit Mode Split	IN	OUT	TOTAL
Existing JEH Trips to Subtract									
JEH	5,045 employees	AM Peak	1,020	77	1,097	83.6%	853	64	917
		PM Peak	51	967	1,018	83.6%	43	808	851
RFDS 1 Trips									
General Office	5,045 employees	AM Peak	1,428	195	1,622	83.6%	1,194	163	1,356
		PM Peak	264	1,291	1,555	83.6%	221	1,079	1,300
Net Trips for RFDS 1 (RFDS 1 Trips Minus JEH trips)									
Total		**AM Peak**					**341**	**99**	**439**
		PM Peak					**178**	**271**	**449**

Source: DDOT Scoping Form (Appendix A); MWCOG (2014c); WMATA (2006)

Table 4-48: RFDS 1 AM Peak Period Projected Maximum Metrorail Passenger Loads by Line

Line	Segment	2014			2025 No-action Alternative		2025 RFDS 1	
		Passengers	Train Cars	Load	Passengers	Load	Passengers	Load
Red	Gallery Place to Metro Center	9,125	136	67.1	11,651	85.7	11,823	86.9
Orange	Smithsonian to Federal Triangle	5,870	94	62.4	7,495	79.7	7,605	80.9
Green	Mt. Vernon Square to Gallery Place	3,542	68	52.1	4,522	66.5	4,589	67.5
Yellow	L'Enfant Plaza to Archives	3,058	78	39.2	3,904	50.1	3.962	50.8
Blue	Smithsonian to Federal Triangle	1,691	44	38.4	2,159	49.1	3,191	49.8

Source: WMATA (2015h); DDOT Scoping Form (Appendix A)

Table 4-49: RFDS 1 PM Peak Period Projected Maximum Metrorail Passenger Loads by Line

Line	Segment	2014			2025 No-action Alternative		2025 RFDS 1	
		Passengers	Train Cars	Load	Passengers	Load	Passengers	Load
Red	Gallery Place to Metro Center	10,614	142	74.7	13.605	95.8	13,781	97.0
Orange	Smithsonian to Federal Triangle	2,448	42	58.3	3,158	74.4	3,178	75.7
Green	Mt. Vernon Square to Gallery Place	4,034	70	57.6	5,171	73.9	5,237	74.8
Yellow	L'Enfant Plaza to Archives	6,417	114	56.3	8,225	72.1	8,331	73.1
Blue	Smithsonian to Federal Triangle	3,588	78	46.0	4,599	59.0	4,658	59.7

Source: WMATA (2015h); DDOT Scoping Form (Appendix A)

Metrorail Passenger Loads

Refer to section 3.10.4.3 for further details on how Metrorail passenger loads were calculated. Metrorail passenger loads by line within the study area were calculated for the busiest segment of each line within the study area using forecasted ridership for RFDS 1 during the AM and PM peak periods. The scenario trips were distributed to the busiest segment of each line within the study area according to each segment's proportion of ridership within the study area.

Loads are highest on the Red line between Gallery Place and Metro Center during the PM peak period. Tables 4-48 and 4-49 summarize the passenger loads per car for RFDS 1 during the AM peak and PM peak periods.

Station Capacity Analysis

Refer to section 3.10.4.3 for further details on how station capacity analysis was calculated. A capacity analysis was conducted for the vertical elements (escalators and stairs), faregate aisles, fare vending machines, and platforms at Archives-Navy Memorial and Federal Triangle Metro Stations, as well as the south and east entrances to Metro Center and the east and west entrances at Gallery Place-Chinatown (the closest entrances to the JEH parcel). The analysis used peak 15-minute periods of ridership (entries and exits) at each station according to projected ridership for RFDS 1 for the year 2025. This includes additional trips associated with planned development projects, predicted regional transit growth, and the net trips calculated for RFDS 1 (distributed to each station entrance proportionally based on existing ridership). To calculate 15-minute ridership from peak hour ridership, AM and PM peak hour ridership totals were disaggregated using the average PHF in the study area (0.282 during the AM peak hour, 0.268 during the PM peak hour).

The v/c ratios were calculated for the vertical elements and fare elements, and pedestrian LOS was calculated for platform areas. Analysis for vertical elements and faregate aisles used projected ridership from the peak exiting period at each station entrance – based on the time period when the highest concentration of passengers would be using each element. Table 4-50 summarizes projected ridership during the peak existing period at each station entrance under RFDS 1. Overall, there is not a significant change in ridership between the No-action Alternative and RFDS 1.

The platform area analysis and fare vending machine analysis used projected ridership from the peak entering period at each station–the time period when the most passengers would likely use fare vending machines and the highest number of passengers would be waiting on the platform. Table 4-51 summarizes projected ridership during the peak entering period at each station platform under RFDS 1 (for peak entering period ridership by station entrance, see "Fare Vending Machine" sections in Appendix B). Overall, there is not a substantial change in ridership between the No-action Alternative and RFDS 1.

Overall, vertical elements and faregate aisles at each station are projected to operate below a v/c of 0.7, which is considered capacity. Fare vending machines are projected to operate above capacity at Archives-Navy Memorial, the east and west entrances to Gallery Place-Chinatown, and the east and south entrances to Metro Center).

Platform peak pedestrian LOS (based on the available spacing between passengers) on the busiest platform sections are projected to be at the acceptable pedestrian LOS B at Archives-Navy Memorial and Federal Triangle. The Red line platforms at Gallery Place-Chinatown and Metro Center are all projected to operate at a pedestrian LOS D, while the lower platforms at each station are projected to operate at a pedestrian LOS C. At pedestrian LOS D, passengers would likely begin to spread out farther down the platform. Further details on the station capacity analysis are found in the JEH TIA (Appendix B).

Details on the emergency evacuation analysis are found in the JEH TIA (Appendix B).

Table 4-50: RFDS 1 Weekday Peak 15-Minute Exiting Period Ridership

Metro Station	Time	2014		2025 No-action Alternative		2025 RFDS 1	
		Entries	Exits	Entries	Exits	Entries	Exits
Archives	8:45 AM – 9:00 AM	25	524	46	670	51	690
Federal Triangle	8:45 AM – 9:00 AM	15	467	28	597	31	614
Gallery Place East	6:15 PM – 6:30 PM	212	355	266	445	277	470
Gallery Place West	8:45 AM – 9:00 AM	12	301	15	378	18	389
Metro Center East	8:45 AM – 9:00 AM	44	434	55	544	63	561
Metro Center South	8:45 AM – 9:00 AM	20	427	36	546	40	562

Source: WMATA (2014d); MWCOG (2015); DDOT Scoping Form (Appendix A)

Table 4-51: RFDS 1 Weekday Peak 15-Minute Entering Period Platform Ridership

Metro Station	Time	2014		2025 No-action Alternative		2025 RFDS 1	
		Entries	Exits	Entries	Exits	Entries	Exits
Archives	5:00 PM – 5:15 PM	524	56	665	77	682	83
Federal Triangle	5:00 PM – 5:15 PM	501	38	635	55	652	57
Gallery Place Glenmont	5:00 PM – 5:15 PM	641	975	807	1,220	812	1,231
Gallery Place Shady Grove	5:00 PM – 5:15 PM	1,016	534	1,302	667	1,311	671
Gallery Place Green/ Yellow	5:00 PM – 5:15 PM	1,629	1,128	2,051	1,436	2,056	1,443
Metro Center Glenmont	5:30 PM – 5:45 PM	1,171	548	1,472	680	1,479	685
Metro Center Shady Grove	5:30 PM – 5:45 PM	1,183	691	1,490	859	1,496	861
Metro Center Blue/ Orange/Silver	5:30 PM – 5:45 PM	1,618	1,651	2,044	2,078	2,056	2,090

Source: WMATA (2014d); MWCOG (2015); DDOT Scoping Form (Appendix A)

PEAK HOUR FACTOR (PHF)

PHF is the proportion of hourly ridership that occurs during the peak 15-minute period of that hour.

Table 4-52: RFDS 1 Net Metrobus Trips

Use	Independent Variable	Time Period	All Modes			Transit Mode			
			IN	OUT	TOTAL	Transit Mode Split	IN	OUT	TOTAL
Existing JEH Trips to Subtract									
JEH	5,045 employees	AM Peak	1,020	77	1,097	16.4%	167	13	180
		PM Peak	51	967	1,018	16.4%	8	159	167
RFDS 1 Trips									
General Office	5,045 employees	AM Peak	1,428	195	1,622	16.4%	234	32	266
		PM Peak	264	1,291	1,555	16.4%	43	212	255
Net Trips for RFDS 1 (RFDS 1 Trips Minus JEH trips)									
Total		**AM Peak**					**67**	**19**	**86**
		PM Peak					**95**	**53**	**88**

Source: DDOT Scoping Form (Appendix A); MWCOG (2014c); WMATA (2006)
Note: Calculations may not appear correct due to rounding.

Table 4-53: RFDS 1 Total Bus Capacity Analysis

	2014		2025 No-action Alternative		2025 RFDS 1	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Total Volume	4,315	3,952	5,383	4,978	5,470	5,066
Total Capacity	11,425	10,698	11,425	10,698	11,425	10,698
Volume to Capacity Ratio (V/C)	0.38	0.37	0.47	0.47	0.48	0.47

Including trips from planned development projects.
Source: WMATA (2014f); MWCOG (2015); DDOT Scoping Form (Appendix A)

Metrobus Analysis

To evaluate the impact of the RFDS 1 to the bus network within the study area, the net transit trips calculated for the AM peak hour and PM peak hour in table 4-46 were disaggregated into Metrorail and Metrobus trips, using the transit mode splits from table 4-45. Table 4-52 summarizes net Metrobus trips generated by the scenario.

The net Metrobus trips associated with RFDS 1 were added to the AM peak hour and PM peak hour bus volumes calculated for the study area in the 2025 No-action Alternative. Both the AM peak hour and the PM peak hour were analyzed due to the fact that the AM peak hour had the highest No-action Alternative bus volumes, but the PM peak hour had a higher number of additional RFDS 1 trips than the AM peak hour. The trips were distributed proportionally to each route and direction within the study area based on 2025 No-action Alternative ridership levels.

Overall under RFDS 1, bus volumes are projected to be approximately 5,470 passengers during the AM peak period, and 5,066 passengers during the PM peak period. Both of these totals are well below projected capacity, as summarized in table 4-53.

Despite the fact that the total bus volume within the study area does not exceed the total bus capacity, several individual routes would likely experience capacity issues during peak hours. Peak volumes per hour on Routes 11Y, 32, 36, 80, and G8 are all projected to be over capacity by 2025 within the study area. WMATA has completed studies of the 30s Line (Routes 32 and 36), Route 80, and Route G8. Certain recommendations from these studies have already been implemented by WMATA prior to this study, and are all intended to help alleviate overcrowding on these routes. Further analysis would be required to determine the extent to which the recommendations would impact capacity on these routes. Specific recommendations from WMATA's studies to improve bus capacity are found in Appendix B. Appendix B also has further details on the bus capacity analysis.

Parking

It is unlikely the new building occupants would need to maintain security setbacks from the building that restrict all on-street parking surrounding the JEH parcel. Therefore, the addition of street parking on the JEH parcel block would be left to the discretion of DDOT and the exchange partner. It is assumed that at least one or more sides of the JEH parcel would be opened to on-street time restricted parking, with time limits established based on the parking restrictions in the immediate area and the need of the traffic network to accommodate peak volumes.

Under the assumptions of RFDS 1, the total number of off-street garage parking spaces on the parcel would remain largely consistent with the current off-street parking supply with parking garage access being provided along 10th Street NW. With similar projections of building users for RFDS 1 as under the Existing Condition, it is assumed that parking demand would stay similar.

Under RFDS 1, there would be no measurable long-term impacts to off-street parking, as demand is not anticipated to increase. There could be indirect, long-term, beneficial impacts to off-street parking if public on-street parking along the streets surrounding the JEH parcel is instituted.

However, there would be indirect, short-term, adverse impacts during construction due to some existing parking spaces that would be unavailable due to construction staging or the presence of construction equipment.

Truck Access

It is anticipated that trucks accessing the JEH parcel under RFDS 1 would use one of the current truck access point on 10th Street NW, unless DDOT required access on an alternative street due to traffic or safety reasons, because no substantial changes would be made to site circulation, and there would be no exterior changes to the building. If trucks were to access the JEH parcel at a different location or at more than just the 10th Street NW vehicular entrance, there would likely be different, and possibly more, conflicts with pedestrians.

There would be no long-term measurable impacts to truck access, as conditions would remain similar to the Existing Condition. If DDOT would require truck access on an alternative street or location, truck and pedestrian conflicts would be diverted to a different sidewalk location, but the context and intensity would not change.

There could be indirect, short-term adverse impacts to truck access during construction. Because rehabilitation of the JEH building would require extensive interior demolition and new material, the one truck access point to the parcel may not be sufficient during construction. Without certainty of the needs of the future tenants, this study is unable to further evaluate the impacts of truck access to the parcel. It is anticipated the exchange partner may need to undertake truck access or site distance studies in coordination with DDOT in order to address any access issues not considered here.

Traffic Analysis

The next sections describe the process the study followed to project future traffic volumes; the modal split is covered within the trip generation section.

RFDS 1 Trip Generation and Modal Split

Trip generation for RFDS 1 is predicated on the use assumptions developed for RFDS 1, as described in section 2.3. The scenario assumes that the current building would continue as office space only, with the same number of employees as currently supported. The existing FBI-generated vehicle trips must be removed prior to adding new vehicle trips to account for the FBI relocating from the JEH parcel to one of the alternative sites.

FBI Employee Person Trips

Section 3.9.4.2 describes the special trip generation study. The proposed office use replacing the existing FBI use relied on the ITE general office (ITE land use code 710). It is assumed that the FBI is using the existing space to the fullest at the JEH building; therefore, replacing the FBI use with general office would fit the same number of people as present or 5,045. This value was used to develop the future office trip generation, resulting in a net positive growth in trips. FBI trip generation (0.29 during the AM peak hour and 0.269 during the PM peak hour) is far less than the ITE rate of 0.48 during the AM peak hour and 0.46 during the PM peak hour. It should be noted that following the FBI trip generation study process to calculate the existing person trips that need to be removed and following the ITE process to calculate the future office person trips that need to be added results in a very conservative net trip value and also maintains consistency between the JEH parcel analysis methods and consolidated FBI HQ sites. Table 4-54 summarizes the net generated trips for RFDS 1.

RFDS 1 Modal Split

Trip generation rates have been observed and developed primarily in single use facilities in suburban locations without pedestrian or transit access. The JEH parcel is located in a dense, urban area with extensive access to many transit options as well as bicycle and pedestrian options. For example, the JEH parcel is centered among four WMATA Metrorail stations: Metro Center to the Northwest, Gallery Place/ Chinatown to the Northeast, Federal Triangle to the Southwest, and Archives to the Southeast. Therefore, the study reduced the trip generation to reflect typical vehicle use in such an urban setting. Based on discussions with DDOT through the scoping process, it was agreed for the future office modal split to follow WMATA's 2005 Development-Related Ridership Survey (WMATA 2006) and the MWCOG 2025 Travel Demand Model (MWCOG 2014c) mode split projections, as shown in table 4-55. See Appendix A for the DDOT Scoping Form.

JEH PARKING
RFDS 1 ENVIRONMENTAL CONSEQUENCES SUMMARY

Indirect, short-term, adverse impacts

JEH TRUCK ACCESS
RFDS 1 ENVIRONMENTAL CONSEQUENCES SUMMARY

No measurable impacts.

Table 4-54: RFDS 1 Net Generated Trips

Total Generated Trips								
Land Use	**Independent Variable**	**Units**	**AM In**	**AM Out**	**Total AM**	**PM In**	**PM Out**	**Total PM**
Existing FBI	Employees	(5,045)	(1,361)	(102)	(1,463)	(68)	(1,289)	(1,357)
New Office	Employees	5,045	2,131	291	2,422	395	1,926	2,321
Net Trips			**770**	**188**	**959**	**327**	**637**	**964**

Note: Numbers in parenthesis are negative numbers.

Table 4-55: RFDS 1 Mode Split Assumptions

Mode Share	FBI	Future Office
Single-Occupant Vehicle	13.5%	17%
Carpool	8.5%	11%
Bicycle	2%	3%
Walk	1%	2%
Transit	75%	67%

JEH TRAFFIC ANALYSIS
RFDS 1 ENVIRONMENTAL CONSEQUENCES SUMMARY

Indirect, short- and long-term, adverse impacts to traffic.

Table 4-56: RFDS 1 Vehicle Trips Generated

Land Use	Travel Mode	Modal Split (Percent)	AM In	Am Out	Am Hour	PM In	PM Out	PM Hour
Existing FBI	SOV	13.5	(184)	(14)	(198)	(9)	(174)	(183)
	HOV	8.5	(23)	(2)	(25)	(1)	(22)	(23)
New Office	SOV	17.0	362	49	411	67	327	394
	HOV	11.0	47	6	53	9	42	51
Net Trips			202	39	241	66	170	239

Note: Negative numbers are shown in parenthesis (#).

