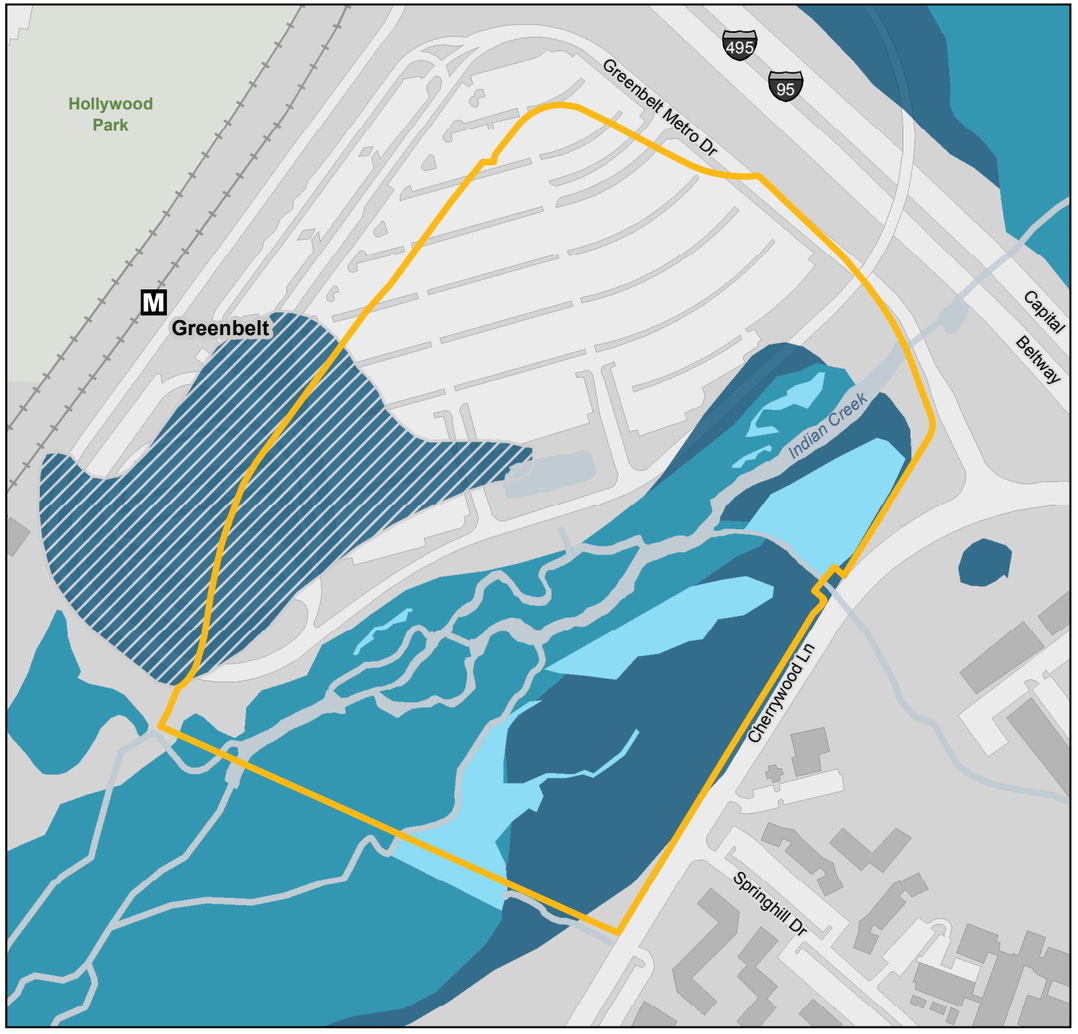
Figure 5-6: Greenbelt Surface Water and Wetland Resources



5.1.2 Water Resources

The following sections describe the affected environment for the water resources at the Greenbelt site. Water resources encompass surface water, groundwater, hydrology, wetlands, and floodplains.

5.1.2.1 Surface Water

The Greenbelt site is located within the Upper Anacostia River watershed and the larger Chesapeake Bay watershed. Indian Creek, a perennial freshwater stream and tributary to the Anacostia River, flows from northeast to southwest through the lower half of the site, as shown in figure 5-6. Indian Creek and its channels and wetlands are all classified as waters of the United States (U.S.) and are therefore under the protection of the 1972 Clean Water Act (CWA) (33 U.S.C. §1251 et seq.) In addition, Indian Creek is under the jurisdiction of the U.S. Capper-Cramton Act. The Capper-Cramton Act, which was enacted by the 71st Congress on May 29, 1930, provides authority to Maryland-National Capital Park and Planning Commission (M-NCPPC) and National Capital Planning Commission (NCPC) over the development within the park and playground system of the National Capital Region (NCR), including natural areas along the major tributaries of the Potomac and Anacostia Rivers. The land along Indian Creek is subject to the Act (46 Stat. 482), which specifies that "the development and administration [of lands acquired with funding under the Act] shall be under the M-NCPPC and in accordance with plans approved by the National Capital Planning Commission." Therefore, if this site were selected for consolidation of the FBI HQ, NCPC would have approval authority (and environmental review responsibility under the National Environmental Policy Act [NEPA]) for the development plan's compliance with the park's General Development Plan, and advisory authority for the project's compliance with the Comprehensive Plan of the National Capital: Federal Elements. Additional review authority would be granted to M-NCPPC, which has administrative jurisdiction over parklands in Montgomery and Prince George's Counties.

