

Bus: Local

The Greenbelt site is served by many Metrobus lines, Prince George’s County TheBus service, and the Regional Transit Authority of Central Maryland (RTA) service. All bus routes stop at the Greenbelt Metro Station bus loop, allowing for easy transfers between bus and rail. Most of the bus routes serve the City of Greenbelt and other surrounding areas of Prince George’s County. Metrobus routes 87, 89, and 89M connect Greenbelt to the City of Laurel, and Metrobus routes G12, G14, and G16 connect Greenbelt to the City of New Carrollton. Metrobus route B30 connects Greenbelt with BWI Thurgood Marshall International Airport in Anne Arundel County, Maryland, and the Maryland Transit Administration’s Light Rail, which serves the Baltimore metropolitan area. Table 5-17 summarizes the major characteristics of bus routes serving the study area. Figure 5-28 illustrates bus routes serving the study area.

Bus Frequency of Service

Table 5-18 summarizes weekday headways (wait time between bus arrivals) and span of service (hours of operation) on routes that serve Greenbelt site. Headways represent the time between buses in minutes. Most routes operate throughout the day with peak service during the morning and evening rush hours, which fall between 6:00 AM and 9:00 AM and 3:00 PM and 7:00 PM, respectively. Some routes have limited or reduced service during the midday period (from 9:00 AM to 3:00 PM), including Metrobus Routes 87, 89, G13, G16, R11, and R3 which do not operate at all during this time. Metrobus Routes G12 eastbound and G16 westbound are the only routes that operate after 11:00 PM with each route operating one trip between 11:00 PM and 4:00 AM.

Metrobus Route C2 provides the most frequent service, with peak headways between 18 and 26 minutes. Several other routes provide 30-minute peak headways, including TheBus Routes 11 and 16 and Metrobus Routes 87 and G12.

Figure 5-28: Bus Routes Serving the Greenbelt Study Area

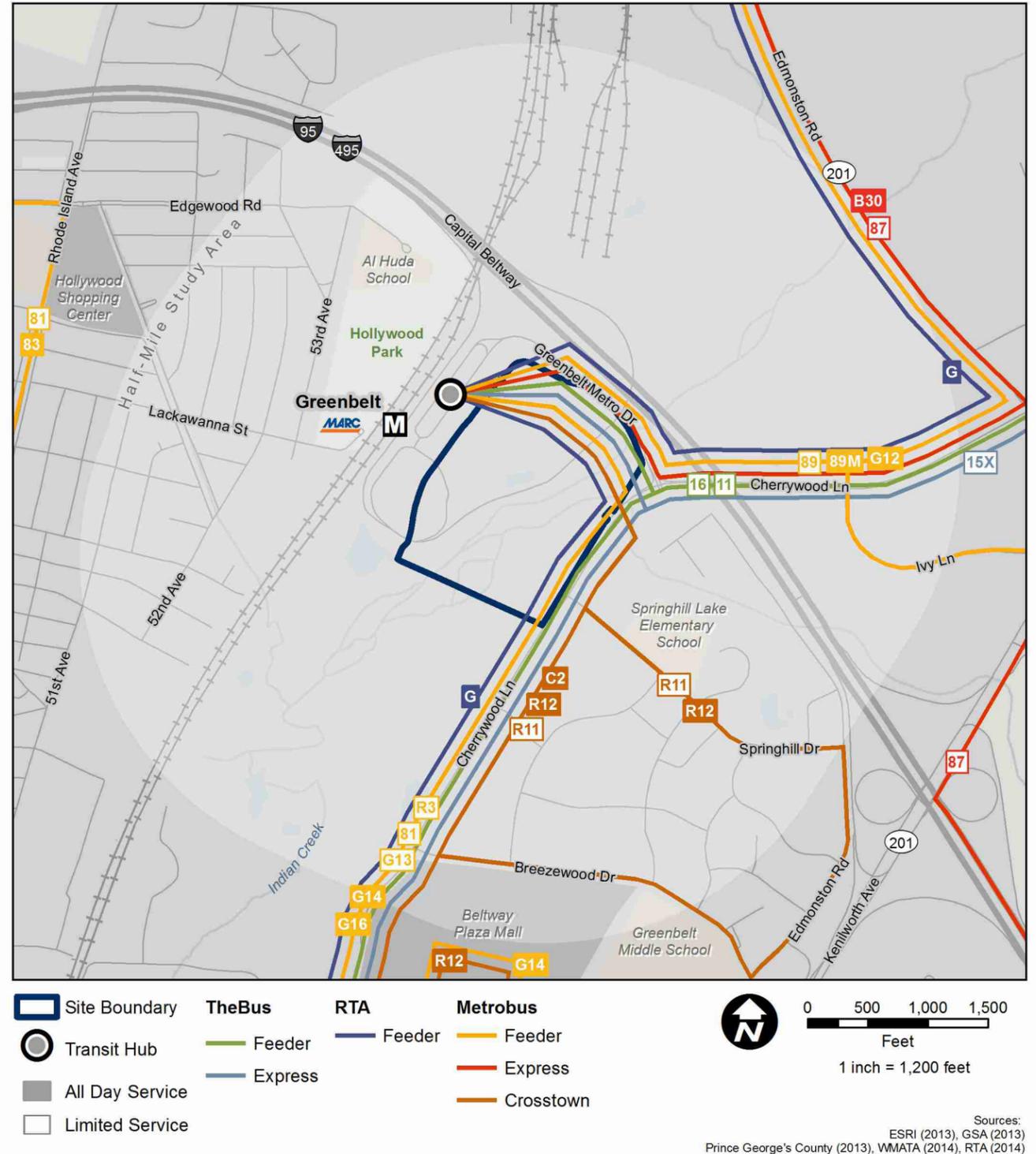


Table 5-17: Major Service Characteristics of Bus Routes Serving the Greenbelt Study

Route	Agency	Description	Route Type	Major Destinations
11	TheBus	Greenbelt	Feeder	Greenbelt Metro Station/Ivy Lane, Federal Courthouse, Greenway Center, Mandan Road
15X	TheBus	Goddard Space Flight Center	Express	Greenbelt Metro Station/Goddard Space Flight Center/New Carrollton Metro Station
16	TheBus	Greenbelt to New Carrollton	Feeder	New Carrollton Metro Station, Doctors Community Hospital, Beltway Plaza, Greenbelt Metro Station
81	WMATA	College Park Line	Feeder	Greenbelt Metro Station, University of Maryland, Rhode Island Avenue Metro Station
87	WMATA	Laurel Express	Express	Laurel Plaza, Greenbelt Metro Station, New Carrollton Metro Station
89	WMATA	Laurel	Feeder	Laurel Plaza, Laurel Mall, Greenbelt Metro Station
89M	WMATA	Laurel	Feeder	Laurel Park and Ride Lot, Laurel Plaza, Laurel Mall, Greenbelt Metro Station
B30	WMATA	BWI Marshall Express	Express	Greenbelt Metro Station, BWI Marshall Airport, BWI Business District Light Rail
C2	WMATA	Greenbelt-Twinbrook	Crosstown	Greenbelt Metro Station, Prince George's Plaza Metro Station, Twinbrook Metro Station
G12	WMATA	Greenbelt-New Carrollton	Feeder	Greenbelt Metro Station, Goddard Corporate Park, Doctors Community Hospital, New Carrollton Metro Station
G13	WMATA	Greenbelt-New Carrollton	Feeder	Greenbelt Metro Station, Goddard Corporate Park, Doctors Community Hospital, New Carrollton Metro Station
G14	WMATA	Greenbelt-New Carrollton	Feeder	Greenbelt Metro Station, Goddard Corporate Park, Doctors Community Hospital, New Carrollton Metro Station
G16	WMATA	Greenbelt-New Carrollton	Feeder	Greenbelt Metro Station, Goddard Corporate Park, Doctors Community Hospital, New Carrollton Metro Station
R11	WMATA	Kenilworth Avenue	Crosstown	Greenbelt Metro Station, Westchester Park, College Park Metro Station, Kenilworth Towers, Deanwood Metro Station
R12	WMATA	Kenilworth Avenue	Crosstown	Greenbelt Metro Station, Beltway Plaza, Westchester Park, College Park Metro Station, Deanwood Metro Station
R3	WMATA	Greenbelt-Prince George's Plaza	Feeder	Greenbelt Metro Station, Beltway Plaza, Archives II, Prince George's Plaza Metro Station
302/G	RTA	Laurel-College Park	Feeder	Towne Centre Laurel, Centre at Laurel, FDA Muirkirk Campus, College Park Metro Station, Greenbelt Metro Station

Source: Prince George's County (2013); RTA (2015); WMATA (2015)