Table 4-57: RFDS 1 Vehicle Trip Distribution

Destination	Road	Office Distribution
East DC/MD	Constitution Avenue East	4.0%
North DC	14th Street North	5.0%
Northeast DC/MD	7th Street North	26.0%
Northwest DC	H Street West	7.0%
Northwest MD, Western VA	Constitution Avenue West	29.0%
South DC, Southeast MD, Southwest VA	12th Street / 9th Street	29.0%
TOTAL		100.0%

After combining the trip generation with the modal split, the forecasted vehicle trips were calculated. The vehicle trips were then separated into SOV and high-occupancy vehicles (HOV). Because the study area is located in a downtown setting, the HOV were assumed to be an average of five persons per vehicle (includes vanpools). This resulted in 241 total AM peak hour vehicle trips and 239 total PM peak hour vehicle trips. Table 4-56 contains the vehicle trips generated under RFDS 1.

RFDS 1 Trip Distribution/Trip Assignment

Trip distribution represents the origin-destination pattern by percentage for trips generated or removed to/from points beyond the study area boundary (e.g., 26 percent destined to northeast DC and on to Maryland via 7th Street north, or 29 percent destined to southern DC, southeast Maryland and southwest Virginia via 12th Street and 9th Street).

Trips for current FBI employees were removed from the roadways. This was accomplished by identifying the zip codes of current employees, calculating the percentage of employees traveling to and from different sections of the region based on the number of employees in each of those zip codes, identifying the most logical routes to different sections of the region, and removing the peak FBI trips from those routes.

The MWCOG 2025 Travel Demand Model trip tables were used to determine the trip distribution for new employees at the parcel. The model is broken into 3,700 traffic analysis zones (TAZ) (a statistical boundary similar in size to census blocks) covering the Washington Metropolitan area. The JEH parcel is in Zone 21. The new employee trips were apportioned to origins and destinations outside the study area boundary based on the MWCOG trip tables. The trip distribution is summarized in table 4-57.

The subtraction of current FBI employee trips combined with the addition of new employee trips equals the net trip change between the No-action Alternative and RFDS 1. The total scenario net trip change AM and PM forecasted turning movement volumes are shown in figure 4-35.

Development of RFDS 1 Traffic Conditions

The planned developments, background growth, and RFDS 1 net trips, which subtract the new trips generated by RFDS 1 from existing FBI vehicle trips, were combined together to forecast conditions under RFDS 1. Figure 4-35 shows the AM and PM forecasted turning movement volumes under RFDS 1.

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Figure 4-35: RFDS 1 Net Trip Change AM and PM Forecasted Turning Movement Volumes

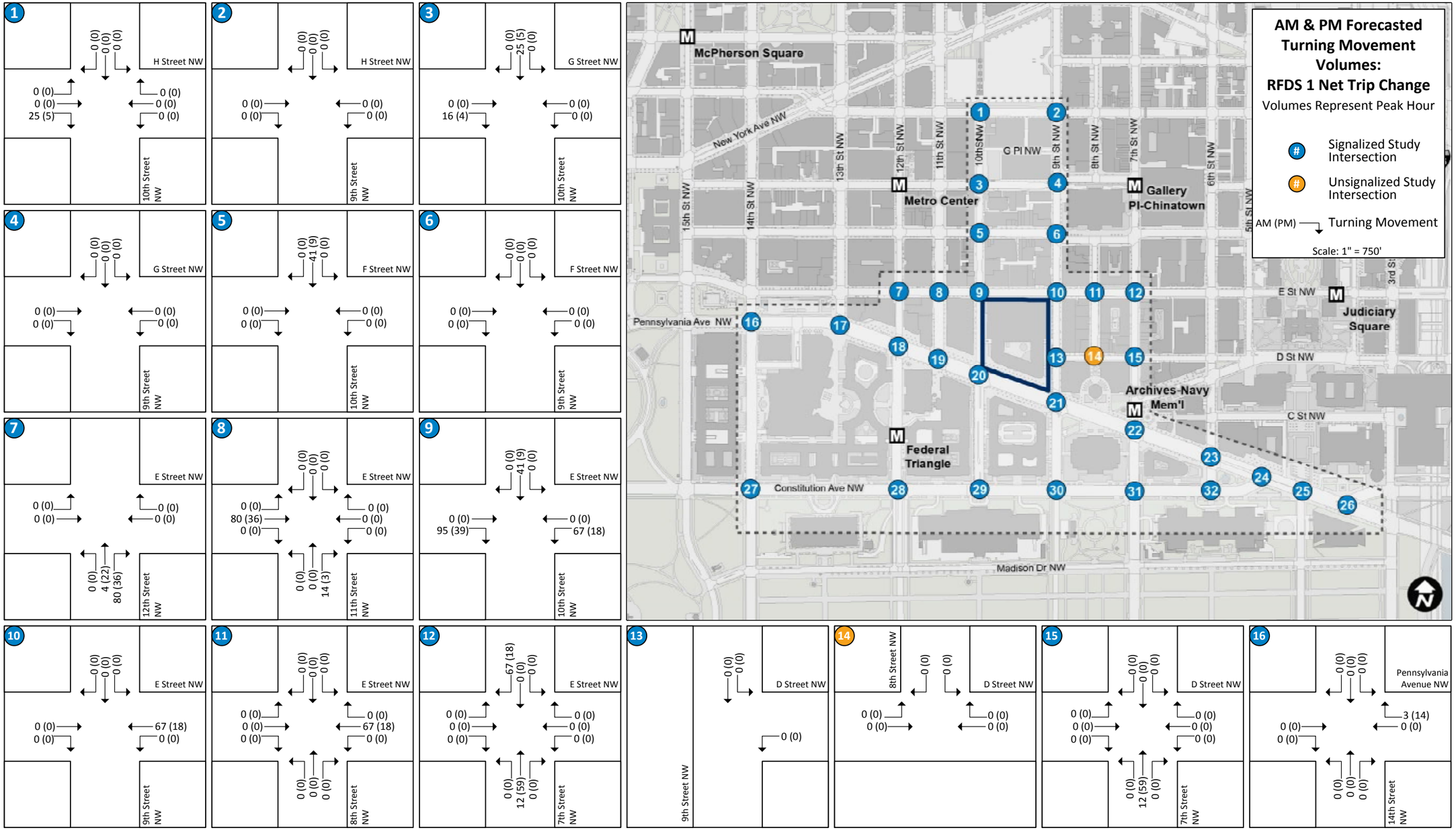


Figure 4-35: RFDS 1 Net Trip Change AM and PM Forecasted Turning Movement Volumes (continued)

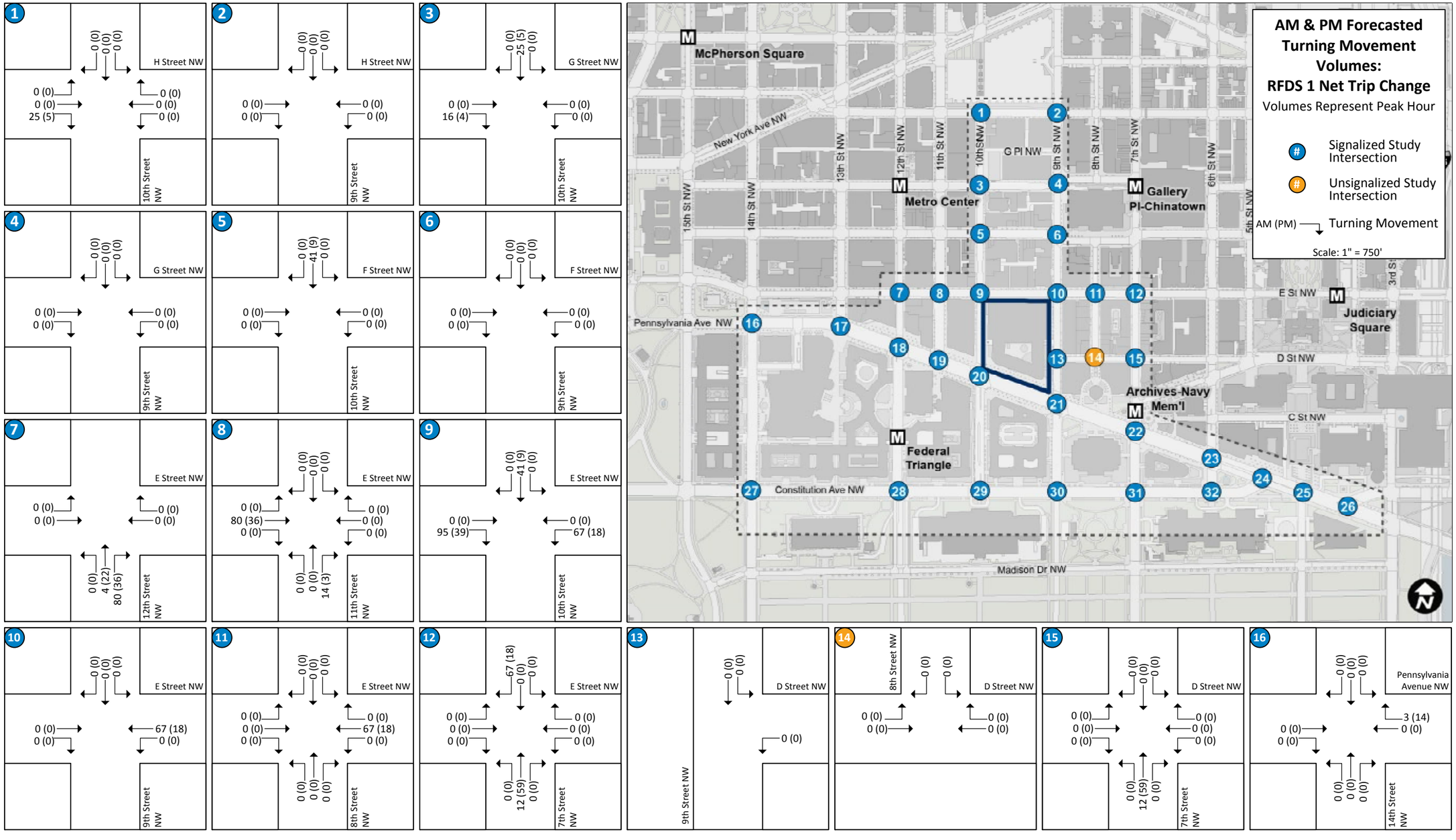


Figure 4-36: RFDS 1 AM and PM Forecasted Turning Movement Volumes

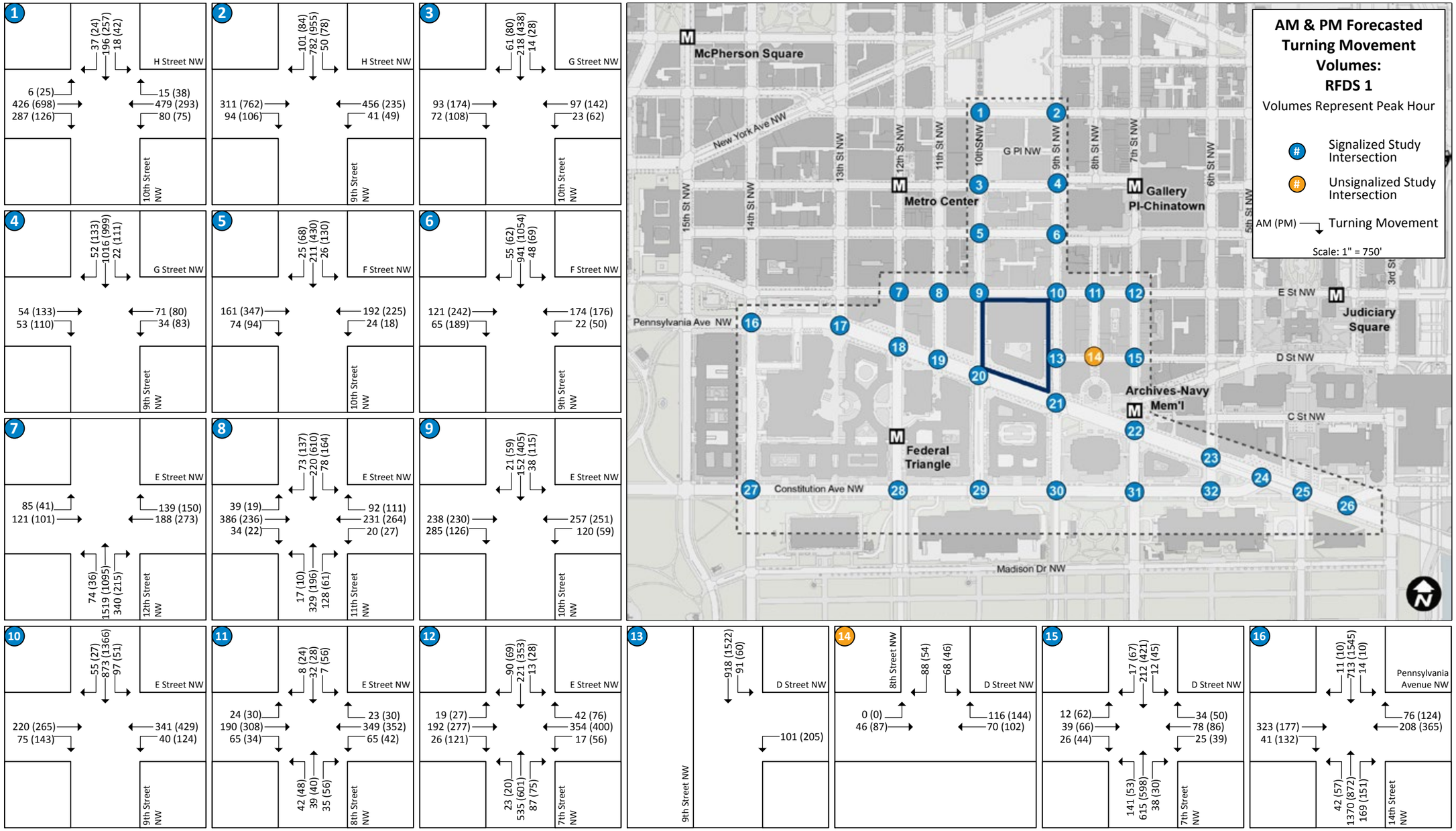


Figure 4-36: RFDS 1 AM and PM Forecasted Turning Movement Volumes (continued)