The streambed elevation of Indian Creek drops approximately 2 feet per 1,000 feet in longitudinal profile over the length of the site (FEMA 2013a). North of the site, several tributaries join Indian Creek, including Beaverdam Creek. Paint Branch, Narragansett Run and several unnamed tributaries flow into Indian Creek south of the site. Indian Creek has a braided stream channel within the site; the stream becomes channelized after it crosses Greenbelt Road approximately 4,000 feet south of the site. Indian Creek meets Paint Branch near the College Park Airport, approximately 2 miles south of the site, and becomes the Northeast Branch Anacostia River. The Northeast Branch eventually meets the mainstem Anacostia River, a tributary to the Potomac River, which flows into the Chesapeake Bay. There are numerous small perennial ponds located in the vicinity of the site, including one stormwater management pond located near the center of the site within the footprint of the existing parking lot, and another located adjacent to the southwestern site boundary. The largest water body near the site is Greenbelt Lake located less than a mile to the east. A perennial stream flows from this lake and joins Indian Creek within the site boundary.

Under the Code of Maryland Regulations, Indian Creek and its perennial stream tributaries are Use Class I. The designated uses for Use Class I are growth and propagation of fish and other aquatic life and wildlife, water contact sports, leisure activities involving direct contact with surface water, fishing, agricultural water supply, and industrial water supply. The Potomac and Anacostia Rivers, into which Indian Creek flows, are assigned Use Class II. In addition to the uses assigned to Use Class I, the designated uses for Use Class II include uses related to shellfish harvesting and habitat for estuarine and marine aquatic species.

According to Maryland's Draft 2014 Integrated Report of Surface Water Quality, Indian Creek is not impaired for water quality; however, the downstream Anacostia and Potomac Rivers are impaired and do not attain designated uses (MDE 2014). Channelization and the lack of riparian buffers are listed as major stressors to watershed health throughout the tidal freshwater portion of the Anacostia River basin. Additionally, fish caught in the Anacostia River have been found to have heptachlor epoxide levels above human health standards and chlorides and sulfates are impacting the health of the watershed as a result of the historic uses of the tidal portion of the Anacostia. The tidal and nontidal portions of the Anacostia River and the upper tidal Potomac River were listed as impaired for polychlorinated biphenyls (PCBs); however, a joint Total Maximum Daily Load (TMDL) with Maryland, Virginia, and the District of Columbia for PCBs was approved in 2008. Various designated uses of the tidal and nontidal portions of the Anacostia River are not attained and impaired due to nutrients, sediment, debris/trash, and pathogens. TMDLs have been approved for these pollutants. The upper tidal freshwater portion of the Potomac River into which the Anacostia flows does not attain fish and shellfish uses due to nutrients. The Chesapeake Bay TMDL, approved in 2012, addresses nutrients and other pollutants.

5.1.2.2 Hydrology

The hydrology of the Greenbelt site is composed of both stormwater and natural surface waters. Substantial clearing and alteration of the natural stream course south of the Greenbelt site has occurred in conjunction with the South Core portion of Greenbelt Station.

Stormwater runoff from the impervious surfaces associated with the existing Greenbelt Metro Station parking lot is conveyed to two stormwater management ponds and to Indian Creek. One stormwater management pond is located in the center of the site. A second, larger stormwater management pond is located outside of and adjacent to the southwestern corner of the site. Currently, stormwater from the impervious surfaces is directed to these detention ponds as well as through two culverts that outlet directly to Indian Creek. One is an approximately 115 foot culvert that outlets directly from the site to Indian Creek and the second is an approximately 45 foot box culvert located approximately 150 feet to the east of the site. The pervious surfaces within the riparian forest in the east and southeastern portions of the site allow stormwater infiltration.

5.1.2.3 Groundwater

Groundwater in the region of the site is contained generally within semi-consolidated sand or gravel aquifers of the North Atlantic Coastal Plain aquifer system (USGS 2003). Aquifers in Prince George's County include Aquia, Magothy, Patapsco, and Patuxent aquifers and the surficial aquifer (Richardson 1976; MGS 2014). Under natural conditions, shallow groundwater flow would be expected to move towards Indian Creek; however, groundwater flow direction may vary based on pumping, dewatering, underground utilities, and seasonal fluctuation. Based on the elevation of the site compared with that of Indian Creek, groundwater is anticipated to be encountered at less than 1 foot below ground surface in and around Indian Creek and at approximately 10 feet below ground surface in the developed western half of the site (GSA 2014b). A groundwater monitoring well located approximately 2 miles to the northwest within the local Patuxent Formation aquifer recorded water levels of 17.26 to 26.46 feet below land surface (USGS 2012).

Surface water withdrawals provide the majority of the water supply for Prince George's County; however, some smaller water systems in the southern part of the County use groundwater (MDE 2005; MWCOG n.d.). In the region, groundwater resources also can provide emergency backup water supplies for hospitals, government facilities, and embassies (USGS 2010).

A Phase I Environmental Site Assessment was performed at the site in November 2014 (GSA 2014b). No groundwater contamination was observed at the time, and future contamination is unlikely to occur as a result of former or current owners or operators because of the site's distance from other hazardous waste sites and/or the presence of hydraulic cross-gradients that would prevent contamination of groundwater at the site.

5.1.2.4 Wetlands

The U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA) define jurisdictional wetlands as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3). USACE regulates development in jurisdictional wetlands pursuant to Section 404 of the CWA (33 CFR 320–330). The identification and delineation of jurisdictional wetlands is based on evidence of hydrophytic vegetation, hydric soils, and wetland hydrology.

Decisions regarding jurisdiction can be considered on a case-by-case basis, and the final decision is ultimately determined by USACE. Currently, there are three different wetland delineations that exist for the Greenbelt site, each of which was performed by a different agency with different assumptions and limitations. In addition to the wetland delineations listed in this section, a site-specific survey would be required for regulatory purposes under section 404 of the CWA if wetlands may be disturbed.