Table 5-18: Frequency of Service on Bus Routes Serving the Greenbelt Study Area

Route & Direction	Agency	Weekday							Saturday		Sunday		
		Headways (minutes)						Number of Trips	Span of Service	Headway (Minutes)	Span of Service	Headway (Minutes)	Span of Service
		4 AM - 6 AM	6 AM - 9 AM	9 AM - 3 PM	3 PM - 7 PM	7 PM - 11 PM	11 PM - 4 AM						
11 Loop	TheBus	60	30	30	30	2 trips	-	30	5:18 AM to 8:29 PM	-	-	-	-
15X North	TheBus	-	36	2 trips	40	1 trip	-	14	6:00 AM to 7:35 PM	-	-	-	-
15X South	TheBus	-	36	2 trips	40	1 trip	-	14	6:00 AM to 7:35 PM	-	-	-	-
16 North	TheBus	-	30	51	30	2 trips	-	23	6:00 AM to 8:18 PM	-	-	-	-
16 South	TheBus	1 trip	30	51	30	2 trips	-	24	5:30 AM to 8:17 PM	-	-	-	-
87 North	WMATA	1 trip	36	-	30	1 trip	-	15	5:50 AM to 7:47 PM	-	-	-	-
87 South	WMATA	40	30	-	48	1 trip	-	15	4:46 AM to 7:45 PM	-	-	-	-
89 North	WMATA	1 trip	45	-	48	80	-	13	5:59 AM to 10:50 PM	-	-	-	-
89 South	WMATA	1 trip	45	1 trip	60	80	-	13	5:50 AM to 11:25 PM	-	-	-	-
89M North	WMATA	-	-	60	-	-	-	6	9:30 AM to 3:21 PM	-	-	-	-
89M South	WMATA	-	-	72	2 trips	-	-	6	10:26 AM to 4:13 PM	-	-	-	-
B30 North	WMATA	-	36	40	40	48	-	25	6:10 AM to 10:38 PM	40	8:45 AM to 10:35 PM	40	8:45 AM to 10:35 PM
B30 South	WMATA	-	45	40	40	40	-	25	6:54 AM to 11:19 PM	40	9:35 AM to 11:21 PM	40	9:35 AM to 11:21 PM
C2 East	WMATA	60	26	26	18	40	-	42	5:12 AM to 10:15 PM	27	6:10 AM to 9:39 PM	-	-
C2 West	WMATA	30	18	26	24	34	-	45	5:09 AM to 11:27 PM	27	6:50 AM to 11:02 PM	-	-
G12 East	WMATA	60	30	51	30	48	1 trip	29	5:15 AM to 11:54 PM	60	6:40 AM to 10:18 PM	-	-
G12 West	WMATA	60	30	51	27	2 trips	-	26	5:07 AM to 9:32 PM	60	6:32 AM to 10:22 PM	-	-
G13 East	WMATA	-	36	-	-	-	-	5	6:05 AM to 9:01 AM	-	-	-	-

Table 5-17: Frequency of Service on Bus Routes Serving the Greenbelt Study Area (continued)

Route & Direction	Agency	Weekday						Number of Trips	Span of Service	Saturday		Sunday	
		Headways (minutes)								Headway (Minutes)	Span of Service	Headway (Minutes)	Span of Service
		4 AM - 6 AM	6 AM - 9 AM	9 AM - 3 PM	3 PM - 7 PM	7 PM - 11 PM	11 PM - 4 AM						
G13 West	WMATA	60	45	-	-	-	-	6	5:04 AM to 8:21 AM	-	-	-	-
G14 East	WMATA	1 trip	90	60	40	-	-	15	5:48 AM to 6:31 PM	-	-	-	-
G14 West	WMATA	-	90	45	40	-	-	16	7:58 AM to 6:54 PM	-	-	-	-
G16 East	WMATA	-	-	-	120	60	-	6	6:00 PM to 10:25 PM	60	6:40 AM to 10:13 PM	-	-
G16 West	WMATA	-	-	-	1 trip	2 trips	1 trip	4	6:51 PM to 11:25 PM	60	6:39 AM to 10:20 PM	-	-
R11 North	WMATA	60	45	-	-	-	-	6	5:02 AM to 8:13 AM	-	-	-	-
R11 South	WMATA	40	36	-	-	-	-	8	4:59 AM to 9:12 AM	-	-	-	-
R12 North	WMATA	-	60	51	30	60	-	22	7:53 AM to 10:02 PM	60	8:10 AM to 9:53 PM	-	-
R12 South	WMATA	-	180	51	30	2 trips	-	18	8:53 AM to 9:13 PM	60	8:00 AM to 10:43 PM	-	-
R3 North	WMATA	1 trip	36	-	40	1 trip	-	13	5:48 AM to 7:45 PM	-	-	-	-
R3 South	WMATA	1 trip	36	-	40	-	-	12	5:46 AM to 6:54 PM	-	-	-	-
81 North	WMATA	-	-	-	-	-	-	-	-	-	-	60	8:21 AM to 7:11 PM
81 South	WMATA	-	-	-	-	-	-	-	-	-	-	60	8:52 AM to 5:40 PM
G North	RTA	-	-	-	-	-	-	0	-	45	9:42 AM to 6:35 PM	60	10:25 AM to 6:50 PM
G South	RTA	-	-	-	-	-	-	0	-	45	9:00 AM to 5:49 PM	60	10:00 AM to 6:24 PM

Source: Prince George's County (2013); RTA (2015); WMATA (2015)

Ridership by Route

Table 5-19 shows that Metrobus Route C2 (connecting Greenbelt with Prince George’s Plaza and Twinbrook Stations) is the busiest route serving Greenbelt, carrying 5,271 passengers on an average weekday. Other busy routes include Metrobus Routes G14, G12, and R12, all of which connect Greenbelt to areas of Prince George’s County that require downtown transfer between Metrorail lines in order to be accessed. The Metrobus routes that connect Greenbelt with Laurel (87, 89, and 89M) all have lower ridership. TheBus and RTA did not have ridership data available for this report.

Ridership by route and direction and stop level ridership can be found in the Greenbelt TIA (Appendix C).

Bus: Intercity

Currently, Bolt Bus provides intercity bus service between Greenbelt Metro Station Bus Bay H and New York, New York (Bolt Bus n.d.). Levels of service vary; however, six roundtrips are typically offered on weekdays, eight are typically offered on Saturdays, and nine are typically offered on Sundays.

Bus: Commuter

There are currently no commuter bus routes that serve the Greenbelt study area.

Shuttles

There are several shuttles that serve the Greenbelt study area, including University of Maryland (UMD) shuttles, USDA shuttles, and shuttles for local area residential developments (UMD 2015; USDA 2015; Franklin Park at Greenbelt Station 2015). UMD provides a shuttle at the Greenbelt Metro Station, which requires a UMD identification card. USDA provides a single shuttle between its facilities in Beltsville and the Greenbelt Metro Station. Passengers must present a USDA identification card. Table 5-20 provides details on shuttle service in the Greenbelt study area.

Table 5-19: Average Weekday Ridership by Bus Route Serving the Greenbelt Study Area

Route	Agency	Description	Average Weekday Boardings
C2	WMATA	Greenbelt-Twinbrook	5,271
G14	WMATA	Greenbelt-New Carrollton	1,598
R12	WMATA	Kenilworth Avenue	1,419
G12	WMATA	Greenbelt-New Carrollton	1,400
87	WMATA	Laurel Express	894
89	WMATA	Laurel	666
R11	WMATA	Kenilworth Avenue	560
B30	WMATA	BWI Marshall Express	554
G13	WMATA	Greenbelt-New Carrollton	490
89M	WMATA	Laurel	437
G16	WMATA	Greenbelt-New Carrollton	356
R3	WMATA	Greenbelt-Prince George’s Plaza	309
11	TheBus	Greenbelt	N/A
15X	TheBus	Goddard Space Flight Center	N/A
16	TheBus	Greenbelt to New Carrollton	N/A
302/G	RTA	Laurel-College Park	N/A
RTA	302/G	Laurel-College Park	Greenbelt Metro Station