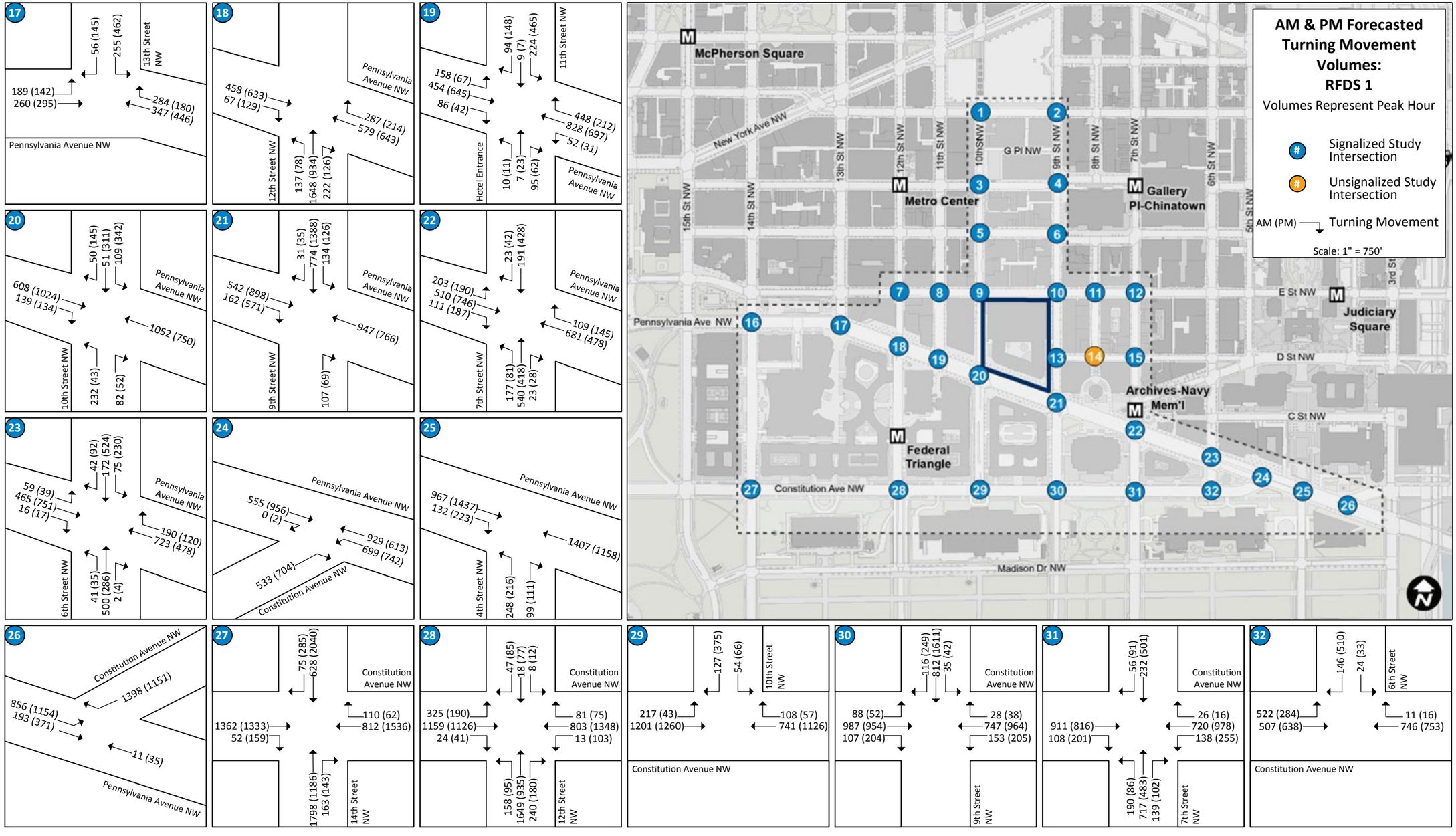
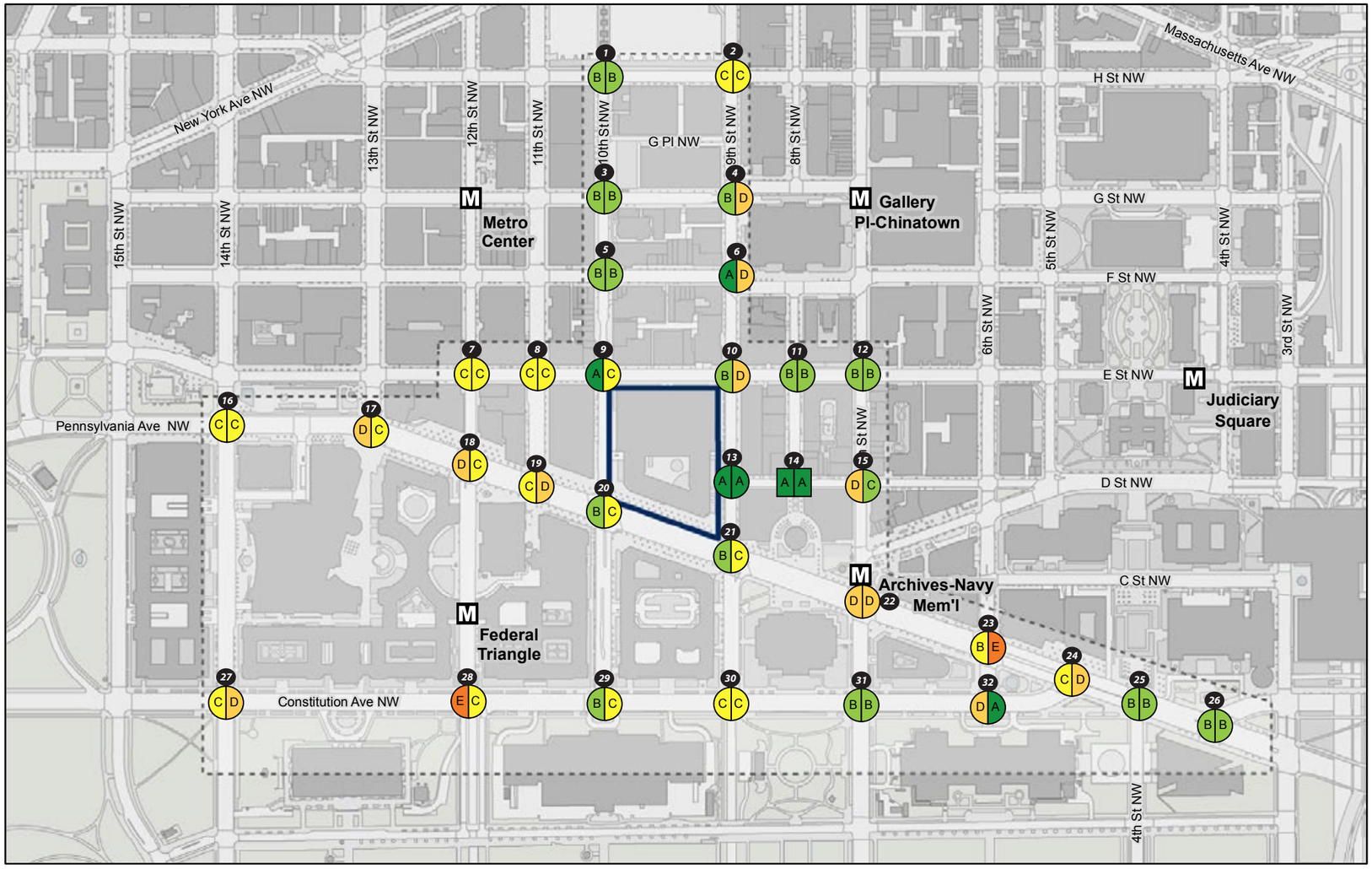


Figure 4-37: RFDS 1 Intersection LOS for AM and PM Peak Hours



RFDS 1 Operations Analysis

Based on the Synchro™ signalized intersection analysis, the majority of the study intersections would operate at acceptable conditions during the AM and PM peak hours in 2025. However, as in the No-action Alternative, the intersection of 6th Street NW and Pennsylvania Avenue NW would operate at LOS E during the PM peak hour. Under RFDS 1, the intersection of 12th Street NW and Constitution Avenue NW would also fail, operating at LOS E during the PM peak hour. These are the only intersections within the study area that would operate under unacceptable conditions during a peak hour period in 2025. None of the study area intersections would operate at LOS F during a peak hour. A total of 16 signalized intersections would experience an unacceptable conditions for one or more turning movements. Compared to the No-action Alternative, RFDS 1 would have one more intersection failing during the AM peak hour and no change in the number of intersections failing during the PM peak hour. The JEH TIA (Appendix B) contains a more detailed traffic operations analysis for RFDS 1.

The overall intersection LOS grades for the RFDS 1 are shown in figure 4-37 for the AM and PM peak hours. Table 4-58 shows the results of the LOS capacity analysis and the intersection projected delay under the RFDS 1 during the AM and PM peak hours.

RFDS 1 Queuing Analysis

Based on the Synchro™ queuing analysis, 30 signalized intersections would experience queuing lengths that would exceed the available storage capacity. The remaining intersections in the study area would provide sufficient storage for the anticipated demand. Compared to the No-action Alternative, RFDS 1 would have failing queues for four less intersections during the AM peak hour and one less intersection during the PM peak hour. The JEH TIA (Appendix B) contains a more detailed traffic queuing analysis.

Table 4-58: Comparison of JEH Parcel No-action Alternative and RFDS 1 Intersection Operations for AM and PM Peak Hours

#	Intersection	No-action Alternative						RFDS 1					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check
1	**10th Street NW & H Street NW (Signalized)**												
		12.8	B	Pass	19.6	B	Pass	12.9	B	Pass	19.6	B	Pass
2	**9th Street NW & H Street NW (Signalized)**												
		20.3	C	Pass	24.7	C	Pass	20.3	C	Pass	24.6	C	Pass
3	**10th Street NW & G Street NW (Signalized)**												
		14.6	B	Pass	18.2	B	Pass	15.1	B	Pass	18.4	B	Pass
4	**9th Street NW & G Street NW (Signalized)**												
		13.0	B	Pass	45.7	D	Pass	13.0	B	Pass	45.7	D	Pass
5	**10th Street NW & F Street NW (Signalized)**												
		12.1	B	Pass	17.4	B	Pass	12.6	B	Pass	17.3	B	Pass
6	**9th Street NW & F Street NW (Signalized)**												
		9.8	A	Pass	41.5	D	Pass	9.8	A	Pass	41.5	D	Pass
7	**12th Street NW & E Street NW (Signalized)**												
		21.8	C	Pass	26.3	C	Pass	22.6	C	Pass	26.8	C	Pass
8	**11th Street NW & E Street NW (Signalized)**												
		14.7	B	Pass	26.4	C	Pass	22.9	C	Pass	26.8	C	Pass
9	**10th Street NW & E Street NW (Signalized)**												
		8.8	A	Pass	24.8	C	Pass	9.7	A	Pass	24.4	C	Pass
10	**9th Street NW & E Street NW (Signalized)**												
		13.0	B	Pass	46.2	D	Pass	14.4	B	Pass	46.1	D	Pass
11	**8th Street NW & E Street NW (Signalized)**												
		13.7	B	Pass	13.5	B	Pass	16.6	B	Pass	13.7	B	Pass
12	**7th Street NW & E Street NW (Signalized)**												
		19.4	B	Pass	18.7	B	Pass	19.1	B	Pass	18.9	B	Pass
13	**9th Street NW & D Street NW (Signalized)**												
		7.7	A	Pass	8.1	A	Pass	7.7	A	Pass	8.1	A	Pass
14	**8th Street NW & D Street NW (AWSC)**												
		8.2	A	Pass	8.4	A	Pass	8.2	A	Pass	8.4	A	Pass
15	**7th Street NW & D Street NW (Signalized)**												
		38.7	D	Pass	18.2	B	Pass	43.1	D	Pass	20.4	C	Pass
16	**14th Street NW & Pennsylvania Avenue NW (Signalized)**												
		27.3	C	Pass	21.3	C	Pass	27.3	C	Pass	21.2	C	Pass
17	**13th Street NW & Pennsylvania Avenue NW (Signalized)**												
		35.4	D	Pass	25.2	C	Pass	35.3	D	Pass	25.8	C	Pass

Table 4-58: Comparison of JEH Parcel No-action Alternative and RFDS 1 Intersection Operations fo AM and PM Peak Hours (continued)

#	Intersection	No-action Alternative						RFDS 1					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check
18	**12th Street NW & Pennsylvania Avenue NW (Signalized)**												
		32.9	C	Pass	20.1	C	Pass	47.5	D	Pass	20.1	C	Pass
19	**11th Street NW/Hotel Entrance & Pennsylvania Avenue NW (Signalized)**												
		32.8	C	Pass	48.1	D	Pass	34.7	C	Pass	49.2	D	Pass
20	**10th Street NW & Pennsylvania Avenue NW (Signalized)**												
		19.2	B	Pass	16.1	B	Pass	19.9	B	Pass	31.1	C	Pass
21	**9th Street NW & Pennsylvania Avenue NW (Signalized)**												
		12.5	B	Pass	26.8	C	Pass	12.4	B	Pass	26.6	C	Pass
22	**7th Street NW & Pennsylvania Avenue NW (Signalized)**												
		41.8	D	Pass	25.2	C	Pass	44.4	D	Pass	35.9	D	Pass
23	**6th Street NW & Pennsylvania Avenue NW (Signalized)**												
		16.9	B	Pass	57.4	E	Fail	16.8	B	Pass	57.4	E	Fail
24	**Constitution (WB) Avenue NW & Pennsylvania Avenue NW (Signalized)**												
		20.2	C	Pass	36.8	D	Pass	20.3	C	Pass	36.9	D	Pass
25	**4th Street NW & Pennsylvania Avenue NW (Signalized)**												
		10.6	B	Pass	14.2	B	Pass	10.8	B	Pass	14.2	B	Pass
26	**Constitution (EB) Avenue NW & Pennsylvania Avenue NW (Signalized)**												
		18.6	B	Pass	18.5	B	Pass	18.8	B	Pass	18.6	B	Pass
27	**14th Street NW & Constitution Avenue NW (Signalized)**												
		24.4	C	Pass	54.5	D	Pass	24.6	C	Pass	54.4	D	Pass
28	**12th Street NW & Constitution Avenue NW (Signalized)**												
		53.7	D	Pass	31.7	C	Pass	59.5	E	Fail	33.6	C	Pass
29	**10th Street NW & Constitution Avenue NW (Signalized)**												
		14.8	B	Pass	24.7	C	Pass	14.7	B	Pass	24.4	C	Pass
30	**9th Street NW & Constitution Avenue NW (Signalized)**												
		27.3	C	Pass	32.8	C	Pass	27.3	C	Pass	33.6	C	Pass
31	**7th Street NW & Constitution Avenue NW (Signalized)**												
		17.1	B	Pass	19.1	B	Pass	17.1	B	Pass	19.1	B	Pass
32	**6th Street NW & Constitution Avenue NW (Signalized)**												
		42.6	D	Pass	6.1	A	Pass	42.6	D	Pass	6.1	A	Pass

Notes:
AWSC = All-Way STOP-Controlled unsignalized intersection
EB = Eastbound, WB = Westbound
LOS = Level of Service
Delay is Measured in Seconds Per Vehicle.
Red cells denote intersections operating at unacceptable conditions.

Summary of Traffic Analysis: RFDS 1

Under RFDS 1, there would be indirect, long-term, adverse impacts to traffic. AM peak hour would experience isolated added delays at four intersections (7th and D Streets NW, 8th and E Streets NW, 12th Street and Pennsylvania Avenue NW, and 12th Street and Constitution Avenue NW) when compared to the No-action Alternative. During the PM peak hour, two intersections would have added delays (7th Street and Pennsylvania Avenue and 10th Street and Pennsylvania Avenue NW) when compared to the No-action Alternative.

Additionally, there could be indirect, short-term, adverse impacts to traffic during construction because of large amounts of construction truck traffic and the staging of construction equipment or materials in the roadway at certain times of the day.

4.2.9.3 RFDS 2

This section introduces the conditions under RFDS 2 for the JEH parcel and provides a summary of each mode of travel and the potential impact. This includes descriptions of the pedestrian network, bicycle network, public transit system, parking conditions, truck access, and traffic operations. Impacts under RFDS 2 are compared to the No-action Alternative.

Pedestrian Network

Without a detailed analysis of its own, there is no reliable and reasonably simple way to predict the amount of pedestrian trips from a given development site (DDOT 2014d). Therefore, given that the total development under RFDS 2 is 2.32 million GSF and the current JEH building is 2.8 million GSF, it is assumed the number of pedestrian trips would be similar due to similar overall sizes and the understanding that the scenario would add retail development which typically has higher pedestrian trip generation rates in downtown environments. Given the addition of new land uses for RFDS 2 and an alternate site layout with additional site circulation options, it is clear that the timing, direction, and circulation patterns of pedestrians on the parcel would change. While many of the pedestrian trips would still occur on the perimeter of the block, the introduction of multiple buildings on the parcel and pathways between buildings would introduce street level pedestrian trips, and possibly elevated pedestrian trips via physical connections or walkways to the interior of the parcel.

Based on a full redevelopment of the parcel, it is assumed that the exchange partner would upgrade the sidewalk frontages on the JEH parcel to DDOT's Downtown Streetscape Standards, including full ADA compliance at intersection crossing points on the block, and other applicable requirements in the reuse of the parcel (District Department of Public Works 2000). Given the current chasm or moat around the existing JEH building would no longer be present, there would likely be direct at-grade access to the retail on the ground floor and updated and improved pedestrian amenities. Furthermore, the removal of the security guard booths and barricade planters in the public right-of-way would improve sidewalk conditions. Therefore, the overall sidewalk conditions under RFDS 2 would provide substantial improvements for pedestrians over the No-action Alternative.

Therefore, under RFDS 2, there would be indirect, long-term, beneficial impacts to pedestrians. Although the proposed development is envisioned to produce a similar amount of pedestrian trips, different pedestrian circulation patterns and an improved pedestrian streetscape would occur. The improvement is due primarily to the introduction of pathways between the buildings allowing for pedestrian access, in addition to streetscape improvements and new amenities that may be implemented.

Redevelopment of the parcel would also cause indirect, short-term, adverse impacts to pedestrian circulation due to the temporary blockage of sidewalks or rerouting of pedestrian traffic during construction and/or construction staging.

Bicycle Network

There are no additional planned bicycle facilities directly adjacent to the JEH parcel in the MoveDC plan (DDOT 2014c), and therefore, no bicycle facilities would be constructed along with the parcel redevelopment. It is anticipated that a similar number or slight increase of people would travel to the parcel via bicycle given the similar amount of development on the parcel compared to the No Action Alternative and other bicycle improvements in the larger metropolitan area that are anticipated that may make bicycling more attractive to additional users. Therefore, there would be no measurable indirect impacts to bicycle facilities or the bicycle network in the study area under RFDS 2.

JEH PEDESTRIAN NETWORK RFDS 2 ENVIRONMENTAL CONSEQUENCES SUMMARY

Indirect, long-term, beneficial impacts.

JEH BICYCLE NETWORK RFDS 2 ENVIRONMENTAL CONSEQUENCES SUMMARY

No measurable impacts.