GREENBELT WATER RESOURCES AFFECTED ENVIRONMENT OVERVIEW

- The Greenbelt site is located within the Upper Anacostia River watershed and the larger Chesapeake Bay watershed.
- Hydrology of Greenbelt site is composed of both stormwater and natural surface waters.
- Indian Creek, a perennial freshwater stream and tributary to the Anacostia River, flows through the site from northeast to southwest. The channel is braided within the site boundary.
- There are 27.9 acres with a 1% annual chance of flooding located within the site.
- NWI, MDDNR, and site surveys indicate the presence of between 5.4 and 32.8 acres of freshwater forested wetlands surrounding Indian Creek.

PERENNIAL PONDS

Generally refers to freshwater bodies of water that are full throughout the year.

TOTAL MAXIMUM DAILY LOAD (TMDL)

Describes the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards under the CWA.

HYDROPHYTIC VEGETATION

The dominant vegetation consists of species capable of growing in water or on substrate that is at least periodically deficient in oxygen as a result of the presence of water.

HYDRIC SOILS

Soils in the area are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth of hydrophytic vegetation.

WETLAND HYDROLOGY

The area is inundated permanently or periodically, or the soil is saturated to the surface for sufficient duration during the growing season to support hydrophytic vegetation.

PALUSTRINE

Relating to a system of inland, non-tidal wetlands characterized by the presence of trees, shrubs, and emergent vegetation (vegetation that is rooted below water but grows above the surface) (dictionary.com).

FLOODPLAIN DEFINITIONS

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

500-year flood – A flood event that has a 0.2% probablility of occurring in any given year.

National Wetlands Inventory

National Wetlands Inventory (NWI) data were developed by the U.S. Fish and Wildlife Service (USFWS) for the site in April 1981, predating the construction of the Greenbelt Metro Station, which opened in 1993 (USFWS 2015). This dataset is intended to provide reconnaissance-level information for wetlands, including location, size, and type (USFWS 2015). NWI wetlands are usually delineated at a small scale, meaning that large areas are intended to be shown in a relatively small space. The wetland representations are created through analysis of high altitude imagery that identifies vegetation, hydrology, and geography. Image analysis involves inherent errors and depends on image quality, analyst experience, supporting data quality and availability, and the amount of ground-truthed information available. Wetlands, as determined on NWI maps, are not based on USACE definitions and therefore may not be under USACE jurisdictional authority. Because this delineation was performed prior to the construction of the Greenbelt Metro Station, wetland location, size, and type may have changed since the date of analysis.

The NWI data identify several wetlands on the Greenbelt site. A 26.3-acre freshwater forested wetland is present throughout the eastern and southern portions of the site, as shown in figure 5-6 (USFWS 2010). This wetland, which is bisected by the braided Indian Creek, is classified as a palustrine forested, temporarily flooded wetland characterized by broad-leaved deciduous vegetation (PFO1A). This wetland extends south outside the boundaries of the site and is associated with several additional wetlands along Indian Creek, including other freshwater forested, freshwater emergent, freshwater unconsolidated shore, and pond wetlands characterized by varying flooding regimes. These wetlands have been disturbed previously by existing development (GSA 2014b).The NWI data also indicate that there is a 6.4-acre freshwater wetland (PEM5CH) classified as a palustrine, emergent, seasonally flooded wetland that has been formed through the presence of a dike or impoundment and is characterized by the perennial grass, Phragmites australis in the western portion of the site. This wetland has been previously disturbed and now is covered by a portion of the existing parking lot.

Maryland Department of Natural Resources

The second source for wetland information is the Maryland Department of Natural Resources (MDDNR) wetland inventory. MDDNR wetland delineations were created through manual interpretation of photos taken between 1988 and 1995. The minimum wetland size allowed by this analysis method is 0.5 acre. MDDNR has indicated that these data likely underestimate the amount of palustrine forested wetlands, and small wetlands could be missed as a result of dense forest cover (MDDNR n.d.).

The MDDNR wetland inventory data show a 15.0 acre wetland located east of the existing parking lot within the Greenbelt site (MDDNR 2005). The wetland effectively surrounds the braided Indian Creek system and widens to the southwest to accommodate the more complex channel structure. The wetland is classified as a combination of palustrine scrub-shrub characterized by broad-leaved deciduous vegetation and palustrine emergent with persistent vegetation that is temporarily flooded (PSS1/EM1A). This freshwater scrub-shrub/emergent wetland extends southward outside the boundaries of the site and is associated with other wetlands, including freshwater forested, emergent, scrub-shrub, and unconsolidated bottom wetlands characterized by varying flooding regimes.

American Land Title Association Survey

The third source for wetlands information at this site is a wetland delineation that is included in the American Land Title Association (ALTA) survey performed on the Greenbelt site in December 2014. This survey was performed in support of the exchange partner solicitation process. Typically, vegetation sampling and characterization for a wetland delineation should be performed during the growing season to obtain an accurate representation of the vegetative community. Indicators of wetland hydrology are also best observed during the growing season. The ALTA wetland delineation was performed outside the growing season thereby limiting the identifiable vegetation and hydrology indicators.

The ALTA wetland delineation identified six wetlands located entirely or partly within the Greenbelt site, as shown in figure 5-6. Each wetland was classified as palustrine forested. The total area of delineated wetlands on the Greenbelt site is 5.43 acres, as shown in table 5-2. Three wetlands are located to the west of the braided Indian Creek channel, and three are located on the east side. The large wetland in the southeastern portion of the site extends south outside of the site boundary.