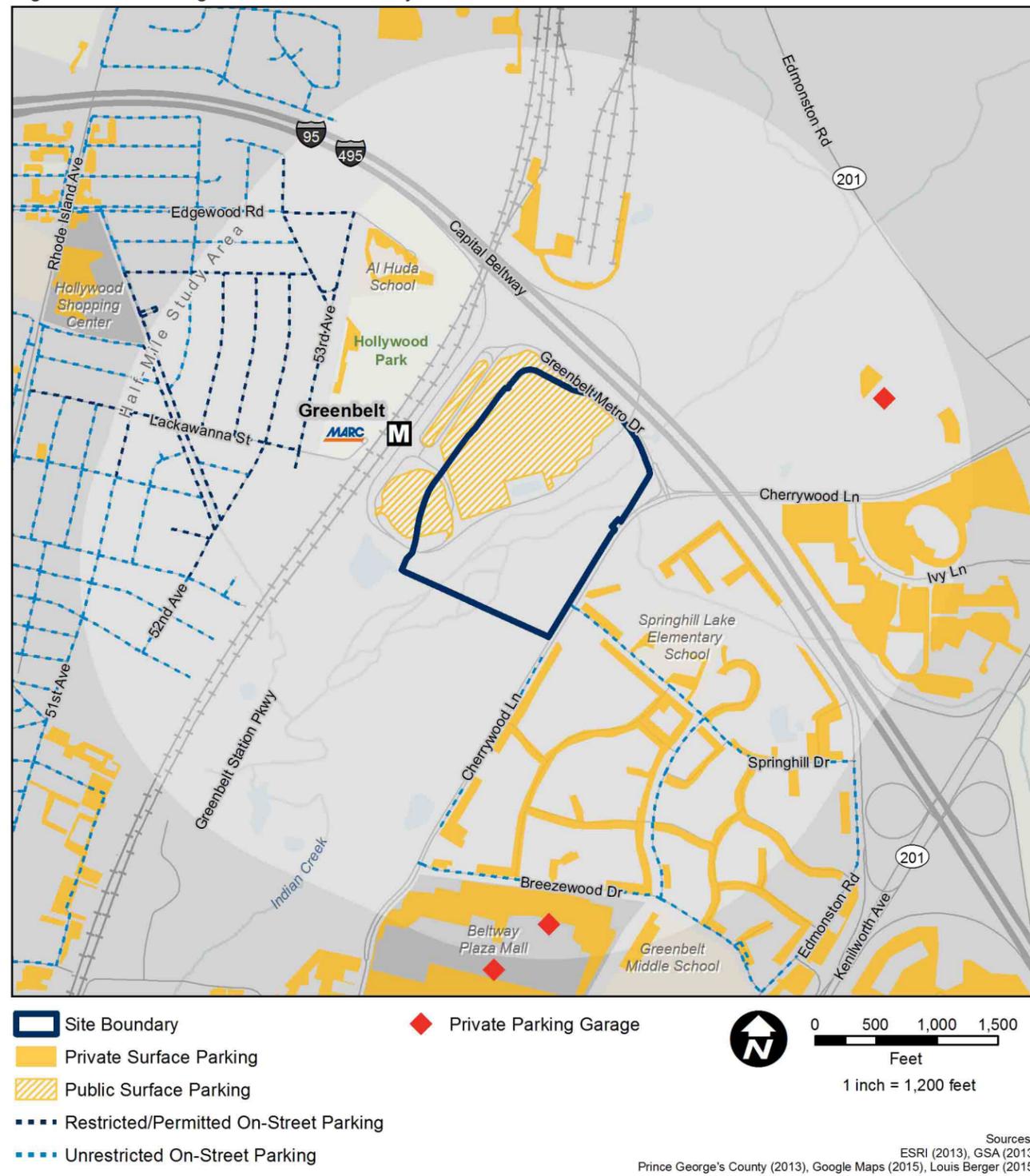
Source: WMATA (2014c)

Table 5-20: Shuttles Serving the Greenbelt Study Area

Agency/ Group	Route Name	Locations Served	Headway (Minutes)	Span of Service
UMD	129	College Park, Berwyn Heights, Greenbelt Station	70	6:40 AM to 11:00 PM (Mon-Thurs); 6:40 AM to 10:00 PM (Friday)
UMD	130	College Park, Goddard Space Flight Center	95	6:25 AM to 11:25 PM (Mon-Thurs); 6:25 AM to 10:15 PM (Friday)
USDA	Beltsville	Greenbelt Metro Station, USDA Offices, Beltsville Agricultural Center	30-60	6:42 AM to 6:08 PM (Mon-Fri)
Franklin Park	Resident Shuttle	Franklin Park at Greenbelt Station neighborhood, Greenbelt Metro Station	unknown	unknown

Source: Franklin Park at Greenbelt Station (2012); USDA (2015); University of Maryland (2015)

Figure 5-29: Parking in the Greenbelt Study Area



Ridesharing (Slugging)

There are no slugging routes in the study area.

Carsharing

Previously, Zipcar was the only carshare company servicing the Greenbelt site, with three cars parked in the Greenbelt Metro Station Park & Ride lot (Zipcar 2015). Beginning on June 1, 2015, WMATA began a new partnership with Enterprise CarShare and ended its partnership with Zipcar (WMATA 2015). Enterprise currently has two vehicles available at the Greenbelt Metro Station (Enterprise 2015).

5.1.9.8 Parking

Parking near the Greenbelt site includes the publicly accessible pay-to-park Greenbelt Metro parking lot, restricted surface lots, one parking garage, and on-street parking, as shown in figure 5-29. On-street parking, is limited to parallel parking in the study area and includes permit-only on-street parking and non-restricted on-street parking. Information about parking in the study area was gathered through the use of Google Maps that consisted of images from summer 2012 as well as on-site observations in April 2015.

Within 0.5 mile of the Greenbelt site, there are a variety of restricted surface parking lots. The closest surface parking is the Greenbelt Metro Station lot on the Greenbelt site. There are more than 3,300 surface parking spaces available, although all spots are reserved for those intending to use the Metrorail or Metrobus services, or other transit that leaves from this area including the MARC commuter rail, other local buses, local shuttles, and intercity bus service (Bolt Bus) (WMATA 2015). Individuals parking at the Greenbelt Metro Station surface lot must pay for parking during the week, but weekend parking is free.

Due east of the Greenbelt site and south of Cherrywood Lane are private and permitted surface parking lots for Capital Office Park. North of Cherrywood Lane are two private parking lots and one private parking garage for the U.S. District Court for the District of Maryland. The surface lots have approximately 180 spaces in total; the parking garage has several hundred spaces available.

Located due north of the Greenbelt site is the WMATA Greenbelt Rail Yard. There are several surface parking lots throughout the Rail Yard which contain more than 300 parking spots combined. The Rail Yard is 0.2 to 0.5 mile away as the crow flies from the Greenbelt site; however, the Capital Beltway acts as a barrier, making the traveling distance between the sites farther than 0.5 mile. Furthermore, parking at the Rail Yard is restricted and is not accessible unless the driver has been granted clearance by WMATA.

There are primarily two neighborhoods with street parking surrounding the Greenbelt site: Hollywood in College Park to the west and Franklin Park at Greenbelt Station in Greenbelt to the east. Although Hollywood is separated from the Greenbelt site by the Metrorail, it is only approximately a 0.1-mile walk from the Greenbelt site due to the walkway extension via a pedestrian tunnel underneath the Metrorail and CSX rail lines. Street parking along Lackawanna Street, Wichita Avenue, 51st Place, 52nd Avenue, 52nd Place, 53rd Avenue, Mangum Road, Narragansett Parkway, and surrounding streets, is permit parking only and is enforced differently depending on the permit restrictions in the area, as shown in table 5-21. There is open parking along Mineola Road, 51st Avenue, Hollywood Road, 50th Avenue, 50th Place, Kenesaw Street, Iroquois Street, Huron Street, and surrounding streets farther out from the Greenbelt Metro Station. Franklin Park, east of the Greenbelt site, has a mixture of public parking, permit parking, and restricted parking. The lots for the apartment complexes require a permit, while the majority of on-street parking allows public parking. There also appears to be available street parking on Springhill Lane, Breezewood Drive, and portions of Springhill Drive. Parking on the school properties within both the Hollywood neighborhood and Franklin Park is intended for the users of the school during school hours and are not public parking lots during those times. There is also some limited on-street parking on the eastern (northbound) side of Cherrywood Lane.

To the south of the Greenbelt site, a portion of the Beltway Plaza Mall is located within 0.5 mile of the site. There are more than 1,000 parking spots available at this location in both surface parking lots and two parking garages. The Beltway Plaza Mall parking is meant for use to those using the mall; however, there are no parking permits in use or posted restrictions for the lot.

5.1.9.9 Truck Access

Due to the nature of the site's current use, trucks rarely access the Greenbelt site. Therefore there are no specific truck access routes established for the site.