Table 4-59: RFDS 2 Mode Share by Land Use

Mode Share	FBI	Future Office	Future Residential/ Retail
Vehicle	13.5%	17%	10%
Carpool	8.5%	11%	11%
Bicycle	2%	3%	8%
Walk	1%	2%	12%
Transit	75%	67%	59%
Percent of Transit Mode	**FBI**	**Future Office**	**Future Residential/ Retail**
Metrorail	84%	84%	85%
Metrobus	16%	16%	15%

Source: DDOT Scoping Form (Appendix A); MWCOG (2014c); WMATA (2006)

JEH PUBLIC TRANSIT RFDS 2 ENVIRONMENTAL CONSEQUENCES SUMMARY

Indirect, short-term, adverse impacts; the long-term major adverse impacts under the No-action Alternative would continue.

INTERNAL CAPTURE TRIPS

Person trips that only travel between land uses within the JEH parcel.

Table 4-60: RFDS 2 Net Transit Trips

Use	Independent Variable	Time Period	All Modes IN	All Modes OUT	All Modes TOTAL	Transit Mode Transit Mode Split	Transit Mode IN	Transit Mode OUT	Transit Mode TOTAL
Existing JEH Trips to Subtract									
JEH	5,045 employees	AM Peak	1,361	102	1,463	75%	1,020	77	1,097
		PM Peak	68	1,289	1,357	75%	51	967	1,018
RFDS 2 Trips									
Residential	1,066 units	AM Peak	103	409	512	59%	61	241	302
		PM Peak	262	161	145	59%	154	95	250
Retail	172,956 square feet	AM Peak	88	57	665	59%	52	33	85
		PM Peak	348	317	665	59%	205	187	392
Office	1,416,348 square feet	AM Peak	1,372	148	1,520	67%	919	99	1,018
		PM Peak	266	1,332	1,598	67%	178	892	1,072
TOTAL		**AM Peak**	**1,563**	**614**	**2,177**	**-**	**1,032**	**374**	**1,406**
		PM Peak	**875**	**1,810**	**2,686**	**-**	**538**	**1,175**	**1,712**
Net Trips for RFDS 2 (RFDS 2 Trips Minus JEH trips)									
Total		**AM Peak**					**11**	**297**	**309**
		PM Peak					**487**	**208**	**694**

Source: DDOT Scoping Form (Appendix A); MWCOG (2014c); WMATA (2006)
Note: Calculations may not appear correct due to rounding.

Public Transit

The following sections describe the Metrorail and Metrobus modes within the study area under RFDS 2. The other transit modes, commuter bus, shuttles, and slugging, were not analyzed as these modes do not have existing or future ridership statistics, or comprehensive planning documents. It is anticipated that a similar number or slight increase of people would commute to the parcel via commuter bus, shuttle, or slugging given the similar amount of development on the parcel compared to the No-action Alternative.

Projected Transit Growth

Projected transit trips associated with the future development conditions were calculated for RFDS 2 and then added to the 2025 No-action Alternative ridership totals for the Metrobus and Metrorail modes. The site mode split was determined for each land use in the final scoping session with the DDOT, and was based on a number of previous studies and the parking supply planned for the scenario (see DDOT Scoping Form, Appendix A for further details). The transit mode was further split into Metrorail and Metrobus trips using average Metrobus/Metrorail mode splits from the 2005 WMATA Development Survey (WMATA 2006) and the MWCOG Round 8.3 Cooperative Forecasts (MWCOG, 2014b). Table 4-59 summarizes these mode splits by land use.

The total number of trips by peak period associated with RFDS 2 were determined using general office, apartment, and shopping center trip generation rates from the *ITE Trip Generation Manual* (ITE 2012). To calculate net trips for the scenario by peak period, existing trips to and from the parcel were subtracted from the total trips calculated for the scenario. Table 4-60 summarizes the net transit trips for the scenario. Note that values listed in table 4-60 under “All Modes” for the RFDS 2 Trips represent person trips after all internal capture trips (person trips that only travel between uses within the JEH parcel) were removed. RFDS 2 trips represent the number of net trips. Overall, RFDS 2 would result in approximately 309 additional AM peak transit trips and 694 additional PM peak transit trips (in and out columns combined).

Metrorail Analysis

To evaluate the impact under RFDS 2 to the Metrorail system within the study area, the net transit trips calculated for the AM peak hour and PM peak hour in table 4-60 were disaggregated into Metrorail and Metrobus trips, using the transit mode splits from table 4-59. Table 4-61 summarizes net Metrorail trips generated by RFDS 2.

The net Metrorail trips associated with RFDS 2 were added to the projected 2025 No-action Alternative ridership totals for each station entrance and line proportionally based on projected 2025 No-action Alternative ridership.

Table 4-61: RFDS 2 Net Metrorail Trips

Use	Independent Variable	Time Period	All Modes			Transit Mode			
			IN	OUT	TOTAL	Transit Mode Split	IN	OUT	TOTAL
Existing JEH Trips to Subtract									
JEH	5,045 employees	AM Peak	1,020	77	1,097	83.6%	853	64	917
		PM Peak	51	967	1,018	83.6%	43	808	851
RFDS 2 Trips									
Residential	1,066 units	AM Peak	61	241	302	84.7%	52	204	256
		PM Peak	154	95	250	84.7%	131	81	211
Retail	172,956 square feet	AM Peak	52	33	85	84.7%	44	28	72
		PM Peak	205	187	392	84.7%	174	158	332
Office	1,416,348 square feet	AM Peak	919	99	1,018	83.6%	768	83	851
		PM Peak	178	892	1,070	83.6%	149	746	895
TOTAL		**AM Peak**	**1,032**	**374**	**1,406**	**-**	**864**	**316**	**1,180**
		PM Peak	**538**	**1,175**	**1,712**	**-**	**454**	**985**	**1,439**
Net Trips for RFDS 2 (RFDS 2 Trips Minus JEH trips)									
Total		**AM Peak**					**11**	**252**	**262**
		PM Peak					**411**	**177**	**588**

Source: DDOT Scoping Form (Appendix A); MWCOG (2014c); WMATA (2006)
Note: Calculations may not appear correct due to rounding.

Table 4-62: RFDS 2 AM Peak Period Projected Maximum Metrorail Passenger Loads by Line

Line	Segment	2014			2025 No-action Alternative		2025 RFDS 2	
		Passengers	Train Cars	Load	Passengers	Load	Passengers	Load
Red	Gallery Place to Metro Center	9,125	136	67.1	11,651	85.7	11,754	86.4
Orange	Smithsonian to Federal Triangle	5,870	94	62.4	7,495	79.7	7,561	80.4
Green	Mt. Vernon Square to Gallery Place	3,542	68	52.1	4,522	66.5	4,562	67.1
Yellow	L'Enfant Plaza to Archives	3,058	78	39.2	3,904	50.1	3,939	50.5
Blue	Smithsonian to Federal Triangle	1,691	44	38.4	2,159	49.1	2,178	49.5

Source: WMATA (2015h); DDOT Scoping Form. (Appendix A)

Table 4-63: RFDS 2 PM Peak Period Projected Maximum Metrorail Passenger Loads by Line

Line	Segment	2014			2025 No-action Alternative		2025 RFDS 2	
		Passengers	Train Cars	Load	Passengers	Load	Passengers	Load
Red	Gallery Place to Metro Center	10,614	142	74.7	13.605	95.8	13,835	97.4
Orange	Smithsonian to Federal Triangle	2,448	42	58.3	3,158	74.4	3,191	76.0
Green	Mt. Vernon Square to Gallery Place	4,034	70	57.6	5,171	73.9	5,258	75.1
Yellow	L'Enfant Plaza to Archives	6,417	114	56.3	8,225	72.1	8,364	73.4
Blue	Smithsonian to Federal Triangle	3,588	78	46.0	4,599	59.0	4,677	60.0

Source: WMATA (2015h); DDOT Scoping Form. (Appendix A)

Metrorail Passenger Loads

Refer to section 3.10.4.3 for more details on how Metrorail passenger loads were calculated. Metrorail passenger loads by line within the study area were obtained from WMATA for the busiest segment of each line within the study area using forecasted ridership during the AM and PM peak periods for RFDS 2. The scenario trips were distributed to the busiest segment of each line within the study area according to each segment's proportion of ridership within the study area.

Loads are highest on the Red Line between Gallery Place and Metro Center during the PM peak period. Tables 4-62 and 4-63 summarize RFDS 2 passenger loads per car during the AM peak and PM peak periods.

Station Capacity Analysis

Refer to section 3.10.4.3 for more details on how station capacity analysis was calculated. A capacity analysis was conducted for the vertical elements (escalators and stairs), faregate aisles, fare vending machines, and platforms at Archives-Navy Memorial and Federal Triangle Stations, as well as the south and east entrances to Metro Center and the east and west entrances at Gallery Place-Chinatown (the closest entrances to the JEH parcel). The analysis used peak 15-minute periods of ridership (entries and exits) at each station according to projected 2025 future development Scenario 2 ridership. This includes additional trip associated with planned development projects, predicted regional transit growth, and the net trips calculated under RFDS 2, distributed to each station entrance proportionally based on existing ridership. To calculate 15-minute ridership from peak hour ridership, AM and PM peak hour ridership totals were disaggregated using the average PHF in the study area (0.282 during the AM peak hour, 0.68 during the PM peak hour).

The v/c ratios were calculated for the vertical elements and fare elements, and pedestrian LOS was calculated for platform areas. Analysis for vertical elements, faregate aisles, and fare vending machines used projected ridership from the peak exiting period at each station entrance– the time period when the highest concentration of passengers would be using each element. Table 4-64 summarizes projected ridership during the peak existing period at each station entrance under RFDS 2. Overall, there is not a significant change in ridership between No-action Alternative and RFDS 2.

The platform area analysis and fare vending machine analysis used projected ridership from the peak entering period at each station – the time period when the most passengers would likely use fare vending machines and the highest number of passengers would be waiting on the platform. Table 4-65 summarizes projected ridership during the peak entering period at each station platform under RFDS 2 (for peak entering period ridership by station entrance, see “Fare Vending Machine” sections in Appendix B). Overall, there is not a significant change in ridership between the No-action Alternative and RFDS 2.

Overall, vertical elements and faregate aisles at each station are projected to operate below a v/c of 0.7, which is considered capacity. Fare vending machines are projected to operate above capacity at Archives-Navy Memorial, the east and west entrances to Gallery Place-Chinatown, and the east and south entrances to Metro Center.

Platform peak pedestrian LOS (based on the available spacing between passengers) on the busiest platform sections are projected to be at the acceptable pedestrian LOS B at Archives-Navy Memorial and Federal Triangle. The three platforms at Gallery Place-Chinatown and Metro Center are all projected to operate at a pedestrian LOS C or D. At pedestrian LOS D, passengers would likely begin to spread out farther down the platform. Further details on the station capacity analysis and the relevant Metro station emergency evacuation analysis are found in the JEH TIA (Appendix B).

Table 4-64: RFDS 2 Weekday Peak 15-Minute Exiting Period Ridership

Metro Station	Time	2014		2025 No-action Alternative		2025 RFDS 2	
		Entries	Exits	Entries	Exits	Entries	Exits
Archives	8:45 AM – 9:00 AM	25	524	46	670	59	690
Federal Triangle	8:45 AM – 9:00 AM	15	467	28	597	36	597
Gallery Place East	6:15 PM – 6:30 PM	212	355	266	445	273	502
Gallery Place West	8:45 AM – 9:00 AM	12	301	15	378	21	378
Metro Center East	8:45 AM – 9:00 AM	44	434	55	544	76	545
Metro Center South	8:45 AM – 9:00 AM	20	427	36	546	46	546

Source: WMATA (2014d); MWCOG (2015); DDOT Scoping Form (Appendix A)

Table 4-65: RFDS 2 Weekday Peak 15-Minute Entering Period Platform

Metro Station	Time	2014		2025 No-action Alternative		2025 RFDS 2	
		Entries	Exits	Entries	Exits	Entries	Exits
Archives	5:00 PM – 5:15 PM	524	56	665	77	676	90
Federal Triangle	5:00 PM – 5:15 PM	501	38	635	55	646	62
Gallery Place Glenmont	5:00 PM – 5:15 PM	641	975	807	1,220	810	1,245
Gallery Place Shady Grove	5:00 PM – 5:15 PM	1,016	534	1,302	667	1,308	676
Gallery Place Green/ Yellow	5:00 PM – 5:15 PM	1,629	1,128	2,051	1,436	2,055	1,451
Metro Center Glenmont	5:30 PM – 5:45 PM	1,171	548	1,472	680	1,477	691
Metro Center Shady Grove	5:30 PM – 5:45 PM	1,183	691	1,490	859	1,494	865
Metro Center Blue/ Orange/Silver	5:30 PM – 5:45 PM	1,618	1,651	2,044	2,078	2,052	2,102

Source: WMATA (2014d); MWCOG (2015); DDOT Scoping Form (Appendix A)

PEAK HOUR FACTOR (PHF)

PHF is the proportion of hourly ridership that occurs during the peak 15-minute period of that hour.

Table 4-66: RFDS 2 Net Metrobus Trips

Use	Independent Variable	Time Period	All Modes			Transit Mode			
			IN	OUT	TOTAL	Transit Mode Split	IN	OUT	TOTAL
Existing JEH Trips to Subtract									
JEH	5,045 employees	AM Peak	1,020	77	1,097	16.4%	167	13	180
		PM Peak	51	967	1,018	16.4%	8	159	167
RFDS 2 Trips									
Residential	1,066 units	AM Peak	61	241	302	15.3%	9	37	46
		PM Peak	154	95	250	15.3%	24	15	38
Retail	172,956 square feet	AM Peak	52	33	85	15.3%	8	5	13
		PM Peak	205	187	392	15.3%	31	29	60
Office	1,416,348 square feet	AM Peak	919	99	1,018	16.4%	151	16	167
		PM Peak	178	892	1,070	16.4%	29	146	176
Total		**AM Peak**	**1,032**	**374**	**1,406**	**-**	**168**	**58**	**226**
		PM Peak	**538**	**1,175**	**1,712**	**-**	**84**	**190**	**274**
Net Trips for RFDS 2 (RFDS 2 Trips Minus JEH Trips)									
Total		**AM Peak**					**1**	**46**	**46**
		PM Peak					**76**	**31**	**107**

Source: DDOT Scoping Form (Appendix A); MWCOG (2014c); WMATA (2006)
Note: Calculations may not appear correct due to rounding.

Table 4-67: RFDS 2 Bus Capacity Analysis

	2014		2025 No-action Alternative[a]		2025 RFDS 2	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Total Volume	4,315	3,952	5,383	4,978	5,340	5,085
Total Capacity	11,425	10,698	11,425	10,698	11,425	10,698
Volume to Capacity Ratio (V/C)	0.38	0.37	0.47	0.47	0.48	0.48

[a] *Including trips from planned development projects.*
Source: WMATA (2014f); MWCOG (2015); DDOT Scoping Form (Appendix A)

Metrobus Analysis

To evaluate the impact of RFDS 2 to the bus network within the study area, the net transit trips calculated for the AM peak hour and PM peak hour were disaggregated into Metrorail and Metrobus trips, using the transit mode splits from table 4-59. Table 4-66 summarizes net Metrobus trips generated by RFDS 2.

The net Metrobus trips associated with RFDS 2 were added to the AM peak hour and PM peak hour bus volumes calculated for the study area in the 2025 No-action Alternative. Both the AM peak hour and the PM peak hour were analyzed due to the fact that the AM peak hour had the highest No-action Alternative bus volumes but the PM peak hour had a higher number of additional RFDS 2 trips than the AM peak hour. The trips were distributed proportionally to each route and direction within the study area based on 2025 No-action Alternative ridership levels.

As shown in table 4-67, Overall, the RFDS 2 bus volumes are projected to be approximately 5,340 passengers during the AM peak period, and 5,085 passengers during the PM peak period. Both of these totals are well below projected capacity. AM peak period volumes would be lower than No-action Alternative volumes, since the current JEH parcel generates more AM peak hour trips than the scenario.

Despite the fact that the total bus volume within the study area does not exceed the total bus capacity, several individual routes would likely experience capacity issues during peak hours. Peak volumes per hour on Routes 11Y, 32, 36, 80, and G8 are all projected to be over capacity by 2025 within the study area. WMATA has completed studies of the 30s Line (Routes 32 and 36), Route 80, and Route G8. Certain recommendations from these studies have already been implemented, and are all intended to help alleviate overcrowding on these routes. It is unclear whether all recommendations would be implemented by 2025. Further analysis would be required to determine the extent to which the recommendations would impact capacity on these routes. Specific recommendations from WMATA's studies to improve bus capacity are found in Appendix B. Appendix B also has further details on the bus capacity analysis.

Summary of Transit Analysis

Under RFDS 2, there would be no measurable impact when compared to the No-action Alternative. The long-term, major adverse impacts described for the No-action Alternative would continue, and there would be an incremental increase in the magnitude of adverse impacts due to further impacts to bus lines and the inadequate functioning of fare vending machines. Additionally, there could be indirect, short-term, adverse impacts to public transit associated with construction activities. Some bus routes that use roadways adjacent to the JEH parcel may experience delays and congestion if traffic lanes are reduced to allow staging area for construction, and bus stops may need to be moved during the construction process.