Table 5-2: Greenbelt Wetland Acreage

Wetland Delineation	Acres within Site
National Wetland Inventory	32.8[a]
MDDNR	15.0
ALTA Survey	5.4

[a] *Of this, 6.3 acres are previously disturbed*

Table 5-3: Floodplain Acreage

100 Year Floodplain Delineation	Acres within Site
FEMA Effective FIRM (1989)	35.7
FEMA Revised Preliminary FIRM (2015)	27.9
Prince George's County Department of Permitting, Inspections, and Enforcement	Unknown at this time

5.1.2.5 *Floodplains*

Flooding has been a long-standing problem throughout the Anacostia River watershed, which historically has a wide, flat floodplain (FEMA 2013a). Development occurred in the watershed's floodplains before stormwater management regulations and controls were developed. Periodic flooding of Indian Creek occurs primarily in the middle and lower portions of the subwatershed from just upstream of the Capital Beltway down to the confluence with Paint Branch and along the U.S. Route 1 corridor in the upper portion of the subwatershed. The Greenbelt site falls within these areas of periodic flooding. Upstream of the site on Indian Creek there have been channel and culvert improvements and detention ponds have been created in an attempt to protect against flooding issues (FEMA 2013a).

Three sources of data, each using different base flood elevations, are used to describe existing floodplains on the Greenbelt site (see table 5-3). However, for all these sources, the 100-year floodplain is defined as an area with high flood risk and a 1 percent annual chance of flooding based on past meteorological data. The 500-year floodplain is an area that has a 0.2 percent chance of an annual flood. Delineation and refined mapping of the floodplains at this site have been ongoing for more than 10 years.

Federal Emergency Management Agency Effective Flood Insurance Rate Map

The Federal Emergency Management Agency (FEMA) publishes the effective Flood Insurance Rate Map (FIRM) for the area. The FIRM and associated data are the official floodplain, and all flood risks and National Flood Insurance Program rates are based on this information. The effective FIRM panel for this site is 452080015D, effective on December 15, 1989 (FEMA 1989), which predates the construction of the Greenbelt Metro Station. The effective FIRM indicates there are floodplains characterized as A6, A8, and B located throughout most of the site, as shown in figure 5-7 (FEMA 1989). Flood zones A6 and A8 encompass much of the eastern and southwestern portions of the site, and are defined as the 100-year floodplain (FEMA 1989), for which the base flood elevation has not been determined. However, the FIRM does show base flood elevations along Indian Creek of 67.5 to 72 feet above the National Geodetic Vertical Datum of 1929 (NGVD29). Flood zone B occurs mainly on the west side of the site and covers much of the existing surface parking lot. This flood zone is described as "areas between the limits of the 100-year flood and the 500-year flood; or certain areas subject to 100-year flooding with average depths less than 1 foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood" (FEMA 1989). Until the FEMA revised preliminary FIRM is finalized, this floodplain delineation is the legally applicable floodplain.

FEMA Revised Preliminary FIRM

The second source of floodplain information is from preliminary data that FEMA developed for a revised preliminary Flood Insurance Study and FIRM for Prince George's County in 2013, as shown in figure 5-7 (FEMA 2013b). According to these data, there are floodplains within the site, but they differ from those in the effective FIRM. A floodplain with flood zone AE, or the 100-year floodplain, for which the base flood elevation has been determined, is located mainly in the area south and east of Indian Creek, running from the northeast corner to the southwest corner of the site. The revised floodplain does not include any of the existing surface parking within the site boundaries. Base flood elevations for the floodplain are approximately 68.5 to 75 feet above North American Vertical Datum of 1988. Converted to NGVD29, these base flood elevations are 69.3 to 75.8 feet. No 500-year floodplain is indicated. Although the preliminary floodplain is the best available information concerning floodplains within the site, the preliminary floodplain does not have any legal authority and cannot be used for flood insurance purposes. Preliminary floodplain data are specifically intended to be used only for "review and guidance" purposes and are subject to change (FEMA 2014). A letter of map revision would be required to legally revise the floodplain prior to the approval of the revised preliminary floodplain.