Table 5-21: Permit Types in Hollywood Neighborhood in College Park

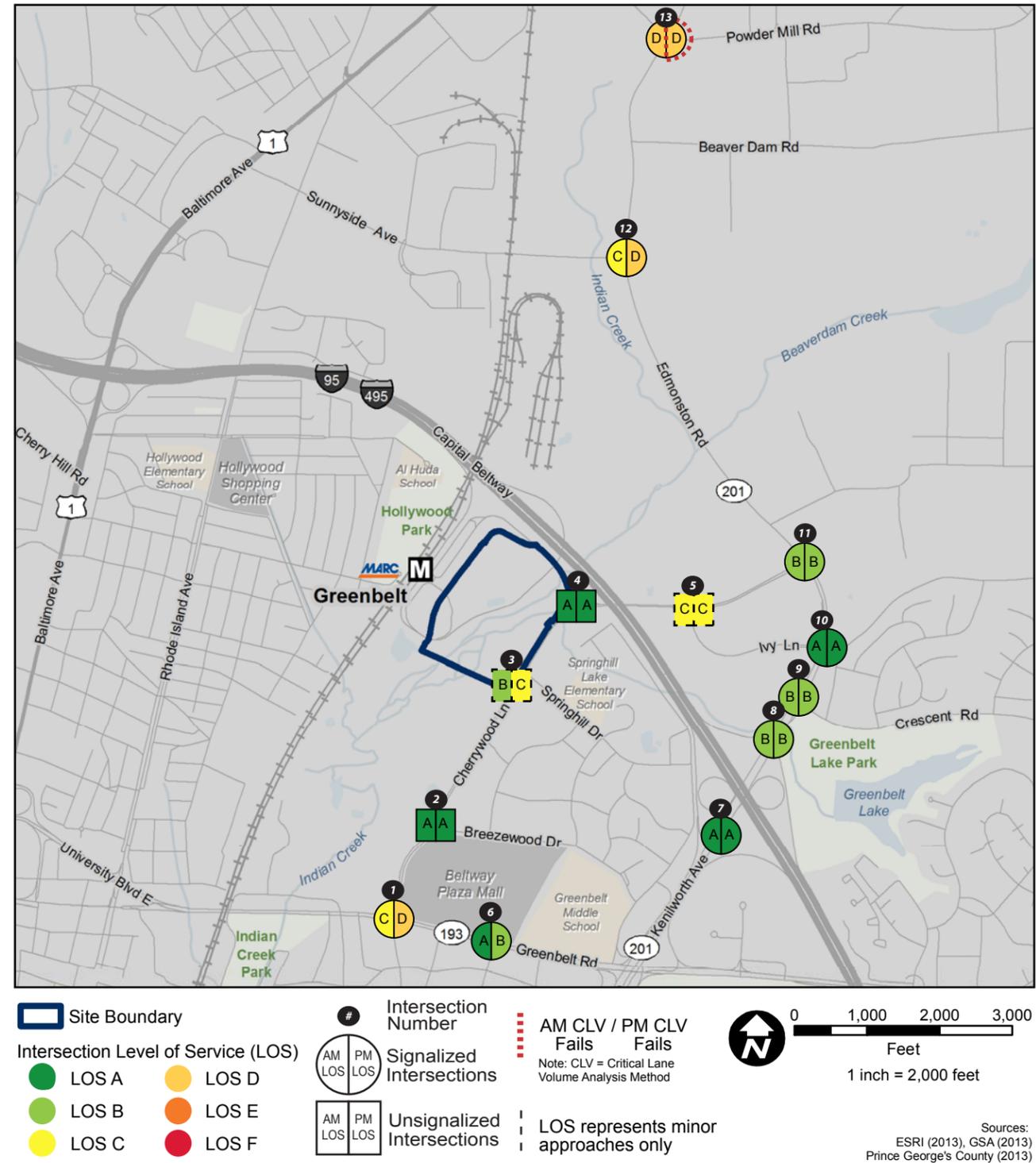
Permit Type	Restriction	Associated Roads
2	Monday – Friday 6:30 AM – 9:30 AM 4:00 PM – 7:00 PM	51st Place, 52nd Place, 52nd Avenue, Wichita Ave, Mangum Road, Narragansett Parkway
2A	Monday – Friday 6:30 AM – Midnight	53rd Avenue, Narragansett Parkway
2B	Monday – Friday 6:30 AM – 7:00 PM	53rd Avenue, Lackawanna Street, Narragansett Parkway, Kennebunk Terrance
3	Monday – Saturday 6:30 AM – Midnight	52nd Avenue, Lackawanna Street
3A	Daily 6:00 AM – Midnight	52nd Avenue, 53rd Avenue, Lackawanna Street
4	May 1 – September 1 Monday – Friday: 5:00 PM – 10:00 PM Saturday: 10:00 AM – 10:00 PM	Cree Lane, Cheyenne Place

*Note: Permit types changed in the middle of roads; therefore, associated roads can be listed multiple times under different permit types.
Source: Site Visit (April 29, 2015)*

GREENBELT PARKING

- Parking near the Greenbelt site includes the publicly accessible pay-to-park Greenbelt Metro parking lot, restricted surface lots, three parking garages, and on-street parking.
- Within a 0.5-mile radius of the Greenbelt site, there are a variety of restricted and unrestricted surface parking lots as well as permitted and non-permitted residential on-street parking.

Figure 5-30: Greenbelt Existing Condition Intersection LOS for AM and PM Peak Hours



5.1.9.10 Traffic Analysis

Section 3.10.4.3 explains the analysis, tools, concepts, and definitions for analyzing the traffic operations as well as the process used to analyze the study area intersections. The 13 Existing Condition intersections analyzed consisted of nine signalized intersections and four unsignalized intersections. The following section provides the traffic analysis results for the Existing Condition. The analysis for the freeways is performed in the Greenbelt TIA (Appendix C).

The 13 Existing Condition intersections analyzed consisted of nine signalized intersections and four unsignalized intersections.

Intersection Operations Analysis

Section 3.10.4.3 introduces the traffic analysis methods used for each study area intersection and which tools were used to obtain the results. Based on the Synchro™ and Critical Lane Volume (CLV) analysis, the majority of study intersections operate at acceptable overall conditions during the morning and afternoon peak hours. However, the following intersection in the study area operates with overall unacceptable conditions:

- Edmonston Road (MD 201) and Powder Mill Road fails (Intersection #13) during the PM peak hour

A total of five signalized intersections experience unacceptable conditions for one or more turning movements. The Greenbelt TIA (Appendix C) contains a more detailed Existing Condition traffic operations analysis.

The overall intersection LOS grade are depicted in figure 5-30 for AM and PM peak hours. Table 5-22 shows the results of the LOS capacity analysis and the intersection vehicle delay for the existing conditions during the AM and PM peak hours.

Intersection Queuing Analysis Method

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. Based on the Synchro™ and SimTraffic™ analysis, two signalized intersections (Edmonston Road [MD 201] and Sunnyside Avenue [Intersection #12] during both peak periods and Edmonston Road [MD 201] and Powder Mill Road [Intersection #13] during both peak periods) 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 Greenbelt TIA (Appendix C) contains a more detailed existing condition traffic queuing analysis.

Table 5-22: Existing Condition AM and PM Peak Hour Operations Analysis

#	Intersection	AM Peak Hour					PM Peak Hour				
		HCM 2000		CLV		Check	HCM 2000		CLV		Check
		Delay (sec/veh)	LOS	Critical Lane Volume	LOS		Delay (sec/veh)	LOS	Critical Lane Volume	LOS	
1	Greenbelt Road (MD 193) & Cherrywood Lane/60th Avenue (Signalized)	30.6	C	1,175	C	Pass	37.4	D	1,279	C	Pass
2	Cherrywood Lane & Breezewood Drive (AWSC)	9.6	A	N/A	N/A	Pass	10.0	A	N/A	N/A	Pass
3	Cherrywood Lane & Springhill Drive (TWSC)	3.5	-	N/A	N/A	Pass	4.6	-	N/A	N/A	Pass
4	Cherrywood Lane & Greenbelt Metro Drive (Roundabout)^a	3.5	A	N/A	N/A	Pass	7.6	A	N/A	N/A	Pass
5	Cherrywood Lane & Ivy Lane (TWSC)	1.8	-	N/A	N/A	Pass	2.7	-	N/A	N/A	Pass
6	Greenbelt Road (MD 193) & 62nd Avenue/Beltway Plaza Driveway (Signalized)	8.2	A	648	A	Pass	19.1	B	1,085	B	Pass
7	Kenilworth Avenue (MD 201) & I-95/I-495 SB Off-ramp (Signalized)	8.5	A	639	A	Pass	8.0	A	572	A	Pass
8	Kenilworth Avenue (MD 201) & I-95/I-495 NB Off-ramp (Signalized)	17.9	B	888	A	Pass	14.7	B	784	A	Pass
9	Kenilworth Avenue (MD 201) & Crescent Road/Maryland SHA Office (Signalized)	18.9	B	875	A	Pass	17.6	B	748	A	Pass
10	Kenilworth Avenue (MD 201) & Ivy Lane (Signalized)	4.4	A	824	A	Pass	2.2	A	799	A	Pass
11	Kenilworth Avenue/Edmonston Road (MD 201) & Cherrywood Lane (Signalized)	10.3	B	884	A	Pass	13.0	B	848	A	Pass
12	Edmonston Road (MD 201) & Sunnyside Avenue (Signalized)	29.3	C	1,317	D	Pass	46.8	D	1,510	E	Pass
13	Edmonston Road (MD 201) & Powder Mill Road (Signalized)	51.9	D	1,487	E	Pass	53.3	D	1685.0	F	Fail

Notes:

AWSC = All-way STOP-Controlled unsignalized intersection

LOS = Level of Service

TWSC = Two-way STOP-Controlled unsignalized intersection (TWSC intersections do not have an overall LOS)

Delay is Measured in Seconds Per Vehicle.