Parking

It is unlikely redevelopment of the JEH parcel would continue to require security setbacks from the building that restrict all on-street parking. Therefore, the addition of street parking on the JEH parcel would be left to the discretion of DDOT and the future developer. It is assumed that at least one or more sides of the JEH parcel would be opened to on-street time-restricted parking, with time limits established based on the parking restrictions in the immediate area and the need of the traffic network to accommodate peak volumes.

The total number of off-street garage parking spaces on the parcel would be determined by the market at the time of redevelopment. Under the assumptions of RFDS 2, a similar size garage as the one that currently exists would be built, providing approximately 800 parking spaces. Access to the parking garage is assumed to be on 10th Street NW, similar to the No-action Alternative. Given that the amount of parking would be "determined by the market," and given the high availability of several mass transit options in the area and trends toward less automobile use by city-dwellers, it is assumed that parking demand would stay similar to the No-action Alternative but that the concentration of peak hour vehicular trips would be more balanced or dispersed due to the introduction of additional uses that would have different inbound and outbound travel patterns and times. However, it should be noted that the attractiveness of future proposed development and retail offerings would result in increased demand for on-street parking at certain times of the day, such as evenings and nights; this demand would be consistent with other downtown parking demands and could partially be accommodated by any on-street parking that was added. It is assumed that vehicles of future residents that were not parked on the street would be stored in off-street parking facilities in the area.

Under RFDS 2, there would likely be in minor increases in the amount of on-street parking supply; because no measurable changes in off-street parking or parking demand are anticipated, the scenario would have indirect, long-term, beneficial impacts to parking. This would be due to the slight increase in public on-street parking. However, there would be indirect, short-term, adverse impacts during construction due to some existing parking spaces that would be unavailable due to construction staging or the presence of construction equipment.

Truck Access

Redevelopment of the parcel would open up the opportunity for truck access on the parcel to be moved. As DDOT requires truck access and loading to be from an alley where feasible and the site design with interior street access for the on-site buildings is unknown at this time, it is not possible to predict where truck access for RFDS 2 would be located (District Department of Public Works 2000). The location and specific details of truck access would need to be determined with DDOT through the redevelopment process. If more than one truck access point was permitted with redevelopment, as would be the case if the exchange partner introduced an alley to the parcel, there could be increased conflicts between trucks and pedestrians depending on the location of the access points to the parcel. To serve the large amount of development and varied uses under RFDS 2, it is likely the developer would apply for more than one vehicular access point to the site. It should be noted that according to the DDOT Design and Engineering Manual, when changes occur at a property due to redevelopment, "all existing driveways shall be restored with new curb and gutter, tree space, and sidewalk to current DDOT standards" and that "any existing attached curb cut proposed for [a] new use shall be applied for as a new curb cut and driveway" with DDOT (DDOT 2009c).

Redevelopment of the parcel would cause indirect, short-term, adverse construction impacts to truck access because there would be limited areas for site access and the loading areas may shift locations during development of the parcel. With the assumption that truck access would continue to the parcel with minimal access points, but likely more than one vehicular access location, there could be indirect, long-term, adverse impacts to truck access under RFDS 2. This includes the potential diversion of pedestrian conflicts to a different sidewalk location. Without understanding the needs of the future tenants, there is insufficient information available to evaluate the impacts of truck access to the parcel. It is anticipated that a future developer would need to obtain new permits and approvals related to truck access locations and possibly undertake additional truck access studies following approved DDOT methods.

JEH PARKING
RFDS 2 ENVIRONMENTAL CONSEQUENCES SUMMARY

Indirect, long-term, beneficial impacts; indirect, short-term, adverse impacts.

JEH TRUCK ACCESS
RFDS 2 ENVIRONMENTAL CONSEQUENCES SUMMARY

Indirect, short-term, adverse impacts. Insufficient information to evaluate long-term impacts.

Table 4-68: RFDS 2 Person Trips Generated

Land Use/ ITE Code	Independent Variable	Units	AM In	AM Out	Total AM	PM In	PM Out	Total PM
Existing FBI	employees	(5,045)	(1,361)	(102)	(1,463)	(68)	(1,289)	(1,357)
Apartments/ITE Code: 220	units	1,066	105	421	526	393	211	604
Shopping Center/ ITE Code: 820	SQ feet	172.96	135	83	218	424	441	865
General Office/ ITE Code: 710	SQ feet	1,416.35	1,404	191	1,595	283	1,382	1,665
Total Net Trips			**283**	**593**	**876**	**1,032**	**745**	**1,777**

Table 4-69: RFDS 2 Mode Split Assumptions

Mode Share	FBI	Future Office	Future Residential/ Retail
Single Occupant Vehicle	13.5%	17%	10%
Carpool	8.5%	11%	11%
Bicycle	2%	3%	8%
Walk	1%	2%	12%
Transit	75%	67%	59%

JEH TRAFFIC ANALYSIS
RFDS 2 ENVIRONMENTAL CONSEQUENCES SUMMARY

Indirect, short- and long-term, adverse impacts.

Traffic Analysis

The future projected traffic analysis is based on removing the existing building and redeveloping the parcel to the maximum extent possible. The next sections describe the process the study followed to project future traffic volumes; modal split is covered within the trip generation section.

RFDS 2 Trip Generation and Modal Split

Trip generation under RFDS 2 is predicated on the assumed proposed land uses for the parcel: office, residential and retail. The method for quantifying the current FBI trips by peak hour are the same as described in section 3.9.3.4. Trip generation for each type of potential development is derived from ITE's *Trip Generation Manual* (Ninth Edition [ITE 2014]). The selected development types (e.g., apartment and shopping center) represent the higher end of potential development scenarios. For example, condominiums and boutique specialty shops generate fewer trips than apartments and shopping centers. A total of 876 net person trips during the AM peak hour and 1,777 net person trips during the PM peak hour would be generated. It should be noted that by following the FBI trip generation study to calculate the existing person trips to remove and ITE to calculate the future office, residential, and retail person trips to add results in a very conservative net trip value and also maintains consistency between the JEH parcel analysis methods and Consolidated FBI HQ sites. Table 4-68 shows the person trips generated under RFDS 2.

A mixed-use development, as proposed under the RFDS 2, would result in "internal capture," where some portion of the trips would not leave the parcel (i.e., residential to retail use, residential to office use, or office to retail use). The internal capture process is based on the procedures outlined in the ITE's *Trip Generation Handbook* (Second Edition [ITE 2004]) following updated internal capture rates published in NCHRP 684 (TRB 2011). The internal capture process closely follows the ITE *Proposed Recommended Practice Trip Generation Handbook* (Third Edition [ITE 2014]) recommended internal capture procedure. The study calculated the JEH parcel internal capture rates through interaction between the proposed residential, retail, and office uses. Appendix B contains the internal capture worksheets for the JEH building.

The JEH building is located in a dense, urban area with extensive access to many transit options as well as bicycle and pedestrian options. Therefore, the study reduced the trip generation to reflect typical vehicle use in such an urban setting. Based on discussions with DDOT through the scoping process, it was agreed for the future office modal split to follow WMATA's 2005 Development-Related Ridership Survey (WMATA 2006) and the MWCOG 2025 Travel Demand Model (MWCOG 2014c) mode split projections, as shown in table 4-69.

After combining the trip generation, removing the internal capture trips and applying the modal split, the forecasted vehicle trips were calculated. The vehicle trips were then separated into SOV and HOV. Since the study area is located in a downtown setting, the HOV were assumed to be an average of five persons per vehicle. This resulted in 150 net AM peak hour vehicle trips and 233 net PM peak hour vehicle trips. Table 4-70 contains the vehicle trips generated under RFDS 2.

RFDS 2 Trip Distribution/Trip Assignment

Because the proposed uses for the JEH parcel produce a different distribution pattern than the existing FBI employee trips, the new uses required a distribution pattern. Consistent with the method used for RFDS 1, current FBI employee trips were removed from the roadways based on their home zip codes and using the most likely route leaving the study area to reach that zip code.

The study used the MWCOG 2025 model to establish distribution patterns for the new trips. Different trip types – in this case residential, commercial and office – all have different distribution patterns. These patterns also differ based on location. The JEH parcel is located in Zone 21 in the MWCOG model. This zone does not currently include enough residential or commercial units to establish a reliable distribution pattern. Therefore, the zone was only used for the new office trips. Zone 19, which is adjacent to Zone 21, does have a good representation of residential units; therefore the residential distribution of trips used Zone 19 distribution. Similarly, Zone 24, also adjacent to Zone 21, has a good representation of retail/ commercial trips, and was therefore used to generate the trip distribution for retail/ commercial trips. Office, retail and residential trip distributions are summarized in table 4-71. According to the MWCOG model, 5 percent of residential trips would remain within the study area.

The subtraction of current FBI employee trips combined with the addition of new RFDS 2 employee trips equals the net trip change between the No-action Alternative and the RFDS 2. The total net trip change for AM and PM forecasted turning movement volumes are shown in figure 4-38.

Development of RFDS 2 Traffic Conditions

The planned developments, background growth, and RFDS 2 net trips (existing FBI vehicle trips minus the new trips generated by RFDS 2) were combined together to forecast conditions under RFDS 2. Figure 4-39 shows the AM and PM forecasted turning movement volumes under RFDS 2.

Table 4-70: RFDS 2 Vehicle Trips Generated

LAND USE	UNITS/SIZE/ MODE SHARE	AM PEAK HOUR TRIPS			PM PEAK HOUR TRIPS		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Existing J Edgar Hoover Building FBI HQ	2.1M SF	-1,361	-102	-1,463	-68	-1,289	-1,357
SOV	13.5 percent	-184	-14	-198	-9	-174	-183
HOV (5 persons per vehicle)	8.5 percent	-23	-2	-25	-1	-22	-23
Total Vehicle Trips		**-207**	**-16**	**-222**	**-10**	**-196**	**-206**
Apartments (ITE - 220)	1,066 units	105	421	526	393	211	604
Internal Capture Trips (following NCHRP 684 Tables)		-2	-12	-14	-131	-50	-181
Net Extenal Person Trips		103	409	512	262	161	423
SOV	10 percent	10	41	51	26	16	42
HOV (5 persons per vehicle)	11 percent	2	9	11	6	4	9
Total Vehicle Trips		**13**	**50**	**62**	**32**	**20**	**52**
Shopping Center (ITE - 820)	172,956 SF	135	83	218	424	441	865
Internal Capture Trips (following NCHRP 684 Tables)		-47	-26	-73	-76	-124	-200
Net Extenal Person Trips		88	57	145	348	317	665
SOV	10 percent	9	6	15	35	32	67
HOV (5 persons per vehicle)	11 percent	2	1	3	8	7	15
Total Vehicle Trips		**11**	**7**	**18**	**42**	**39**	**81**
General Office (ITE - 710)	1416348 SF	1,404	191	1,595	283	1,382	1,665
Internal Capture Trips (following NCHRP 684 Tables)		-32	-43	-75	-17	-50	-67
Net Extenal Person Trips		1,372	148	1,520	266	1,332	1,598
SOV	17 percent	233	25	258	45	226	272
HOV (5 persons per vehicle)	11 percent	30	3	33	6	29	35
Total Vehicle Trips		**263**	**28**	**292**	**51**	**256**	**307**
TOTAL VEHICLE TRIPS		**80**	**70**	**150**	**115**	**118**	**233**

Notes:

SF = Square Feet

Table 4-71: RFDS 2 Vehicle Trip Distribution

Destination	Road	Office	Residential	Retail
East DC/MD	Constitution Avenue East	4.0%	6.0%	8.0%
North DC	14th Street North	5.0%	11.0%	4.0%
Northeast DC/MD	7th Street North	26.0%	28.0%	32.0%
Northwest DC	H Street	7.0%	5.0%	11.0%
Northwest MD, Western VA	Constitution Avenue West	29.0%	20.0%	22.0%
South DC, Southeast MD, Southwest VA	12th Street / 9th Street	29.0%	25.0%	23.0%
Study Area	N/A		5.0%	
TOTAL		**100.0%**	**100.0%**	**100.0%**

Figure 4-38: RFDS 2 Net Trip Change AM and PM Forecasted Turning Movement Volumes

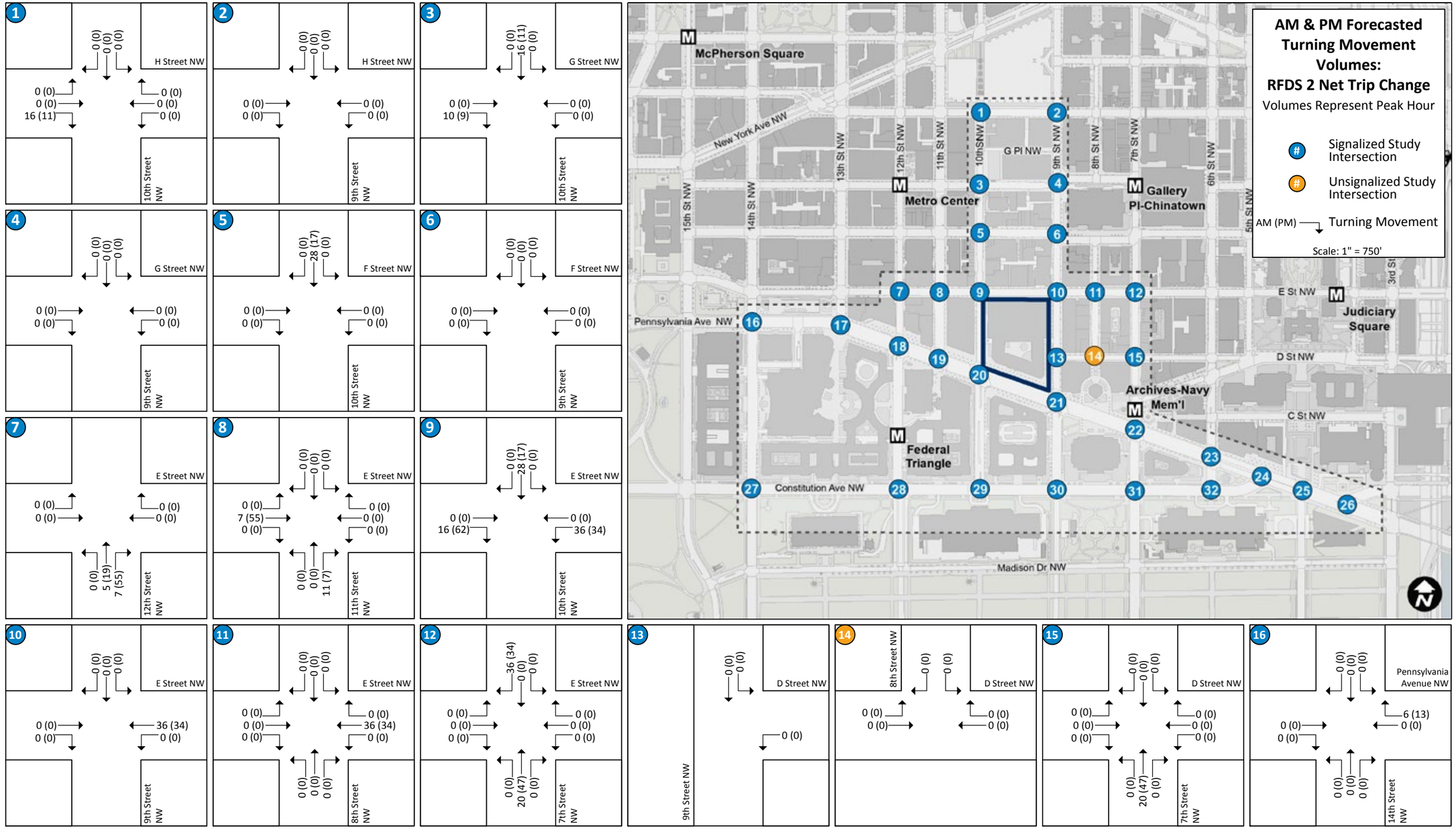


Figure 4-38: RFDS 2 Net Trip Change AM and PM Forecasted Turning Movement Volumes (continued)