Figure 5-7: Greenbelt Floodplain Resources Map

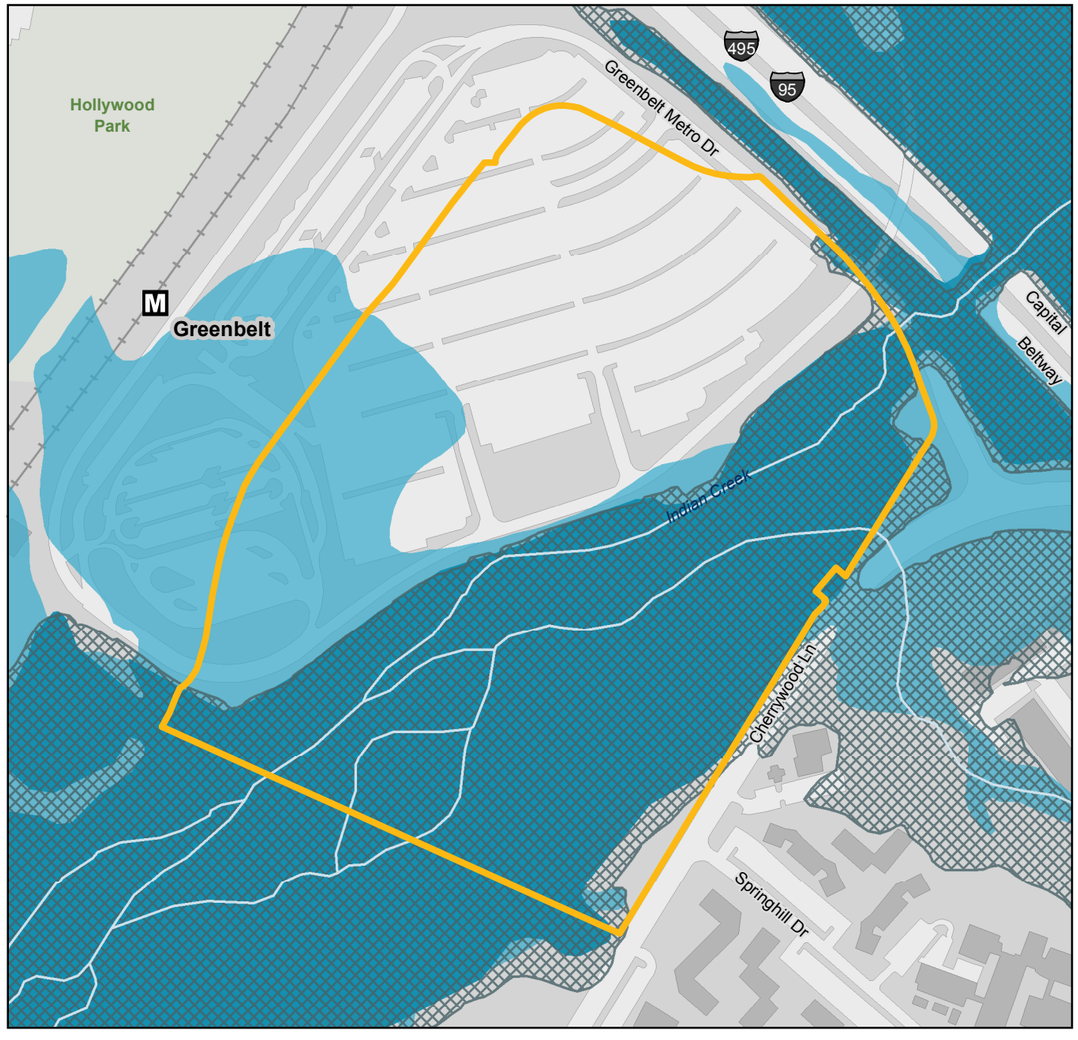
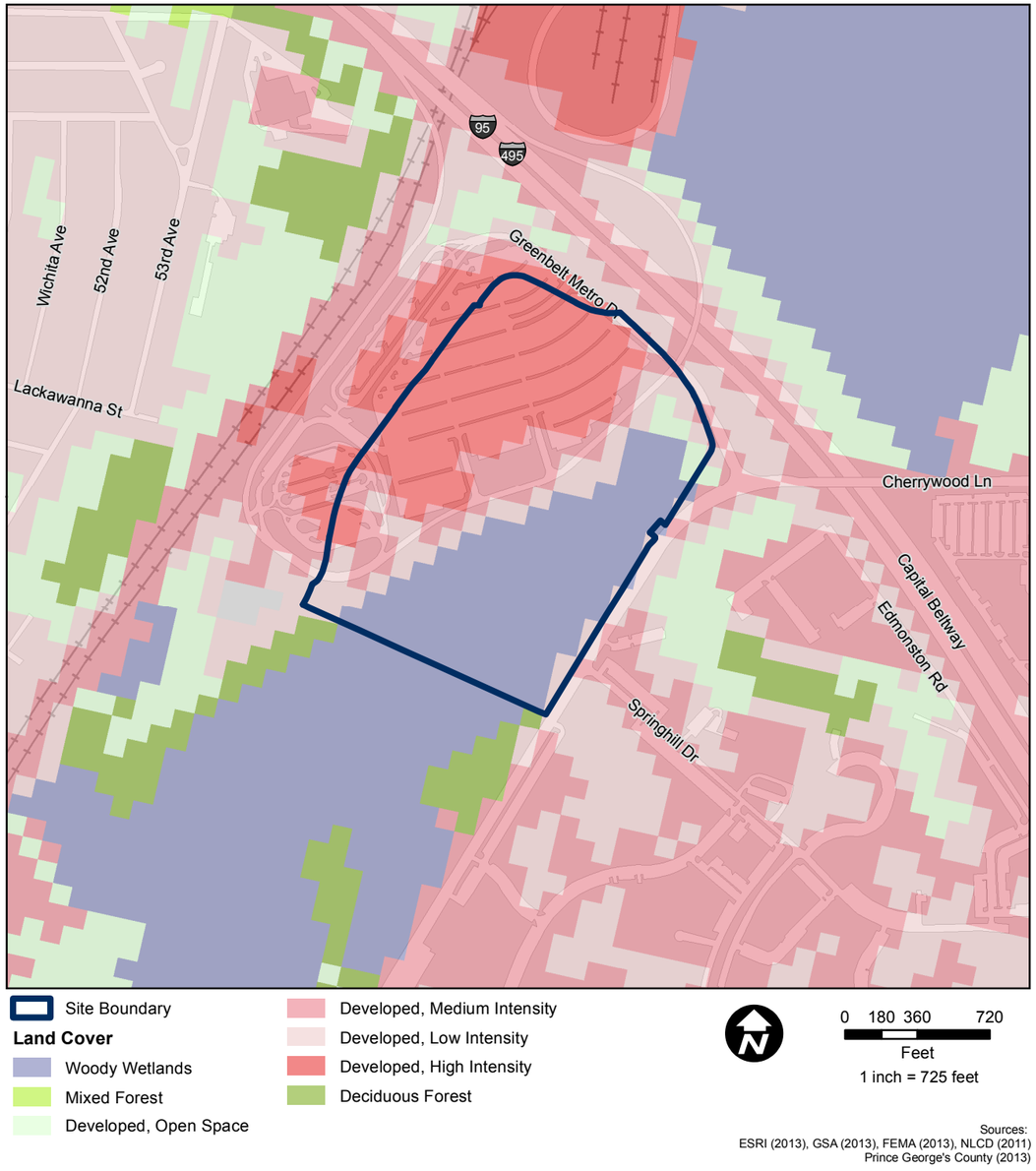


Figure 5-8: Land Cover Classes for the Greenbelt Site



Although the original revised preliminary Flood Insurance Study and FIRM for Prince George's County were released for public review in 2013, a letter of final determination has not been issued. A second revision was released in January 2015, and a public meeting on these revisions was held on June 10, 2015. A letter of final determination was expected to be signed on June 2, 2015, with a corresponding final effective FIRM projected for December 2, 2015 (FEMA 2015). However, these dates are contingent on the completion of the public involvement process and the resolution of outstanding appeals; the effective FIRM continues to have legal authority until the revised floodplains are approved.