Red cells denote intersections operating at unacceptable conditions.

^a Highway Capacity Software 2010 results

Table 5-23: Prince George's County, Maryland: First and Second Highest Ozone and PM_{2.5} Concentrations, 2010 to 2014

Monitoring Station		Year				
		2010	2011	2012	2013	2014
#240330025 – Bladensburg Fire Department, Prince George's County, MD	24-Hour PM _{2.5} (µg/m ³)	35.7 / 32.4	27 / 25.4	No data available	No data available	No data available
#240330030 – Howard University's Beltsville Laboratory, Prince George's County, MD	8-Hour Ozone (ppm)	0.094 / 0.091	0.094 / 0.091	0.091 / 0.085	0.074 / 0.072	0.071 / 0.066
	24-Hour PM _{2.5} (µg/m ³)	34.4 / 20.3	24.7 / 24.3	25 / 22.3	22.2 / 20.1	18.1 / 17.4
	Annual Average PM _{2.5} (µg/m ³)	17.2 / 14.4	24.3 / 15.1	25 / 22.1	21.7 / 18.5	13.9 / 13.0
#240338003 – Prince George's County Equestrian Center, Prince George's County, MD	8-Hour Ozone (ppm)	0.090 / 0.090	0.095 / 0.092	0.104 / 0.091	0.072 / 0.070	0.076 / 0.074
	24-Hour PM _{2.5} (µg/m ³)	21.4 / 21.3	28.8 / 25.8	24.7 / 23.8	23.5 / 20.4	15.4 / 14.0
	Annual Average PM _{2.5} (µg/m ³)	19.3 / 18.6	15.0 / 13.9	14.8 / 14.7	16.6 / 15.0	15.9 / 13.2
#240339991 – Powder Mill Road, Prince George's County, MD	8-Hour Ozone (ppm)	N/A	0.092 / 0.086	0.097 / 0.085	0.077 / 0.077	0.071 / 0.070

Note: The highest and second highest values are shown. µg/m³ = micrograms per cubic meter; ppm = parts per million; First Value|Second Value = First Highest|Second Highest concentrations
Source: USEPA 2014a

5.1.10 Greenhouse Gas Emissions and Air Quality

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

5.1.10.1 Greenhouse Gases

There are currently no stationary sources for GHG emissions at the Greenbelt site. There are mobile source emissions associated with the portion of Greenbelt Metro Station vehicular traffic using the existing surface parking lot within the site boundary. However, due to incomplete data, including the daily number of vehicles parking within the site boundaries, and the origins of those trips, these emissions cannot be quantified without further study.

5.1.10.2 Air Quality

All sites considered in this EIS are within the same airshed (Air Quality Control Region [AQCR] 47); all airshed-wide indicators are provided in section 3.11.2. Air quality data specific to Prince George's County is provided within this section.

Existing Ambient Air Quality Concentrations

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 four monitoring stations located within Prince George's County that measure ozone (O₃), particulate matter (PM_{2.5}), and meteorological conditions in the County. The highest and second highest values recorded at these stations during the period 2010 through 2014 are shown in table 5-23, which shows a general decline in the pollutant concentration over the last 3 years.

Regional Air Quality Index Summary

As described in section 3.11.2, USEPA calculates the AQI for five major air pollutants regulated by the Clean Air Act (CAA). Table 5-24 displays the recent AQI data for Prince George's County and shows that an AQI over 200 (e.g., very unhealthy) has not been recorded in the area in the 2010-2014 period.

GREENBELT GREENHOUSE GAS EMISSIONS AND AIR QUALITY

- There is broad scientific consensus that humans are changing the chemical composition of the 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 CO₂, in the atmosphere.
- Prince George's County is within the same airshed (AQCR 47) as the JEH parcel.
- An Air Quality Index (AQI) over 200 has not been recorded in the area in the 2010-2014 period.

Table 5-24: AQI Data for Prince George's County, MD

Year	AQI - 101 to 150 Unhealthy for Sensitive Groups (days)	AQI - 151 to 200 Unhealthy (days)
2010	20	0
2011	16	1
2012	16	1
2013	2	0
2014	1	0

Source: EPA (2014a)

UNHEALTHY AIR QUALITY

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

5.1.11 Noise

Noise in the vicinity of the Greenbelt site is regulated by Greenbelt Ordinance Number 11.5. The noise ordinance permits construction noise, including the delivery and operation of machinery from 7:00 AM to 6:00 PM on weekdays unless prior permission to operate on prohibited days or times has been given by the city manager or code official (City of Greenbelt n.d.). Section 11.5-6 establishes maximum sound levels; maximum daytime noise levels are limited to 65 A-weighted decibels (dBA) and maximum nighttime levels (between 9:00 PM and 7:00 AM on weekdays and to 9:00 AM on weekends) are limited to 55 dBA.

The primary noise sources within the vicinity include the vehicular traffic along I-495, the WMATA Metrorail and CSX rail lines to the west, and the WMATA rail yard to the north. The Greenbelt site itself consists of surface parking and undeveloped land. Noise generated at the site consists of vehicular traffic and operations within the existing surface parking area.

Sensitive noise receptors in the study area include the Springhill Lake Elementary School and Franklin Park multi-family residential dwellings, approximately 400 feet to the east, and Hollywood Park, the Al-Huda School, and Hollywood single-family residential dwellings approximately 300 to 400 feet west of the site.

5.1.12 Infrastructure and Utilities

The following sections describe the affected environment for infrastructure and utilities for the Greenbelt site. Infrastructure and utilities include water, wastewater, electric power, natural gas, telecommunications, and stormwater management.

5.1.12.1 Water Supply

Water service for the Greenbelt site is provided by the Washington Suburban Sanitary Commission (WSSC). WSSC provides regionalized water supply and distribution systems for the communities surrounding the District of Columbia in Montgomery and Prince George's Counties and now serves more than 430,000 customers with 5,600 miles of water mains within its distribution network (WSSC 2015b). WSSC operates two water filtration plants: the Potomac Water Filtration Plant and the Patuxent Water Filtration Plant (WSSC 2015b). The Patuxent plant has a maximum production of 100 million gallons per day (MGD) and the Potomac plant can produce up to 283 MGD. Average daily demand on the system is approximately 170 MGD (WSSC 2015c).

The Potomac River serves as WSSC's main raw water supply source, but other active and reserve sources are available. The Little Seneca Creek Dam and Reservoir provide an additional 4.25 billion gallons of storage to supplement the flow of the Potomac River during dry periods when flow in the river would be reduced. Another 30 billion gallons of water is available to the WSSC from the Jennings Randolph Reservoir operated by USACE. Raw water for the Patuxent Water Filtration Plant comes from the Patuxent River with storage provided by reservoirs associated with the Brighton and T. Howard Duckett Dams (WSSC 2015a).

The existing distribution system does not serve the Greenbelt site. The closest water main to the site is a 10-inch main along Cherrywood Lane. An additional 12-inch main along Springhill Drive connects to the Cherrywood Lane main. Based on available mapping and information provided by WSSC, these water mains are connected to a 20-inch main at Edmonston Road, which is ultimately supplied by a 96-inch aqueduct running parallel to the north side of the Capital Beltway. There is an additional 12-inch water main south of the site that is associated with the South Core residential development, which is supplied by a 24-inch water main along Branchville Road (WSSC 2015d).

5.1.12.2 Wastewater Collection and Treatment

Wastewater service for the Greenbelt site would also be provided by WSSC, although there is no service there currently. The current WSSC sanitary service area serves 1.8 million people and consists of 1,000 square miles with 5,400 miles of sewer mains, 47 pump stations, and 6 wastewater treatment plants. All of the wastewater collection facilities within the WSSC service area are separate from the stormwater system. The wastewater treatment plants use advanced biological nutrient removal technologies and have a combined capacity of 89 MGD. Wastewater from this site is treated at the DC Water Blue Plains Advanced Water Treatment Plant (AWTP). Approximately 65 percent of WSSC's total wastewater volume is conveyed to this plant (WSSC 2015e) and approximately 170 MGD of the Blue Plains AWTP capacity has been allocated to WSSC. According to information provided by WSSC, the Greenbelt Metro Station, just west of the site boundary, is currently served by an 8-inch gravity sewer that connects to an 18-inch and 24-inch interceptor on the west side of the railroad tracks. The only connection points for the Greenbelt site are parallel 48-inch and 30-inch trunk sewers located east of the site near Cherrywood Lane. All of these sewers convey wastewater southward, eventually discharging into the Hyattsville pump station (WSSC 2015d).