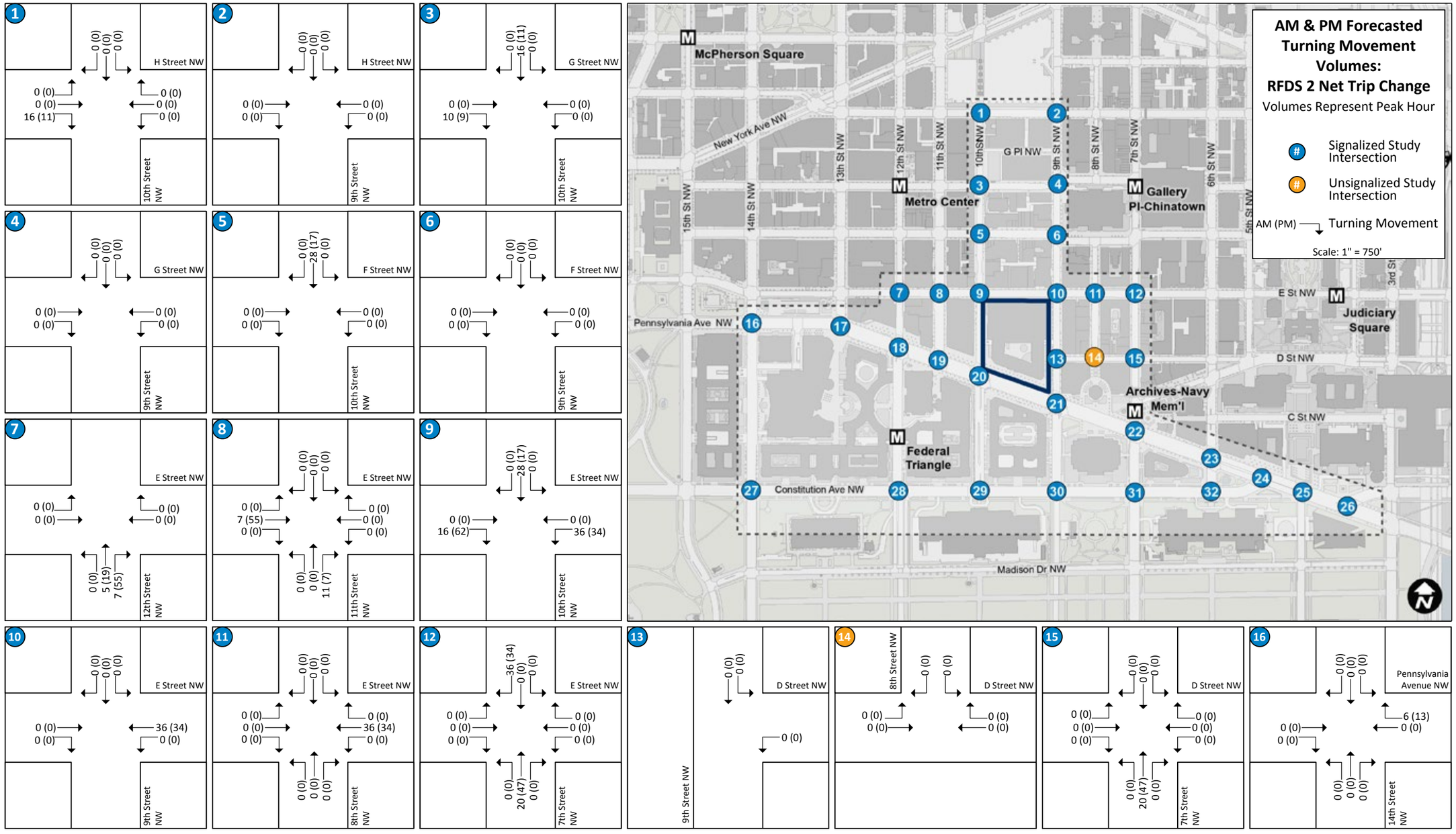


Figure 4-39: RFDS 2 AM and PM Forecasted Turning Movement Volumes

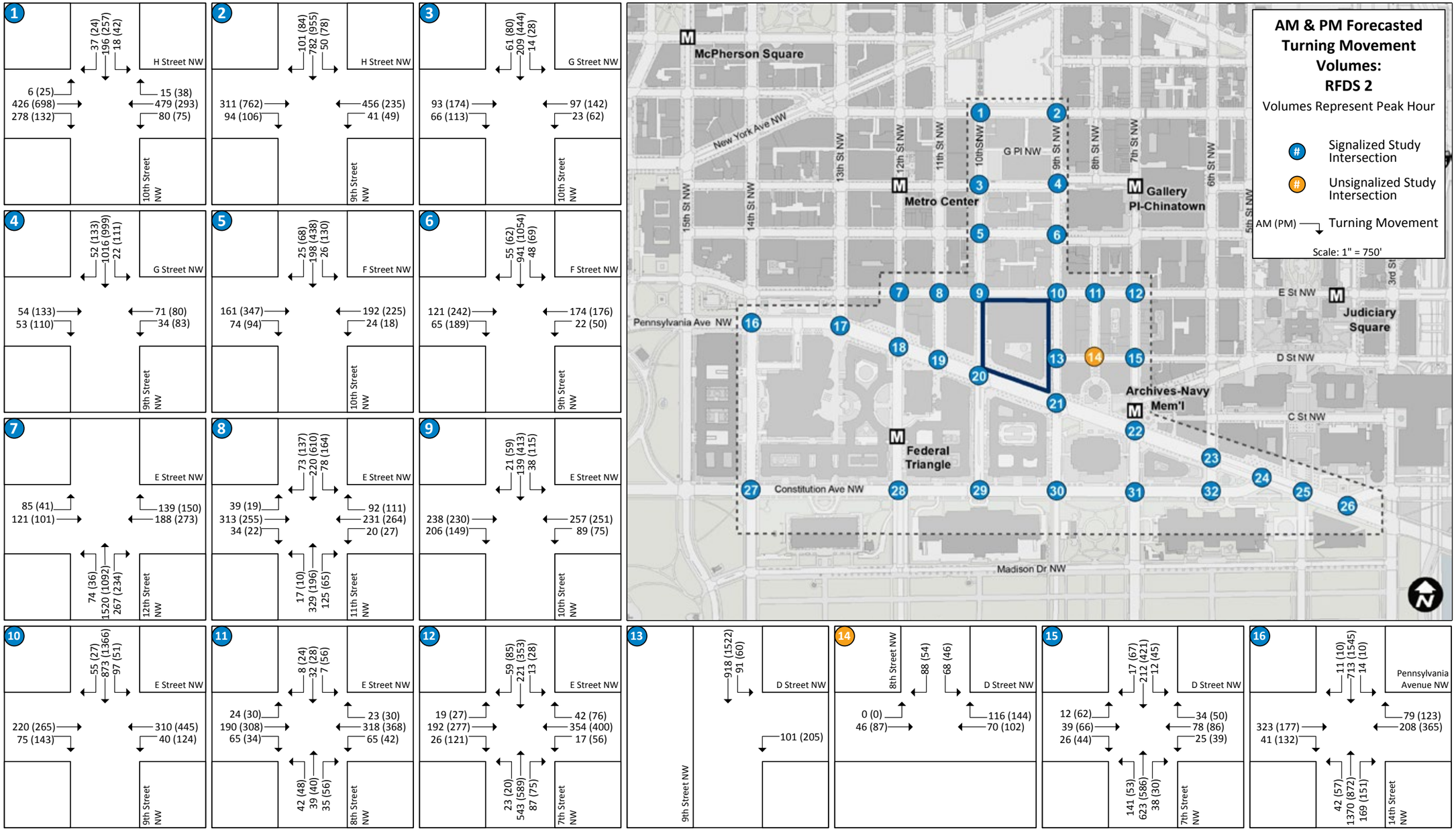


Figure 4-39: RFDS 2 AM and PM Forecasted Turning Movement Volumes (continued)

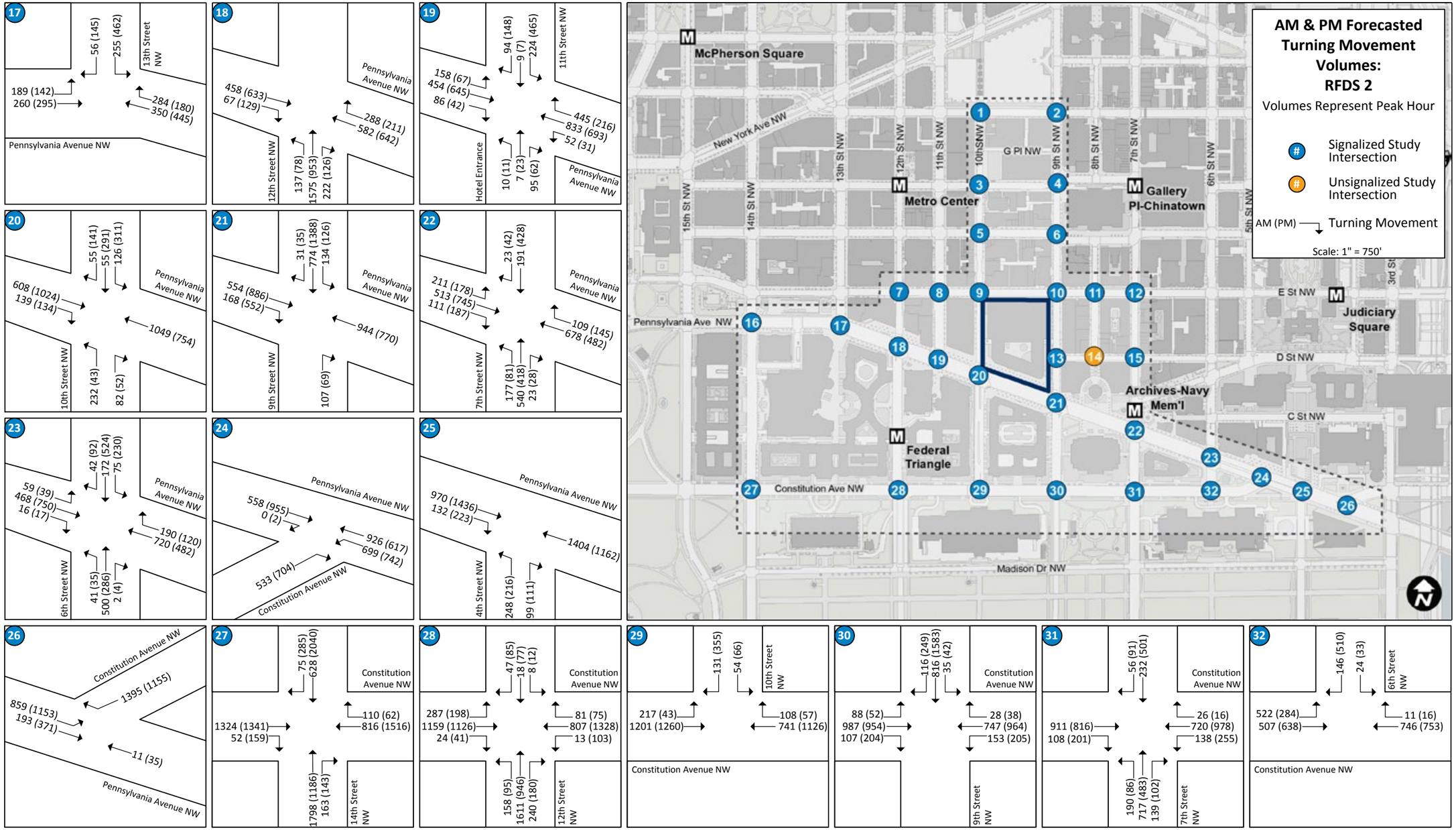
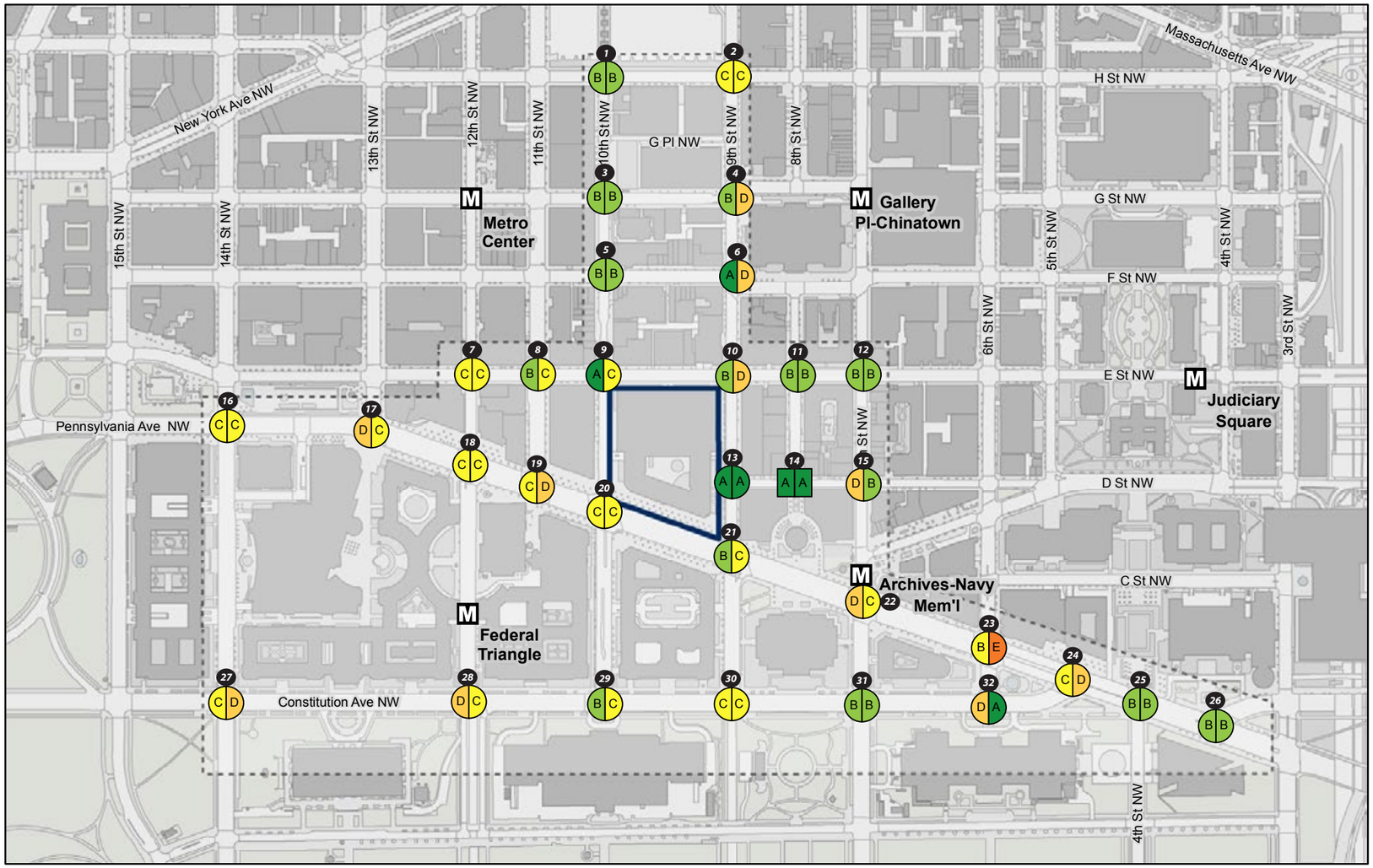


Figure 4-40: RFDS 2 Intersection LOS for AM and PM Peak Hours



RFDS 2 Operations Analysis

Based on the Synchro™ signalized intersection analysis, the majority of the study intersections would operate at acceptable conditions during the AM and PM peak hours in 2025. However, as in the No-action Alternative, the intersection of 6th Street NW and Pennsylvania Avenue NW would operate at LOS E during the PM peak hour. This is the only intersection within the study area that would operate under unacceptable conditions during a peak hour period in 2025. None of the study area intersections would operate at LOS F during a peak hour. A total of 14 signalized intersections would experience an unacceptable conditions for one or more turning movements. Compared to the No-action Alternative, RFDS 2 would have no change in the number of intersections failing during both the AM and PM peak hours. The JEH TIA (Appendix B) contains a more detailed traffic operations analysis for RFDS 2.

There would also be indirect, short-term, adverse impacts to traffic during construction. Temporary delays to local traffic from construction truck traffic and the possible need to stage construction equipment or materials in the roadway would occur at certain times of the day. There would also be impacts as a result of the demolition of the existing JEH building requiring dump trucks to haul the debris away on a continual basis until the parcel is clear of existing building materials

The overall intersection LOS grades under RFDS 2 are shown in figure 4-40 for the AM and PM peak hours. Table 4-72 shows the results of the LOS capacity analysis and the intersection projected delay under the RFDS 2 during the AM and PM peak hours.

RFDS 2 Queuing Analysis

Based on the Synchro™ and SimTraffic™ analysis, 29 signalized intersections would experience queuing lengths that would exceed the available storage capacity. The remaining intersections in the study area would provide sufficient storage for the anticipated demand. Compared to the No-action Alternative, RFDS 2 would have failing queues for two less intersections during the AM peak hour and two less intersections during the PM peak hour. The JEH TIA (Appendix B) contains a more detailed traffic queuing analysis for RFDS 2.

Summary of Traffic Analysis: RFDS 2

Under RFDS 2, there would be indirect, long-term, adverse impacts to traffic. The AM peak hour would experience isolated added delays at three intersections (7th and D Streets NW, 7th Street and Pennsylvania Avenue NW, and 12th Street and Constitution Avenue NW). During the PM peak hour, two intersections would have added delays (7th Street and Pennsylvania Avenue NW and 10th Street and Pennsylvania Avenue NW).

There would also be indirect, short-term, adverse impacts to traffic during construction. Temporary delays to local traffic from construction truck traffic and the possible need to stage construction equipment or materials in the roadway would occur at certain times of the day. There would also be impacts as a result of the demolition of the existing JEH building requiring dump trucks to haul the debris away on a continual basis until the parcel is clear of existing building materials.