Prince George's County Department of Permitting, Inspections, and Enforcement

According to scoping comments provided through the Maryland State Clearing House, Prince George's County Department of Permitting, Inspections, and Enforcement (DPIE) is the lead agency for determining the official 1 percent annual chance fund for permitting as part of development approval process. The base flood elevations of the upstream and downstream site boundaries provided by Prince George's County DPIE are 74.1 feet to 67 feet NGVD29, respectively (Babar 2015). The extent is similar to the revised preliminary floodplain. The Prince George's County Zoning Ordinance uses this floodplain, or at a minimum the effective FEMA floodplain. If the Greenbelt site were selected as the preferred alternative, the exchange partner would be responsible for ensuring compliance with this permitting requirement.

5.1.3 Biological Resources

The following sections describe the affected environment for biological resources for the Greenbelt site. Biological resources include vegetation, aquatic plant and animal species, terrestrial plant and animal species, and special status species.

5.1.3.1 Vegetation

The northwestern portion of the Greenbelt site contains limited vegetation because it is covered by impervious surface associated with the existing Metro Station parking. The southeastern portion contains undeveloped, wooded floodplains and wetlands. As shown in figure 5-8, the mapped National Land Cover Database (NLCD) land cover classes for the site include high-intensity developed, medium-intensity developed, and woody wetlands (USGS 2011). The land cover classes are defined by USEPA (2001) and range from impervious surfaces accounting for 50 to 100 percent of the total cover in the developed area, to vegetative cover periodically saturated with water in the undeveloped portion of the site. The site includes approximately half existing development and half woody wetlands.

A wetland delineation conducted in December 2014 as part of the ALTA survey identified the following vegetation at the Greenbelt site: red maple, American sweetgum (*Liquidambar styraciflua*), white oak (*Quercus alba*), American beech (*Fagus grandifolia*), American hornbeam (*Carpinus caroliniana*), American holly (*Ilex opaca*), American walnut (*Junglans nigra*), northern sea oat (*Chasmanthium latifolium*), common rush (*Juncus effusus*), poison ivy (*Toxicodendron radicans*), common greenbrier (*Smilax rotundifolia*), swamp Spanish oak (*Quercus palustris*), black gum, sedges (*Carex sp.*), tulip poplar, Virginia creeper (*Parthenocissus quinquefolia*), royal fern (*Osmunda regalis*), and black cherry (*Prunus serotine*).

Additionally, the Indian Creek Environmental Baseline Conditions and Restoration Report identified three major invasive plant problem areas within the vicinity of the site (MWCOG 2009). A survey by NatureServe documented the following invasive plant species within the Upper Anacostia River watershed: Japanese stiltgrass (*Microstegium vimineum*), Japanese barberry (*Berberis thunbergii*), oriental bittersweet (*Celastrus orbiculatus*), crabapple (*Malus sp.*), ornamental cherry (*Prunus subhirtella*), wineberry (*Rubus phoenicolasius*), garlic mustard (*Allaria petiolata*), mile-a-minute (*Polygonum perfoliatum*), oriental lady's thumb (*Polygonum cespitosum*), privet (*Ligustrum sinensis*), Japanese honeysuckle (*Lonicera japonica*), and hairy jointgrass (*Arthraxon hispidus*) (Teague et al. 2006).

Virginia Creeper

Red Maple

GREENBELT BIOLOGICAL RESOURCES AFFECTED ENVIRONMENT OVERVIEW

- Land cover classes for the site include high-intensity developed, medium-intensity developed, and woody wetlands.
- Aquatic species that could potentially be present at the site are dependent on the amount of available habitat. Due to the presence of Indian Creek on the site, a number of species could be present including amphibians and reptiles, benthic macroinvertebrates, fish, and mollusks. Other terrestrial species on the site would be those common to forested areas such as white-tailed deer, red fox, and Virginia opossum.
- The site has 23 federally listed birds of conservation concern that might have migration patterns associated with its location and it is likely that some of these species may inhabit that area.

Eastern Box Turtle

Alewife

American Eel

Eastern Mudminnow

5.1.3.2 Aquatic Species

As discussed in section 5.1.2.1, the Greenbelt site is located within the Upper Anacostia River watershed. Indian Creek, a perennial freshwater stream and tributary to the Anacostia River, flows from northeast to southwest through the site. The eastern and southern portions of the site contain a freshwater forested wetland. Aquatic species that could potentially be present at the site are dependent on the amount of available habitat. The site contains forested and scrub shrub wetlands with soils that are periodically saturated with water (USGS 2011), adjacent upland mixed forests, and Indian Creek, which flows through the site. The area surrounding the Greenbelt site has been identified as a Green Infrastructure Corridor by Maryland's Environmental Resources and Land Information Network, connecting extensive natural areas immediately upstream and downstream of the site (State of Maryland 2015).

Aquatic species are likely present in the undeveloped portion of the property adjacent to Indian Creek. County-specific lists for aquatic species were not readily available; therefore, the discussion in this section relies heavily on statewide lists.

Amphibians and Reptiles

Frogs and toads are amphibians that typically prefer riparian areas with a mixture of wet and upland areas. There are 20 frog species that occur in Maryland (Boward et al. 1999). Salamanders, like frogs and toads, typically prefer wet and upland areas. Twenty-one species of salamanders are commonly found in Maryland (Boward et al. 1999). Turtles are reptiles that also prefer riparian and ponded areas, and 14 species of turtles (excluding sea turtles) occur in Maryland (Boward et al. 1999). Because of the on-site habitat and its connection to upstream and downstream water bodies and riparian areas, it is likely that aquatic amphibian and reptile species are present.