GREENBELT NOISE

- Noise in the vicinity of the site is regulated by Greenbelt Ordinance Number 11.5, which permits construction noise, including the delivery and operation of machinery from 7:00 AM to 6:00 PM on weekdays unless prior permission to operate on prohibited day or times has been given by the city manager or code official.
- Noise sources in the area include vehicular traffic, the WMATA Metrorail and CSX rail lines, and the WMATA rail yard.

GREENBELT INFRASTRUCTURE AND UTILITIES

- Water and wastewater service for the Greenbelt site is provided by WSSC.
- Electric power for the Greenbelt site is provided by PEPCO, which serves more than 800,000 residences and businesses in the Washington, D.C., metropolitan area.
- Washington Gas is the sole natural gas purveyor in the region.
- Verizon, RCN, Cox, and Comcast are the major telecommunications service providers in the Washington Metropolitan region. The Greenbelt site is reportedly within the Verizon service corridor.
- Stormwater from the site is collected and conveyed to one of two detention ponds on the site that discharge into Indian Creek.

THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

Authorized by the Clean Water Act, this permit program controls water pollution by regulating point sources that discharge pollutants into waters of the U.S.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

is a conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) designed or used for collecting or conveying stormwater.

5.1.12.3 Electric Power

The current electric power service for the Greenbelt site is provided by Potomac Electric Power Company, Inc. (PEPCO). PEPCO, a subsidiary of Pepco Holdings, Inc. (PHI), serves more than 800,000 residences and businesses in the Washington, D.C., metropolitan area with 536,000 customers throughout Maryland (PEPCO 2015a). PHI, through its subsidiaries, also serves customers in Delaware and New Jersey (PHI 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, 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.

There are existing 13.2kV overhead power lines located along Cherrywood Lane. Two substations are in proximity to the site. The Branchville Substation is 69kV and is located approximately 1 to 2 miles to the south, and the Greenbelt TC Substation is 13.2kV located approximately 1 to 3 miles to the southeast.

5.1.12.4 Natural Gas

Washington Gas is the sole natural gas purveyor in the region. There is no natural gas service currently serving the site. The closest gas mains are a 6-inch main located on Cherrywood Lane (along the eastern edge of the site), a 4-inch main on Lackawanna Street, and a 4-inch main at the Greenbelt Metrorail Yard. Based on information obtained from Washington Gas, the 6-inch main has an operating pressure of 20 pounds psi and the two 4-inch mains have operating pressures of 50 psi (Washington Gas 2015b).

5.1.12.5 Telecommunications

Verizon, RCN, Cox, and Comcast are the major telecommunications service providers in the Washington Metropolitan region. However, it should be noted that more than 100 companies have applied for and received authority to offer service in Maryland. Verizon is currently providing cable service in many areas of the County (Prince George's County 2013).

The Greenbelt site is reportedly within the Verizon service corridor. Secure fiber service parallels the Metrorail adjacent to the site within 500 feet to the west.

5.1.12.6 Stormwater Management

Prince George's County Department of the Environment, Stormwater Management Division, enforces regulations regarding stormwater management issues for Prince George's County, while the Department of Public Works and Transportation maintains the infrastructure. Stormwater from the site is collected and conveyed to one of two detention ponds on the site that discharge into Indian Creek.

In 2015, Prince George's County entered into the Clean Water Partnership agreement with Corvias Solutions for a stormwater management public-private partnership designed to assist the County in meeting its obligations under the Federal Chesapeake Bay Act. This agreement includes a \$100 million investment by the County over the first 3 years to retrofit the existing stormwater management systems over approximately 4,000 acres with the private sector partner, Corvias, managing the design, construction, and long-term maintenance for the next 30 years (Prince George's County 2015). The extent of improvements associated with this County-wide infrastructure improvement within the Greenbelt site are unknown at this time.

Prince George's County is considered a large municipal separate storm sewer system (MS4) regulated area and has a Phase I National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater permit (11-DP-3314 MD0068284) for stormwater discharges from the MS4. This permit requires the County to reduce stormwater runoff related pollutants through watershed mapping; watershed assessments; management programs for stormwater, erosion and sediment control, illicit discharges; public outreach; restoration projects; and funding (MDE n.d.). As a smaller municipality, Greenbelt has a Phase II NPDES Municipal Stormwater permit requiring implementation of "public education and outreach; public participation and involvement; illicit discharge detection and elimination; construction site runoff control; post-construction runoff control; and pollution prevention/good housekeeping" (MDE n.d.).

5.2 Environmental Consequences

The following sections describe the environmental consequences of the Greenbelt Alternative. Both direct and indirect impacts are evaluated under the Greenbelt Alternative for each resource topic. The evaluation of these impacts uses the indirect impacts under the No-action Alternative as a baseline for comparison. Under the No-action Alternative at Greenbelt, the WMATA-owned portion of the site would be redeveloped by a private exchange partner as part of a mixed-use community at the Greenbelt Metro Station. The remainder of the site would remain in state ownership. While the precise time-frame for construction is unknown, it is assumed to occur in tandem with the construction of the Greenbelt Alternative.

To comprehensively understand the impacts of the Proposed Action, the impacts described in this chapter would be paired with the indirect impacts caused by the future redevelopment of the JEH parcel. Descriptions of the No-action Alternative as well as the Greenbelt Alternative and the RFDSs at the JEH parcel can be found in section 2.4.4. The impacts at the JEH parcel are described in section 4.2.

5.2.1 Earth Resources

The following sections describe the environmental consequences for earth resources under both the No-action Alternative at Greenbelt and the Greenbelt Alternative.

EARTH RESOURCES ASSESSMENT OF SIGNIFICANCE

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

5.2.1.1 Geology and Topography

No-action Alternative

Under the No-action Alternative at the Greenbelt site, there would be no long-term measurable impacts to topography because, although the entirety of the Greenbelt Metro Station would be redeveloped as a mixed-use community, the overall topography of the site would remain unchanged. There would be indirect, short-term, adverse impacts during the construction period, as the existing topography would be regraded to accommodate the new development.

Land disturbance associated with development of a mixed-use community at the Greenbelt site would indirectly impact geology. Demolition and construction activities would impact geology primarily through excavation, grading, leveling, filling, compaction, and the drilling of footers for new infrastructure. The geologic features at the site have been previously disturbed and their natural composition altered by previous surface mining and the introduction of fill to construct the Greenbelt Metro Station parking lot, and as such, the redevelopment of the site into a mixed-use community would not affect any features that have not been previously impacted. There is the potential for impacts to undisturbed geologic features for land adjacent to the current easterly extent of disturbance, depending on the configuration of the final site plan.

Greenbelt Alternative

Under the Greenbelt Alternative, there would be no measurable long-term or short-term impacts to topography, as the Greenbelt Alternative would impact topography in the same manner as the mixed-use development would under the No-action Alternative.

Similarly, land disturbance associated with the consolidation of the FBI HQ at the Greenbelt site would directly impact geology in the same manner as the mixed-use development would under the No-action Alternative. While the footprint for the consolidated FBI HQ campus would be largely within previously disturbed areas, there is the potential for impacts to undisturbed geologic features for an approximately 2-acre strip of land adjacent to the current easterly extent of disturbance. This disturbance would be limited in magnitude to impacts to subsurface features associated with the construction of security fencing,

Transportation Mitigations

There would be no measurable long-term impacts to topography associated with required traffic mitigation measures, as shown in figure 5-47, because the recommended improvements are not expected to noticeably alter existing topography. There would be direct, short-term impacts to topography associated with any regrading and disturbance to slopes along roadways requiring improvements during construction.

Construction along approximately 4,300 linear feet of roadways requiring substantial widening, including along Edmonston Road and Powder Mill Road as shown in figure 5-47, would have the potential to disturb intact geologic features located adjacent to the current limits of disturbance. In total, widening would occur along approximately 4,300 linear feet of roadway, of which approximately 2,950 linear feet would be associated with the widening of Edmonston Road. Therefore, impacts to geology associated with traffic mitigation measures would be direct, long-term, and adverse. Over the long-term, it is expected that the engineering and design of the improvements would minimize any continuing adverse impacts to the extent that they are not measurable.

GREENBELT GEOLOGY & TOPOGRAPHY ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: Indirect, short-term, adverse impacts to topography. Indirect, long-term, adverse impacts to geology.

Greenbelt Alternative: No measurable impacts to geology or topography.

**GREENBELT SOILS
ENVIRONMENTAL CONSEQUENCES
SUMMARY**

No-action Alternative: Indirect, short-term, adverse impacts.

Greenbelt Alternative: Direct, short-term, adverse impacts.