TRANSPORTATION EVALUATION SUMMARY AND CONCLUSIONS

A total of 959 AM peak hour and 964 PM peak hour person trips under RDFS 1 and 876 AM peak hour and 1,777 PM peak hour person trips under RFDS 2 are projected to be added to all modes of transportation. Total Metrorail transit trips results in 525 AM peak hour and 537 PM peak hour trips under RFDS 1 and 308 AM peak hour and 694 PM peak hour trips under RFDS 2. Total vehicle trips results in 241 AM peak hour and 239 PM peak hour trips under RFDS 1 and 150 AM peak hour and 233 PM peak hour trips under RFDS 2 are projected to be transit trips. Most retail trips occur during the PM peak hour; thereby, reflecting the large increase between AM and PM peak hour trips under RFDS 2.

The pedestrian network would remain the same as the Existing Condition and would be reconstructed following JEH parcel construction. The pedestrian network would allow for the same connections as the existing network along Pennsylvania Avenue NW, E Street NW, and 9th and 10th Streets NW. It would be assumed that all sidewalk curb ramps located adjacent to the parcel would be brought up to ADA compliance during reconstruction if required by DDOT.

The bicycle network would not be affected under either RFDS, but would continue to serve bicycle trips serving the JEH parcel. It is assumed that an equal or greater number of bicyclists would access the parcel than present based on an equal or greater number forecasted in planning documents. Bicyclists would continue to use the existing bicycle facilities that surround the JEH parcel on all sides. Access to the Capital Bikeshare network would continue to encourage the use of bicycles as a daily commute option, especially with a station located within a tenth of a mile.

After accounting for background growth and planned developments, the transit network (Metrorail and Metrobus) would not be noticeably affected under either RFDS. While the background growth along the bus and rail network would cause facilities to operate at capacity, many of these facilities would operate at capacity without either RFDS (under the No-action Alternative). These overcapacity elements include the Metrorail fare vending machines at Archives-Navy Memorial, Gallery Place-Chinatown, and Metro Center Metro Stations. It also includes Metrobus Routes 11Y, 32, 36, 80, and G8. It is assumed that WMATA would implement recommendations from bus route studies and follow their long-term plan to address growth-related capacity issues for both bus and Metrorail operations.

Parking availability would not be affected under RFDS 1. For RFDS 2, parking availability would be improved along E, 9th, and 10th Streets NW surrounding the JEH parcel because it is assumed the new occupants would not require security setbacks. This new lane space would allow DDOT to create new on-street parking spaces. In addition, under RFDS 2 a new off-street parking facility would be constructed that could be larger than the existing facility and could offer more off-street public parking than the present conditions.

Truck access from 10th Street NW would need to be maintained for RFDS 1, but the site could require additional access points from E or 9th Streets NW to allow enough access to meet the demand. RFDS 2 truck access locations would be dependent on the design and future discussions with DDOT, but there would be a need for more truck access locations than RFDS 1 given RFDS 2's mixed-use development scenario. The exchange partner would have to work with DDOT to establish the best access points to handle the projected truck delivery demands.

All intersections currently operate at an acceptable LOS under the Existing Condition. Once the background growth and planned developments are added, one intersection would degrade from a passing LOS to a failing LOS (6th Street and Pennsylvania Avenue NW) under the No-action Alternative. There were no planned roadway improvements within the JEH study area to compensate for the added vehicle trips.

The traffic operation under the RDFS 1 would result in overall LOS degradation at intersections from a passing LOS to a failing LOS at one intersection (12th Street and Independence Avenue NW) during the AM peak hour. Under both RFDS 1 and RFDS 2, four other intersections would experience a LOS degradation from a passing LOS to a failing LOS for specific movements through the intersection (left, through, or right). The DDOT traffic signal optimization initiative should sufficiently address the traffic impacts caused by either scenario.

Table 4-72: Comparison of No-action Alternative and RFDS 2 Intersection Operations for AM and PM Peak Hours

#	Intersection	No-action Alternative						RFDS 2					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check
1	10th Street NW & H Street NW (Signalized)												
		12.8	B	Pass	19.6	B	Pass	12.9	B	Pass	19.6	B	Pass
2	9th Street NW & H Street NW (Signalized)												
		20.3	C	Pass	24.7	C	Pass	20.3	C	Pass	24.6	C	Pass
3	10th Street NW & G Street NW (Signalized)												
		14.6	B	Pass	18.2	B	Pass	14.9	B	Pass	18.7	B	Pass
4	9th Street NW & G Street NW (Signalized)												
		13.0	B	Pass	45.7	D	Pass	13.0	B	Pass	45.7	D	Pass
5	10th Street NW & F Street NW (Signalized)												
		12.1	B	Pass	17.4	B	Pass	12.4	B	Pass	17.3	B	Pass
6	9th Street NW & F Street NW (Signalized)												
		9.8	A	Pass	41.5	D	Pass	9.8	A	Pass	42.0	D	Pass
7	12th Street NW & E Street NW (Signalized)												
		21.8	C	Pass	26.3	C	Pass	21.9	C	Pass	27.2	C	Pass
8	11th Street NW & E Street NW (Signalized)												
		14.7	B	Pass	26.4	C	Pass	14.9	B	Pass	27.1	C	Pass
9	10th Street NW & E Street NW (Signalized)												
		8.8	A	Pass	24.8	C	Pass	9.1	A	Pass	24.4	C	Pass
10	9th Street NW & E Street NW (Signalized)												
		13.0	B	Pass	46.2	D	Pass	13.4	B	Pass	46.0	D	Pass
11	8th Street NW & E Street NW (Signalized)												
		13.7	B	Pass	13.5	B	Pass	13.6	B	Pass	13.9	B	Pass
12	7th Street NW & E Street NW (Signalized)												
		19.4	B	Pass	18.7	B	Pass	19.4	B	Pass	18.9	B	Pass
13	9th Street NW & D Street NW (Signalized)												
		7.7	A	Pass	8.1	A	Pass	7.7	A	Pass	8.2	A	Pass
14	8th Street NW & D Street NW (AWSC)												
		8.2	A	Pass	8.4	A	Pass	8.2	A	Pass	8.4	A	Pass
15	7th Street NW & D Street NW (Signalized)												
		38.7	D	Pass	18.2	B	Pass	45.9	D	Pass	19.9	B	Pass
16	14th Street NW & Pennsylvania Avenue NW (Signalized)												
		27.3	C	Pass	21.3	C	Pass	27.3	C	Pass	21.2	C	Pass
17	13th Street NW & Pennsylvania Avenue NW (Signalized)												
		35.4	D	Pass	25.2	C	Pass	35.3	D	Pass	25.8	C	Pass

Table 4-72: Comparison of No-action Alternative and RFDS 2 Intersection Operations for AM and PM Peak Hours (continued)

#	Intersection	No-action Alternative						RFDS 2					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check
18	12th Street NW & Pennsylvania Avenue NW (Signalized)												
		32.9	C	Pass	20.1	C	Pass	34.4	C	Pass	20.0	C	Pass
19	11th Street NW/Hotel Entrance & Pennsylvania Avenue NW (Signalized)												
		32.8	C	Pass	48.1	D	Pass	34.1	C	Pass	49.8	D	Pass
20	10th Street NW & Pennsylvania Avenue NW (Signalized)												
		19.2	B	Pass	16.1	B	Pass	20.1	C	Pass	23.0	C	Pass
21	9th Street NW & Pennsylvania Avenue NW (Signalized)												
		12.5	B	Pass	26.8	C	Pass	12.3	B	Pass	26.6	C	Pass
22	7th Street NW & Pennsylvania Avenue NW (Signalized)												
		41.8	D	Pass	25.2	C	Pass	46.4	D	Pass	33.1	C	Pass
23	6th Street NW & Pennsylvania Avenue NW (Signalized)												
		16.9	B	Pass	57.4	E	Fail	16.9	B	Pass	57.4	E	Fail
24	Constitution (WB) Avenue NW & Pennsylvania Avenue NW (Signalized)												
		20.2	C	Pass	36.8	D	Pass	20.3	C	Pass	36.9	D	Pass
25	4th Street NW & Pennsylvania Avenue NW (Signalized)												
		10.6	B	Pass	14.2	B	Pass	10.8	B	Pass	14.2	B	Pass
26	Constitution (EB) Avenue NW & Pennsylvania Avenue NW (Signalized)												
		18.6	B	Pass	18.5	B	Pass	18.7	B	Pass	18.6	B	Pass
27	14th Street NW & Constitution Avenue NW (Signalized)												
		24.4	C	Pass	54.5	D	Pass	24.5	C	Pass	54.4	D	Pass
28	12th Street NW & Constitution Avenue NW (Signalized)												
		53.7	D	Pass	31.7	C	Pass	54.0	D	Pass	34.3	C	Pass
29	10th Street NW & Constitution Avenue NW (Signalized)												
		14.8	B	Pass	24.7	C	Pass	14.9	B	Pass	24.5	C	Pass
30	9th Street NW & Constitution Avenue NW (Signalized)												
		27.3	C	Pass	32.8	C	Pass	27.4	C	Pass	32.7	C	Pass
31	7th Street NW & Constitution Avenue NW (Signalized)												
		17.1	B	Pass	19.1	B	Pass	17.1	B	Pass	19.1	B	Pass
32	6th Street NW & Constitution Avenue NW (Signalized)												
		42.6	D	Pass	6.1	A	Pass	42.6	D	Pass	6.1	A	Pass

Notes:

AWSC = All-Way STOP-Controlled unsignalized intersection

EB = Eastbound, WB = Westbound

LOS = Level of Service

Delay is Measured in Seconds Per Vehicle.

Red cells denote intersections operating at unacceptable conditions.

JEH GLOBAL GREENHOUSE GASES ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No new measurable impacts to GHG emissions.

RFDS 1: Insufficient information to asses impacts.

RFDS 2: Insufficient information to asses impacts.

Table 4-73: Existing/No-action JEH Building Emissions (Fiscal Year 2013)

Source	Annual Consumption	Annual Metric Tons CO_2e Emissions
Fuel Oil No. 2 backup generators	3,357 gallons	34.4
Purchased electricity	60,623,236 kwh	26,195.5
Purchased steam	61,333 thousand pounds	5,624.0
Building-related Total		31,853.9

Table 4-74: JEH No-action Alternative Employee Commute Vehicle Miles Traveled and Greenhouse Gas Emissions (2025)

	JEH No-action	Off-site No-action
Annual VMT (250 days)	8,584,133	31,476,680
No Action Total VMT		**40,060,813**
No Action Total CO_2e- Metric Tons		**10,191.2**

4.2.10 Greenhouse Gas Emissions and Air Quality

This section provides a summary of the analysis results for air quality and GHG emissions. Additional technical supporting data and tables for this section are provided in Appendix F.

GREENHOUSE GAS EMISSIONS AND AIR QUALITY ASSESSMENT OF SIGNIFICANCE

Impacts to air quality and GHG emissions would not result in significant impacts, as defined in section 3.11.3.

4.2.10.1 Global Climate Change and Greenhouse Gases

No-action Alternative

Stationary and Building Related Sources

Under the No-action Alternative, there would be no new measurable impacts to stationary source GHG emissions, as the current emissions would be expected to continue. Emission information for the existing JEH building was obtained from FBI's fiscal year 2013 GHG inventory, summarized in table 4-73. Approximately 82 percent of the building-related emissions are from purchased electricity.

Mobile Sources

Under the No-action Alternative, there would be no new measurable impacts to mobile source GHG emissions, as the current emissions would be expected to continue. Table 4-74 summarizes the vehicle miles traveled (VMT) and CO_2e estimate for the No-action Alternative, accounting for employee commutes to the JEH building and employee commutes to current off-site locations. Total commute-related CO_2e emissions would be approximately 10,191 metric tons per year based on the assumptions detailed in section 3.11.2.4.

RFDS 1

Given the uncertainties with regards to GHG emissions from both mobile and stationary sources, there is insufficient data to assess the level of impact to GHG emissions as described below.

Stationary and Building Related Sources

Under RFDS 1, JEH would no longer be allowed to use GSA's Central Heating Plant for building heating and cooling needs. As a result, new on-site heating and cooling equipment could be needed. This equipment would likely be powered by natural gas (for heating/hot water) and electricity (for cooling). Electricity and natural gas consumption could increase, but there could be a comparable decrease in energy use and emissions at GSA's Central Heating Plant due to reduced demand for steam and chilled water. Building-related emissions could be reduced if energy efficiency related rehabilitation measures are implemented.

Mobile Sources

Mobile source GHG emissions could be higher than the 2,183 metric tons CO_2e per year estimated for the No-action Alternative at JEH, based on the net increase in trip generation for the new office use compared to the existing FBI use as discussed in section 4.2.9.

RFDS 2

Given the uncertainties with regards to GHG emissions from both mobile and stationary sources, there is insufficient data to assess the level of impact to GHG emissions as described below.

Stationary and Building Related Sources

Greenhouse gas emissions for RFDS 2 would be different from the existing JEH building in a number of ways, including changes based on the type of land use (residential and commercial versus office); change in the size of the building; and changes in building methods and energy efficiency. It is likely that the new construction would be substantially more efficient.

Mobile Sources

Mobile source GHG emissions could be higher than the 2,183 metric tons CO_2e per year estimated for the No-action Alternative at JEH, based on the net increase in trip generation for the new office use compared to the existing FBI use as discussed in section 4.2.9.

Given the uncertainties with regards to GHG emissions from both mobile and stationary sources, there is insufficient data to assess the level of impact to GHG emissions.

4.2.10.2 Air Quality

No-action Alternative

Under the No-action Alternative, there would be no measurable impacts relative to existing conditions. On-site stationary source emissions from the JEH parcel would be limited to diesel backup power generation, as discussed in section 4.1.10. Criteria pollutant emissions from backup generator use were estimated as shown table 4-75 based on 2013 backup generator fuel consumption data. The annual generator emissions are well below the General Conformity de minimis thresholds.

Mobile source emissions would continue similar to Existing Condition for employee commutes and deliveries. The traffic analysis results show that all intersections affected by the JEH No-action Alternative operate at LOS D or better in the AM peak hour. In the PM peak hour, all intersections would operate at LOS D or better with the exception of Intersection #23, 6th Street and Pennsylvania Avenue. This intersection was analyzed with FHWA's CO categorical hot-spot finding screening tool and the results showed there would be no exceedance of the NAAQS for CO. Although the angle of this intersection is not perpendicular (which was assumed in the categorical finding modeling and required for formal transportation conformity purposes[3]), this factor is outweighed by the fact that the PM peak hour approach volumes are 846 or less (compared to a maximum of 2,640 for each intersection approach in the modeling for the categorical finding). No construction emissions would occur under the No-action Alternative. Therefore, under the No-action Alternative, there would be no new impacts to air quality and CO would continue to not exceed hot spot and NAAQS thresholds.

RFDS 1

As discussed in section 4.2.10.1, the JEH building would no longer be allowed to use the GSA Central Steam Plant for heating and cooling under RFDS 1. This could increase on-site emissions of criteria pollutant such as NO_x from natural gas boilers that would be required to provide heat/hot water in the absence of steam. As a result, indirect, long-term, adverse impacts from stationary sources could occur in the vicinity of the JEH building, while off-site emissions from the Central Steam Plant could decrease. It is assumed that major adverse impacts in the form of off-site localized exceedances of the NAAQS from stationary sources could be avoided through the appropriate design of the new boiler system and associated exhaust stack(s).

In terms of mobile sources, all intersections affected by RFDS 1 would operate at LOS D or better in the AM peak hour, with the exception of Intersection #28, 12th Street and Constitution Avenue, which would operate at LOS E. In the PM peak hour, one intersection would operate at LOS E: Intersection #23, 6th Street and Pennsylvania Avenue. Because Intersection #28 has substantially higher total approach volumes in the AM peak hour (4,525 sum of all four approaches) than Intersection #23 in the PM peak hour (1,692), Intersection #28 was selected as the worst case location for consideration and screening. Intersection #28 includes one non-typical feature: the 12th Street northbound approach is emerging from a tunnel to at-grade. The grade of this approach is approximately 4 percent, which exceeds the 2 percent maximum grade that was assumed in the modeling for the FHWA CO categorical finding, as a steeper grade can result in higher emissions as engines work harder to move vehicles up hill. However, the northbound approach volumes (2,047) are below the maximum allowable and the background concentrations are substantially below the maximum allowable.[4] Therefore, despite the grade of the northbound approach, it can be concluded that an exceedance of the NAAQS for CO would not occur at Intersection #28. Overall mobile source impacts would be long-term and adverse.

Construction emissions would occur as a result of rehabilitation activities, but these emissions would be expected to be no measurable because the renovations would only occur to the interior of the building.