Benthic Macroinvertebrates

Benthic macroinvertebrates likely to be in the area include crayfish, clams, snails, aquatic worms, and aquatic insects such as mayflies, stoneflies, caddisflies, and dragonflies. Species specific information for Maryland was not readily available. However, these species typically inhabit a variety of aquatic habitats (e.g., streams and ponds). With the suitable habitat provided by Indian Creek and the surrounding vegetation, it is likely that benthic macroinvertebrates are present at the site.

Fish

There are nearly 100 species of freshwater fish in Maryland, with the total population exceeding 61 million (Boward et al. 1999). From tiny and reclusive shiners to big and brash catfish, these animals are key components of balanced aquatic ecosystems and inhabit a variety of aquatic habitats (Boward et al. 1999).

The lower Indian Creek downstream of the Greenbelt Metro Station has received a good rating from the Metropolitan Washington Council of Governments (MWCOG) in the 2009 Indian Creek Environmental Baseline Conditions and Restoration Report, indicating it supports a relatively healthy fish community (MWCOG 2009). The Indian Creek Environmental Baseline Conditions and Restoration Report noted that the resident fish population has changed over the past 70 to 80 years as the result of development in the watershed. It identified 60 different species of fish, as shown in table 5-4, that were thought to have once inhabited Indian Creek, of which approximately 45 species are currently present (MWCOG 2009).

According to consultation with MDDNR (Golden 2015), anadromous fish species, including alewife herring, blueback herring, and sea lamprey, have been documented migrating and spawning in reaches of Indian Creek near the Greenbelt Metro Station. Restoration efforts have targeted the improvement of fish passage access to and through these Indian Creek reaches. A Maryland Biological Stream Survey sampling station near the Greenbelt site documents the following warmwater species: American eel (*Anguilla rostrata*), blacknose dace (*Rhinichthys atratulus*), tessellated darter (*Etheostoma olmstedi*), eastern mudminnow (*Umbra pygmaea*), fallfish (*Semotilus corporalis*), redfin pickerel (*Esox americanus*), white sucker (*Catostomus commersonii*), creek chubsucker (*Erimyzon oblongus*), least brook lamprey (*Lampetra aepyptera*), redbreast sunfish (*Lepomis auritus*), longnose dace (*Rhinichthys cataractae*), pumpkinseed sunfish (*Lepomis gibbosus*), and swallowtail shiner (*Notropis procne*). Because Indian Creek provides suitable aquatic habitat, it is likely that fish species are present in Indian Creek at the Greenbelt site.

Mollusks

Freshwater mussels are a diverse group of bivalves that filter nutrients and sediment and provide habitat and food to other animals. They have a unique reproductive cycle that needs a host, usually a fish, to help them complete the cycle. They are also among the most imperiled groups of organisms in North America. There are 13 mussel species that occur in Maryland (MDDNR 2010a). Due to the suitable aquatic habitat provided by Indian Creek, it is likely that mollusk species such as freshwater mussels are present at the Greenbelt site.

Table 5-4: Indian Creek: Provisional List of Resident and Migratory Fishes Collected or Expected (1898–2006)

Species	Origin	Status	Collected or Expected (1898–2000)
Lampreys (Pteromyzontidae)			
1. American brook lamprey	N	R	H,●
2. Least brook lamprey	N	R	H,●
3. Sea lamprey	N	M	P,●
Eels (Anguillidae)			
4. American eel	N	M/R	H,●
Herrings (Clupeidae)			
5. Gizzard shad	N	R	H,●
6. Blueback herring	N	M	H,●
7. Alewife	N	M	H,●
Pikes (Esocidae)			
8. Chain pickerel	N	R	H,●
9. Redfin pickerel	N	R	P
Mudminnows (Umbridae)			
10. Eastern mudminnow	N	R	H,●
Minnows (Cyprinidae)			
11. Common carp	I	R	H,●
12. Goldfish	I	R	H,●
13. Silverjaw minnow	N	R	H,●
14. Cutlips minnow	N	R	H,●
15. River chub	N	R	P
16. Golden shiner	N	R	H,●
17. Rosyside dace	N	R	H,●
18. Ironcolor shiner	N	R	H,●
19. Bridle shiner	N	R	P
20. Swallowtail shiner	N	R	H,●
21. Rosyface shiner	N	R	P
22. Spotfin shiner	N	R	H,●
23. Satinfin shiner	N	R	H,●
24. Common shiner	N	R	H,●
25. Spottail shiner	N	R	H,●
26. Eastern silvery minnow	N	R	P
27. Bluntnose minnow	N	R	P
28. Blacknose dace	N	R	H,●
29. Longnose dace	N	R	H,●
30. Northern creek chub	N	R	P
31. Fallfish	N	R	H,●
Suckers (Catostomidae)			
32. Creek chubsucker	N	R	H,●
33. White sucker	N	R	H,●
34. Northern hogsucker	N	R	P
35. Shorthead redhorse	N	R	P,●
36. Golden redhorse	I	R	H,●
Catfishes (Ictaluridae)			
37. Channel Catfish	I	R	H,●
38. Yellow bullhead	N	R	H,●
39. Brown bullhead	N	R	H,●
40. Tadpole madtom	N	R	P
41. Margined madtom	N	R	P
Silversides (Atherinidae)			
42. Inland silversides	N	R	P
Killifishes (Fundulidae)			
43. Mummichog	N	R	P
44. Banded killifish	N	R	H,●
45. Sheepshead minnow	N	R	H,●
Livebearers (Poeciliidae)			
46. Eastern mosquitofish	N	R	P
Striped basses (Moronidae)			
47. White perch	N	R	P,●
Sunfishes (Centrarchidae)			
48. Bluespotted sunfish	N	R	P,●
49. Green sunfish	N	R	H,●
50. Bluegill sunfish	IP	R	H,●
51. Redbreast sunfish	N	R	H,●
52. Longear sunfish	N	R	H,●
53. Pumpkinseed sunfish	N	R	H,●