5.2.1.2 Soils

No-action Alternative

Under the No-action Alternative at the Greenbelt site, land disturbance associated with development of a mixed-use community would indirectly impact soils during the construction period. Construction activities would temporarily compact, expose, disturb, and modify the structure of soils during earth-moving activities, including excavation, grading, leveling, filling, and compaction. This disturbance would temporarily expose soils and potentially lead to increased erosion from stormwater runoff. The mixed-use developer would be responsible for complying with all required permits and regulatory requirements as described in section 3.3.4, which would minimize the potential for adverse impacts to soils stemming from soil erosion. Stormwater runoff carrying sediment could indirectly discharge into Indian Creek, leading to impacts to water quality within that waterway as well as to the Anacostia and Potomac Rivers, of which it is a tributary. The footprint for the mixed-use development would be largely confined to the previously disturbed udorthent, loamy soil association, which would minimize impacts to soils and would not limit building potential. There is the potential for impacts to occur for undisturbed Zekiah and Issue soils on small portions of the site adjacent to the current easterly extent of disturbance. These soils are more susceptible to erosion and flooding. Over the long term, there would be no measurable impacts because there would be a minimal change in the parcel's soil characteristics. In summary, under the No-action Alternative, impacts to geology would be indirect, short-term, and adverse. There would be no long-term measurable impacts, as the operation of the mixed-use development would not alter existing soil characteristics.

Greenbelt Alternative

Land disturbance associated with development of a consolidated FBI HQ at the Greenbelt site would directly impact soils in the same manner as the mixed-use development would under the No-action Alternative. There is an increased risk of adverse soil impacts for approximately 0.25 acre of Zekiah and Issue Soils Complex that would be disturbed by land clearing and construction of security fencing along the eastern perimeter. As required for Federal construction projects, the development of an erosion and sedimentation control plan, obtaining necessary and applicable permits, and implementing BMPs would minimize sediment loading and would work to mitigate and reduce any short-term impacts.

In addition to the short-term impacts from construction activities, the establishment of landscaped and vegetated areas would reduce the overall amount of impervious surface and erosion potential at the site and could result in improved soil productivity. Based on the conceptual site plans, there would be a 2.6 percent increase in the amount of pervious surface across the entire site. However, when considering only the previously developed portion of the site, there would be an 11.6 percent increase in pervious surface cover. This increase in pervious surface cover creates opportunities for improving infiltration and soil productivity.

Transportation Mitigations

Construction along roadways requiring substantial widening, including along Edmonston Road and Powder Mill Road as shown in figure 5-47, would disturb soils located adjacent to the current limits of disturbance, resulting in direct, short-term, adverse impacts. The impacts to soils in these areas would be minimized because construction would occur, when possible, within previously disturbed areas adjacent to existing roadways. In total, widening would occur along approximately 4,300 linear feet of roadway, of which approximately 2,950 linear feet are associated with the widening of Edmonston Road. Over the long term, it is expected that the engineering and design of the improvements would minimize any continuing adverse impacts to the extent that they are not measurable.

5.2.2 Water Resources

The following sections describe the environmental consequences for water resources under both the No-action Alternative at Greenbelt and the Greenbelt Alternative.

WATER RESOURCES ASSESSMENT OF SIGNIFICANCE

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

5.2.2.1 Surface Water

No-action Alternative

Under the No-action Alternative at the Greenbelt site, there could be both short- and long-term impacts to surface water. During construction, soils would be temporarily exposed, which would increase the potential for the transport of sediment into Indian Creek and Narraganset Run. Operation of construction equipment would increase the likelihood of accidental leaks or spills of fuel, lubricants, or other materials which could contaminate nearby surface water. Soil disturbance and the use of construction equipment would increase the potential for the transport of sediments or contaminated solids into surrounding surface waters and increase sediment loading.

Construction activities would be subject to stormwater, sediment and erosion control, and other regulations designed to avoid adverse impacts to surface water to the extent they are not measurable. Because the extent of land disturbance on-site during construction would be greater than 5,000 square feet (SF), sediment and erosion control and stormwater management BMPs as required under NPDES construction activity permits, including non-structural BMPs and other environmental site design techniques, would be required. The Chesapeake Bay Total Maximum Daily Load for Maryland outlines targets

which limit allowable sediment loads in order to meet state water quality standards. Sediment targets would be met through a focus on the implementation strategies outlined in Maryland's Chesapeake Bay Watershed Implementation Plan.

Over the long term, it is assumed that minimal re-engineering of Indian Creek would be required because of the distance between the easterly limit of disturbance and the existing stream channel, based on the current mixed-use development site plan. Two stormwater ponds, one located within the Greenbelt site boundary and the other located to the south of the Greenbelt site would be permanently removed to accommodate the mixed-use development and the relocation of WMATA parking to a new parking structure, respectively. However, the mixed-use development would be required to implement a stormwater management system in order to obtain state and local development permits, which would minimize the potential for long-term, adverse impacts to the extent they are not measurable.

Greenbelt Alternative

Under the Greenbelt Alternative, there would be no measurable short-term impacts to surface water, as the Greenbelt Alternative would impact surface water in the same manner as the mixed-use development would under the No-action Alternative. Over the long term, there could be adverse impacts to Indian Creek resulting from any engineering measures that would be implemented along the secure perimeter, adjacent to Indian Creek, to control erosion and minimize the channel shifting, a characteristic of braided stream channels. Stream mitigation, if necessary, would be compliant with the requirements of Section 404 of the CWA. It would focus on functional replacement of lost streams and riparian buffers. Similar to wetlands, stream mitigation uses mitigation banks, in-lieu-fee programs, or permitted developed projects. General project types include stream restoration, establishment, enhancement (including enhancement of riparian buffers), and preservation. Mitigation involving riparian buffers should use native species and buffer widths adequate to address known water quality or aquatic habitat impacts.

In addition to the potential for adverse impacts, long-term beneficial impacts would be expected. Due to the setback distances required for an ISC level V facility, there would be a notable increase in pervious surface, as compared to the No-action Alternative. The conceptual site plans would increase the amount of pervious surface on the site by 1.6 acres, or 2.6 percent of total site acreage, resulting in a total of 40.5 pervious acres, or 66.8 percent of total site acreage from current conditions. The amount of pervious surface under the No-action Alternative is currently unknown due to the preliminary nature of the site plans for the mixed-use development. However, given the density of the proposed development under the No-action Alternative, it can be concluded that the benefits to surface water accruing from the overall improvement in stormwater infiltration and reduction of sediment and pollution loads in Indian Creek is greater under the Greenbelt Alternative than the No-action Alternative.

In addition to the permitting and regulatory requirements described in section 3.3.4, the Greenbelt Alternative would be required to comply with section 438 of the Energy Independence and Security Act (EISA), which requires runoff leaving a project site with a footprint greater than 5,000 SF to have the same temperature, rate, volume, and flow duration as predevelopment stormwater runoff, to the maximum extent technically feasible (USEPA 2009).

Overall, the context and intensity of short-term impacts to surface water under the Greenbelt Alternative would be similar to the impacts under the No-action Alternative, resulting in no measurable short-term impacts. Compliance with NPDES permits, stormwater and sediment and erosion control plans, and implementation of BMPs would minimize adverse impacts to surface waters to the extent they are not measurable.

Transportation Mitigations

Construction along approximately 4,300 linear feet of roadways requiring substantial widening, including along Edmonston Road and Powder Mill Road as shown in figure 5-47, would have the potential to adversely impact surface water during construction. Indian Creek, approximately 500 feet west of Edmonston Road, runs parallel to Edmonston Road and crosses under Sunnyside Road. Sediment loading and pollution of Indian Creek, which flows into the Anacostia and Potomac Rivers, is possible; however compliance with NPDES permits, stormwater and sediment and erosion control plans, and implementation of BMPs would minimize adverse impacts to surface waters to the extent that they are not measurable.

Over the long term, it is expected that the engineering and design of the improvements would minimize any continuing adverse impacts to the extent that they are not measurable.

GREENBELT SURFACE WATER ENVIRONMENTAL CONSEQUENCES SUMMARY

-  No-action Alternative: No measurable impacts
-  Greenbelt Alternative: Direct, long-term, beneficial impacts.