RFDS 2

As discussed in section 4.2.10.1, the RFDS 2 buildings would no longer be allowed to use the GSA Central Steam Plant for heating and cooling. This could increase on-site emissions of criteria pollutant such as NO_x from natural gas boilers that would be required to provide heat/hot water in the absence of steam. Off-site emissions from the Central Steam Plant could decrease. It is assumed that off-site localized air quality impacts from stationary sources could be avoided through the appropriate design of the new boiler system and associated exhaust stack(s). RFDS 2 development may include diesel-powered backup generators, also similar to the existing JEH building.

In the AM peak hour, all intersections affected by RFDS 2 would operate at LOS D or better. In the PM peak hour, Intersection #23, 6th Street and Pennsylvania Avenue, would operate at LOS E. This intersection was considered previously in the screening for the No-action Alternative. The maximum volume for one approach would be 910, well below the volume assumed in the FHWA CO categorical finding. Therefore, no exceedance of the NAAQS for CO would be anticipated, resulting in no new impacts to air quality.

Annual construction emissions would likely be below the General Conformity de minimis thresholds (although the quantity of emissions would depend on the construction schedule, which is not known).

Under RFDS 2, there would be indirect, long-term, adverse impacts to air quality from mobile source emissions. Indirect, short-term, adverse impacts would occur during the reconstruction period from construction activities including fugitive dust. There is insufficient data to assess the level of impact to climate change and GHG emissions from stationary sources, however it is assumed that off-site localized air quality impacts from stationary sources could be avoided through the appropriate design of the new boiler system and associated exhaust stack(s).

JEH AIR QUALITY ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: Indirect, short- and long-term, adverse impacts

RFDS 2: Indirect, short- and long-term, adverse impacts

Table 4-75: JEH No-action Backup Generator Criteria Pollutant Emissions

Pollutant	Annual Emmisions (Tons)
CO	0.201960
NO_x	0.74379
PM	0.0231
SO_2	0.0003

[3] Transportation conformity does not apply to this alternative. The use of the categorical finding is for NEPA purposes.

[4] The maximum allowable 1-hour background concentration under the categorical finding is 29.5 parts per million (ppm). The actual 1-hour background concentration (at 2055 L ST. N.W., AQS Site ID: 11-001-0023) in 2014 was 2.1 ppm. The maximum allowable 8-hour background concentration is 5.1 ppm, the actual background concentration in 2014 was 1.6 ppm.

JEH NOISE ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: Indirect, short- and long-term, adverse impacts.

4.2.11 Noise

NOISE ASSESSMENT OF SIGNIFICANCE

Impacts to noise would not result in significant impacts, as defined in section 3.11.3.

4.2.11.1 No-action Alternative

Under the No-action Alternative, there would be no measurable impacts to noise. The FBI HQ would remain at the JEH building, and there would be no change to the existing noise conditions.

4.2.11.2 RFDS 1

Under RFDS 1, there would be no measurable impacts to noise. Although there would be some temporary impacts to noise relating to the interior renovation, these impacts would not be readily noticeable outside of the parcel. There could be indirect, long-term, adverse impacts to noise as a result of the increased traffic levels during peak periods, as described in section 4.2.9.2.

4.2.11.3 RFDS 2

Under RFDS 2, the demolition of the JEH building and construction associated with redevelopment of the parcel would result in short-term noise impacts. Noise from construction equipment would vary based on the equipment being used at any given time. All construction activities would need to be permitted by the District and therefore would be required to adhere to noise control regulations, including the District of Columbia Noise Control Act of 1977 and the DC Noise Ordinance. Compliance with these regulations would reduce the impact of construction activity noise on the overall soundscape in the vicinity of the parcel. Given these assumptions, there would be indirect, short-term, adverse impacts associated with the construction activities required to redevelop the parcel.

Long-term, adverse noise impacts would occur from the introduction of residential and commercial uses that do not currently exist on the parcel. However, the increased noise generated by these uses would be minor and consistent with other noise generation levels near the parcel, and would not change the overall ambient noise levels. Similarly, the increased intensity of use could introduce additional vehicular traffic to the area; however, the additional traffic noise would be consistent with the existing urban setting of the parcel and its vicinity and therefore there would be no noticeable increase in noise levels above ambient conditions.

Therefore, under RFDS 2, there would be indirect, long-term, adverse impacts to noise associated with increased noise generation from the redeveloped parcel, as well as indirect, short-term, adverse impacts associated with the construction activities required to redevelop the parcel. There could be indirect, long-term, adverse impacts to noise as a result of the increased traffic levels during peak periods, as described in section 4.2.9.2.

4.2.12 Infrastructure and Utilities

The following sections describe the environmental consequences for infrastructure and utilities under both the No-action Alternative at the JEH parcel and the two RFDSs.

INFRASTRUCTURE AND UTILITIES ASSESSMENT OF SIGNIFICANCE

Impacts to infrastructure and utilities would not result in significant impacts, as defined in section 3.11.3.

4.2.12.1 Water Supply

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to the water supply because the demand for water at JEH would continue at or near current levels, which is within the existing capacity.

RFDS 1

Under RFDS 1, there would be measurable impacts to the water supply, as the demand of the renovated building would be comparable to existing conditions.

RFDS 2

Under RFDS 2, there would be no measurable impacts to the water supply. The site lies within a highly developed urban environment with water mains adjacent on all sides, therefore, no off-site improvements would be anticipated associated with redevelopment. However, final determination of potential off-site improvements on the existing water distribution system would require coordination with DC Water during the design phase, and DC Water would be required to approve all connections to its utilities. The water demand associated with the proposed mixed-use redevelopment of the parcel would likely increase from the existing demand; however, it is not anticipated that this demand would exceed the existing system capacity.

4.2.12.2 Wastewater Collection and Treatment

No-action Alternative

Under the No-action Alternative, there would be no measurable impacts to wastewater collection and treatment because the JEH building would continue to produce the same amount of wastewater, which is within the existing capacity of nearby treatment facilities.

RFDS 1

Under RFDS 1, there would be no measurable impact to wastewater collection and treatment because the demand of the renovated building would be similar to the No-action Alternative.

RFDS 2

Under RFDS 2, there would be no measurable impacts to wastewater collection and treatment. The parcel lies within a highly developed urban environment and no off-site wastewater improvements would be anticipated as a result of redevelopment of the parcel. The sanitary sewer from the parcel would likely connect to the Low Area Trunk Sewer along Pennsylvania Avenue which is currently scheduled for upgrades at various locations. However, final determination of potential off-site improvements on the existing wastewater collection and conveyance systems would require coordination with DC Water during the design phase. It is anticipated that the inclusion of residential development on the parcel would increase the amount of wastewater produced; however, the Blue Plains AWTP has adequate excess capacity to accommodate the potential increase.

4.2.12.3 Electric Power

No-action Alternative

Under the No-action Alternative, there would be no measurable impacts to electric power because the JEH building would continue to use the same amount of electricity, which is within the existing capacity.

RFDS 1

Under RFDS 1, there would be measurable impacts to electric power because the demand of the renovated building would be similar to the No-action Alternative. There could be long-term, beneficial impacts as a result of decreased demand for electricity within this parcel due to the removal of high-energy intensity information technology equipment associated with FBI HQ operations.

RFDS 2

With the addition of residential and retail uses, the electrical demand of the parcel may increase under RFDS 2. This increase in demand may be offset by the removal of high energy intensity information technology equipment associated with current FBI HQ operations. The parcel is located within a spot network with multiple feeders for redundancy and reliability of service. There are currently four high voltage feeders entering the property. Additionally, there are several substations within proximity to the parcel capable of delivering upgraded capacity if required (Smolka 2015).

Assessment of Significance

Under RFDS 2, there could be indirect, long-term, adverse impacts to electric power, if the demand of the redeveloped parcel from future residences, offices, and retail establishments increases beyond the existing energy requirements of FBI HQ operations.

4.2.12.4 Natural Gas

No-action Alternative

Under the No-action Alternative, there would be no measurable impacts because the JEH building would continue not to use natural gas.

RFDS 1

Under RFDS 1 there would be no measurable impacts to natural gas, because, while there may be new demand at the parcel, it is expected to be well within the existing capacity, and the infrastructure to supply the parcel currently exists.

JEH WATER SUPPLY ENVIRONMENTAL CONSEQUENCES SUMMARY

- **No-action Alternative:** No measurable impacts.
- **RFDS 1:** No measurable impacts.
- **RFDS 2:** No measurable impacts.

JEH WASTEWATER COLLECTION & TREATMENT ENVIRONMENTAL CONSEQUENCES SUMMARY

- **No-action Alternative:** No measurable impacts.
- **RFDS 1:** No measurable impacts.
- **RFDS 2:** No measurable impacts.

JEH ELECTRIC POWER ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH NATURAL GAS ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH TELECOMMUNICATIONS ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH STORMWATER MANAGEMENT ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: Indirect, long-term, beneficial impacts.

RFDS 2

With the addition of residential and retail uses, the natural gas demand of the parcel could potentially increase under RFDS 2. However, the JEH parcel lies within a highly developed urban environment with a number of natural gas mains adjacent to the parcel. Should it be determined that the capacity of the existing 2-inch gas main entering the parcel is not sufficient to support the demands associated with the redevelopment or if multiple service connections are required, indirect, short-term, adverse impacts could occur due to potential deficiencies in service, and disruptions to service while improvements are being performed (Washington Gas 2015b). Over the long-term, there would be no measurable impacts to natural gas service, as any deficiencies would likely be addressed during the planning and construction phase.

Under RFDS 2, there could be indirect, short-term, adverse impacts associated with disruptions in service while any necessary upgrades are performed. Over the long-term, there would be no measurable impacts.

4.2.12.5 Telecommunications

No-action Alternative

Under the No-action Alternative, no measurable impacts to telecommunications are expected because existing telecommunication requirements would remain the same.

RFDS 1

The impacts under RFDS 1 would be similar to the impacts under the No-action Alternative because the demand of the renovated building would be comparable to existing conditions, and the parcel has telecommunications infrastructure in place.

RFDS 2

Under RFDS 2, there would be no measurable impacts to telecommunications service. Providing telecommunications service to the redeveloped parcel would not adversely impact current or future customers of the region. While the redevelopment would require coordinating the telecommunications needs of the proposed development with the appropriate providers, it would not be expected to impact the availability or quality of telecommunication services to existing customers., and since the parcel has telecommunications infrastructure already in place, there would not be construction that would disrupt surrounding uses.

4.2.12.6 Stormwater Management

No-action Alternative

Under the No-action Alternative, there would be no measurable impacts to stormwater. With the exception of a few tree planters, the parcel is entirely impervious surface and the existing stormwater management controls would continue.

RFDS 1

Under RFDS 1, there would be no measurable impacts to stormwater management because the exterior conditions of the building would remain consistent with the conditions under the No-action Alternative.

RFDS 2

Under RFDS 2, there would be indirect, long-term, beneficial impacts to stormwater because of an anticipated decrease in stormwater at the parcel. Re-connecting to the Pennsylvania Avenue storm sewer under RFDS 2 would require upgrades that could potentially be disruptive and costly. While a stormwater connection would ideally be to 10th Street, DC Water has noted that the 10th Street storm sewer is at full capacity during a 15-year storm event. Therefore, in collaboration with the exchange partner, DC Water would likely require that on-site stormwater BMPs be incorporated into the design to reduce stormwater runoff from the parcel (Bilvardi 2015). It is anticipated that low-impact development measures and on-site stormwater management to curtail associated stormwater runoff would be incorporated into the site plan so as to not adversely affect downstream properties or facilities and remain within the existing capacity of the existing infrastructure.

4.2.13 Summary of Impacts

The exchange of the JEH parcel and the indirect impacts resulting from future redevelopment of the parcel, as analyzed via two RFDSs, is common to all action alternatives. Table 4-76 presents a summary of the impacts associated with each RFDS to the resource topics analyzed in this EIS, including the No-action Alternative at JEH.

Table 4-76: JEH Parcel Summary of Impacts

Resource Area	Impact Description	
Earth Resources		
Geology and Topography	N	Under the No-action Alternative, there would be no measurable impacts to geology or topography.
	N	Under RFDS 1, there would be no measurable impacts to geology or topography.
	N	Under RFDS 2, there would be no measurable impacts to geology or topography.
Soils	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Water Resources		
Surface Water	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Hydrology	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
Groundwater	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Wetlands and Floodplains	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.

N	No Measurable Impact or Insufficient Information	ADV	Adverse Impact	ADV	Major Adverse (Significant) Impact	BEN	Beneficial Impact

Table 4-76 JEH Parcel Summary of Impacts (continued)

Resource Area	Impact Description	
Biological Resources		
Vegetation	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Aquatic Species	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Terrestrial Species	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would indirect, short-term, adverse impacts.
Special Status Species	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Land Use		
Regional Land Use, Planning Studies, and Zoning.	N	Under the No-action Alternative, there would be no measurable impacts.
	ADV	Under RFDS 1, there would be indirect, long-term, adverse impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
Visual Resources		
Visual Resources	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
Cultural Resources		
Archaeological	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Historic Resources	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.

Resource Area	Impact Description	
Socioeconomics		
Population and Housing	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be indirect and long-term impacts to population; there is insufficient information to determine impacts to housing.
Employment and Income	N	Under the No-action Alternative, there would be no measurable impacts.
	BEN	Under RFDS 1, there would be indirect, short-term, beneficial impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Taxes	N	Under the No-action Alternative, there would be no measurable impacts.
	BEN	Under RFDS 1, there would be indirect, short- and long-term, beneficial impacts.
	BEN	Under RFDS 2, there would be indirect, short- and long-term, beneficial impacts
Schools and Community Services	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there is insufficient information available to determine impacts to community services. No measurable impacts to schools.
	N	Under RFDS 2, there is insufficient information available to determine impacts to community services and no measurable impacts to schools in the short-term. Temporary impacts to community services in the long-term while these services adjust to a change in serviced population. Insufficient information available to determine long-term impacts to schools.
Recreation and Other Community Facilities	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there is insufficient information available to determine impacts to recreation and other community facilities
	N	Under RFDS 2, there is insufficient information available to determine impacts to recreation and other community facilities

N	No Measurable Impact or Insufficient Information	ADV	Adverse Impact	ADV	Major Adverse (Significant) Impact	BEN	Beneficial Impact

Table 4-76 JEH Parcel Summary of Impacts (continued)

Resource Area	Impact Description	
Environmental Justice	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no long-term adverse impacts to minority or low-income communities.
	N	Under RFDS 2, there would be no long-term adverse impacts to minority or low-income communities.
Protection of Children	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, no mitigation of disproportionate and adverse impacts to children is required under EO 13045
	N	Under RFDS 2, no mitigation of disproportionate and adverse impacts to children is required under EO 13045
Public Health and Safety/Hazardous Materials		
Public Health and Safety/ Hazardous Materials	ADV	Under the No-action Alternative, there would be indirect, long-term, adverse impacts.
	BEN	Under RFDS 1, there would be indirect, long-term, beneficial impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Hazardous Materials	N	Under the No-action Alternative, there would be no measurable impacts.
	ADV	Under RFDS 1, there would be indirect, short-term, adverse impacts.
	BEN	Under RFDS 1, there would be indirect, long-term, beneficial impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
Transportation		
Pedestrian Network	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
Bicycle Network	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Public Transit	MAJ ADV	Under the No-action Alternative, there would be indirect, long-term, major adverse impacts.
	N	Under RFDS 1, there would be no measurable impacts; the long-term major adverse impacts under the No-action would continue.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts; the long-term major adverse impacts under the No-action would continue.
Parking	BEN	Under the No-action Alternative, there would be indirect, long-term, beneficial impacts.
	ADV	Under RFDS 1, there would be Indirect, short-term, adverse impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Truck Access	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
	N	Under RFDS 2, there is insufficient information to evaluate long-term impacts.
Traffic Analysis	ADV	Under the No-action Alternative, there would be indirect, long-term, adverse impacts.
	ADV	Under RFDS 1, there would be indirect, short- and long-term, adverse impacts.
	ADV	Under RFDS 2, there would be indirect, short- and long-term, adverse impacts.
Greenhouse Gas Emissions and Air Quality		
Global Climate Change/ Greenhouse Gases	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there is insufficient information.
	N	Under RFDS 2, there is insufficient information.

N	No Measurable Impact or Insufficient Information	ADV	Adverse Impact	ADV	Major Adverse (Significant) Impact	BEN	Beneficial Impact

Table 4-76 JEH Parcel Summary of Impacts (continued)

Resource Area	Impact Description	
Air Quality	N	Under the No-action Alternative, there would be no measurable impacts.
	ADV	Under RFDS 1, there would be indirect, short- and long-term adverse impacts.
	ADV	Under RFDS 2, there would be indirect, short- and long-term adverse impacts.
Noise		
Noise	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under the RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Infrastructure and Utilities		
Water Supply	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Wastewater Collection and Treatment	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Electric Power	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Natural Gas	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Telecommunications	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Stormwater Management	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.

N	No Measurable Impact or Insufficient Information	ADV	Adverse Impact	ADV	Major Adverse (Significant) Impact	BEN	Beneficial Impact