Table 5-4: Indian Creek: Provisional List of Resident and Migratory Fishes Collected or Expected (1898–2006) (continued)

Species	Origin	Status	Collected or Expected (1898–2000)
54. Largemouth bass	I	R	H,●
55. Smallmouth bass	I	R	H,●
56. Black crappie	N	R	H,●
Perches (Percidae)			
57. Tessellated darter	N	R	H,●
58. Shield darter	N	R	P
59. Log perch	N	R	P
60. Yellow Perch	N	M	H,●
Total No. of Historical/Current Species			**60/45**

Key Abbreviations:
N = native; I = introduced; IP = probably introduced; R = resident; M = migratory;
H= historical presence documented; P = probable historical presence; ● = collected since 1988

Source: MWCOG (2009)

5.1.3.3 Terrestrial Species

The presence of wildlife species in any particular location depends on the available habitat and resources as well as connectivity to nearby habitat. Half of the Greenbelt site is paved. The other half consists of forested wetlands around Indian Creek. Terrestrial wildlife would likely avoid the paved area; however, the forested wetland and riparian zone provide ideal habitat for certain wildlife species in Maryland. While a species survey has not been performed on this site, it is likely that common Maryland species that prefer forested wetlands may occur in the area. Common Maryland mammal species likely to occur include white-tailed deer (*Odocoilieus virginianus*), red fox (*Vulpes fulva*), Virginia opossum (*Didelphis virginiana*), eastern cottontail (*Sylvilagus floridanus*), coyote (*Canis latrans*), eastern chipmunk (*Tamias striatus*), striped skunk (*Mephitis mephitis*), squirrel (*Sciuridae spp.*), raccoon (*Procyon lotor*), and species of bat.

Avian species, especially common forest-dwelling birds (brown creeper [*Certhia americana*] and hairy woodpecker [*Picoides villosus*]) and other passerines birds, may occur within the forested wetland. Migratory songbird species, raptors (hawks and falcons) may fly overhead and occasionally perch or forage in this location. Canada geese (*Branta canadensis*) and signs (scat, tracks) of white-tailed deer were observed during a site visit on December 30, 2014.

Snakes, lizards, and turtles are likely to occur in this location because of the riparian habitats that exist on this site. Specific species or subspecies that may occur include eastern rat snake, five-lined skink (*Eumeces fasciatus*), and eastern box turtle (*Terrapene carolina carolina*) (MDDNR 2014).

Varieties of terrestrial insects are common to the Maryland area and include: ants, bees and wasps, beetles, moths and butterflies, and grasshoppers (Maryland State Archives 2014). Arachnid species, such as ticks and spiders, are also common in Maryland and may occur on the site (mostly in the forested wetland area), although lists were not readily available.

5.1.3.4 *Special Status Species*

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

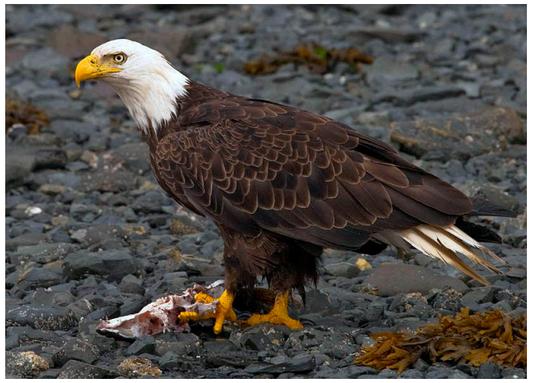
The northern long-eared bat (*Myotis septentrionalis*) was listed as threatened in May 2015. Consultation with USFWS in December 2014 and with MDDNR confirmed that the northern long-eared bat does not occur within or adjacent to the Greenbelt site (Byrne 2015; USFWS 2014a).

The site has 23 federally listed birds of conservation concern that have migration patterns associated with its location. These species are detailed in table 5-5. Due to the presence of natural habitat, there is likelihood that some of these species may inhabit the area. The most likely of the birds of conservation concern to be observed at the site are forest-dwelling species, such as the warblers and wood thrush (*Hylocichla mustelina*).

Table 5-5: Federally listed Migratory Birds of Conservation Concern

Common Name	Scientific Name	Use of Site
American oystercatcher	*Haematopus palliatus*	Year-round
American bittern	*Botaurus lentiginosus*	Wintering
Bald eagle	*Haliaeetus leucocephalus*	Year-round
Black-billed cuckoo	*Coccyzus erythropthalmus*	Breeding
Blue-winged warbler	*Vermivora cyanoptera*	Breeding
Cerulean warbler	*Setophaga cerulea*	Breeding
Fox sparrow	*Passerella iliaca*	Wintering
Gull-billed tern	*Gelochelidon nilotica*	Breeding
Kentucky warbler	*Oporornis formosus*	Breeding
Least bittern	*Ixobrychus exilis*	Breeding
Pied-billed grebe	*Podilymbus podiceps*	Breeding
Prairie warbler	*Dendroica discolor*	Breeding
Prothonotary warbler	*Protonotaria citrea*	Breeding
Purple sandpiper	*Calidris maritima*	Wintering
Red-headed woodpecker	*Melanerpes erythrocephalus*	Year-round
Red knot	*Calidris canutus*	Wintering
Rusty blackbird	*Euphagus carolinus*	Wintering
Saltmarsh sparrow	*Ammodramus caudacutus*	Year-round
Short-billed dowitcher	*Limnodromus griseus*	Wintering
Short-eared owl	*Asio flammeus*	Wintering
Snowy egret	*Egretta thula*	Breeding
Wood thrush	*Hylocichla mustelina*	Breeding
Worm-eating warbler	*Helmitheros vermivorum*	Breeding

Source: USFWS (2014a)



Bald Eagle

Wood Thrush

White-tailed Deer