GREENBELT HYDROLOGY ENVIRONMENTAL CONSEQUENCES SUMMARY

 **No-action Alternative:** Indirect, short-term, adverse impacts.

 **Greenbelt Alternative:** Direct, short-term, adverse, and direct, long-term, beneficial impacts.

GREENBELT GROUNDWATER ENVIRONMENTAL CONSEQUENCES SUMMARY

 **No-action Alternative:** No measurable impacts.

 **Greenbelt Alternative:** Direct, long-term, beneficial impacts.

GREENBELT WETLANDS ENVIRONMENTAL CONSEQUENCES SUMMARY

 **No-action Alternative:** Indirect, short-term, adverse impacts to wetlands.

 **Greenbelt Alternative:** No measurable impacts.

5.2.2.2 Hydrology

No-action Alternative

Under the No-action Alternative at the Greenbelt site, there would be indirect, short-term, adverse impacts to hydrology. Construction of the mixed-use community would disturb the entirety of the existing surface parking and temporarily alter existing stormwater infiltration and drainage patterns. However, compliance with state and local stormwater management regulations, and the implementation of stormwater management plans would mitigate the potential for any adverse impacts to the extent they are not measurable. There would be no measurable short- or long-term impacts to the surface hydrology of Indian Creek, because the mixed-use community would not disturb the stream channel.

Greenbelt Alternative

Under the Greenbelt Alternative, construction activities would directly impact hydrology in the same manner as they would under the No-action Alternative. Over the long term, there would be direct, beneficial impacts to hydrology under the Greenbelt Alternative. The movement and distribution of water into and out of Indian Creek would be altered. The addition of pervious land would allow for an increase in stormwater infiltration. Furthermore, compliance with Section 438 of the EISA would improve hydrologic processes by increasing stormwater infiltration and decreasing the rate and amount of surface runoff. Compliance may include the removal or alteration of the 115 foot culvert that outlets directly from the site to Indian Creek and/or a 45 foot box culvert that is approximately 150 feet to the east of the site. Both of these outfalls currently conveys stormwater into Indian Creek from the adjacent upland area. Given the close proximity of the adjacent mixed-use development and Capital Beltway ramps, coordination with the mixed-use developer, WMATA, and Maryland SHA would be necessary to coordinate stormwater management strategies.

Transportation Mitigations

Construction along approximately 4,300 linear feet of roadways requiring substantial widening, including along Edmonston Road and Powder Mill Road as shown in figure 5-47, would have the potential to adversely impact hydrology during construction as a result of temporary changes and interruptions to existing hydrology. The potential impacts to hydrology in these areas would be minimized because construction would occur within previously disturbed areas adjacent to existing roadways and would be subject to permitting and regulatory requirements that would minimize adverse impacts to water quality. Therefore, impacts to hydrology associated with traffic mitigation measures would be direct, short-term, and adverse. Over the long term, the implementation of recommended traffic mitigations are not expected to alter hydrologic processes within the study area.

5.2.2.3 Groundwater

No-action Alternative

Under the No-action Alternative at the Greenbelt site, there could be indirect, short-term, adverse impacts to groundwater. Construction of the mixed-use community has the potential to disturb groundwater and introduce contaminants. The presence of shallow groundwater within the site may require dewatering operations to facilitate excavation and grading activities during construction. Potential impacts to local groundwater resources include modification of groundwater levels through drawdown or diversion of flow. Under groundwater quality standards, MDE or local agencies issue permits for activities with the potential to introduce contaminants to groundwater. These include permits for groundwater discharge, hazardous and solid waste management, and stormwater management (MDE 2012). If the construction actions at the Greenbelt site require discharge of groundwater from dewatering activities, authorization under an NPDES permit and applicable requirements related to water quality concerns would be required. Compliance with the NPDES General Construction Permit, stormwater pollution prevention plan, and stormwater BMPs would prevent or minimize possible pollutant loading to groundwater and protect groundwater quality during construction. Implementation of BMPs and low-impact development measures would improve groundwater quality and allow for stormwater infiltration and groundwater recharge. There would be no measurable long-term impacts to groundwater as groundwater resources would not be impacted outside of the construction period.

Greenbelt Alternative

Under the Greenbelt Alternative, construction activities would directly impact groundwater in the same manner as they would under the No-action Alternative. Construction of a consolidated FBI HQ would be subject to the same permitting and regulatory requirements. Over the long term, groundwater recharge and water quality would be improved due to the increase in pervious surface and compliance with EISA requirements, as described in the section 5.2.2.2.

Transportation Mitigations

Construction along approximately 4,300 linear feet of roadways requiring substantial widening, including along Edmonston Road and Powder Mill Road as shown in figure 5-47, could have the potential to adversely impact shallow groundwater resources. The potential impacts in these areas would be minimized because construction would occur within previously disturbed areas adjacent to existing roadways and would be subject to permitting and regulatory requirements that would minimize adverse impacts to water quality. Over the long term, the implementation of recommended traffic mitigations are not expected to alter groundwater within the study area.

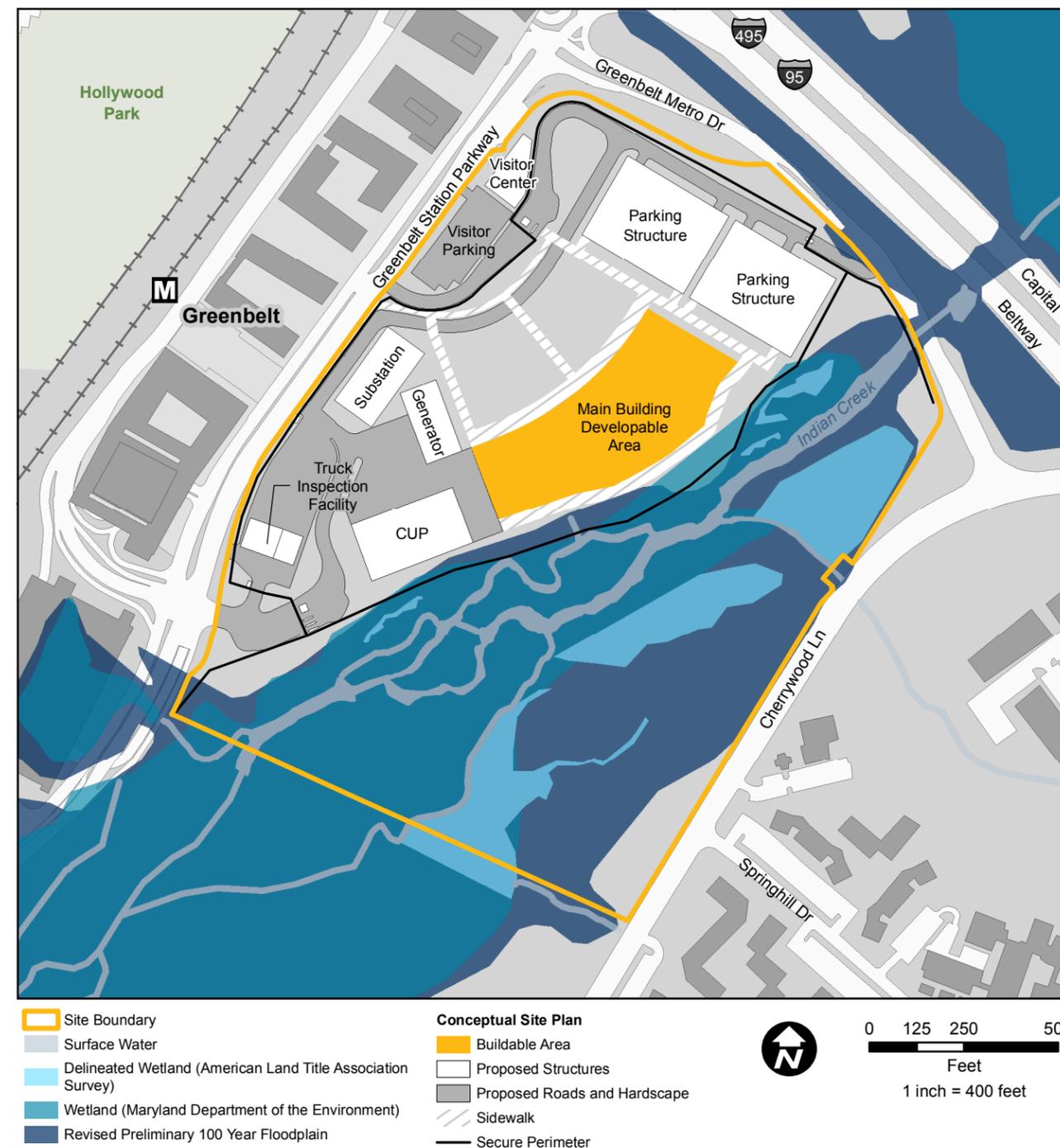
5.2.2.4 Wetlands

No-action Alternative

Under the No-action Alternative at the Greenbelt site, there would be indirect, short-term, adverse impacts to wetlands. During construction, the use of heavy equipment adjacent to wetlands could result in soil compaction, soil disturbance, and sedimentation with the wetland and buffers, resulting in a degradation of wetland functions. Construction would also disturb soils and increase the potential for erosion and transport of sediment via overland stormwater runoff into adjacent wetlands. Temporary adverse impacts to wetlands during construction would be minimized through the implementation of a sediment and erosion control plan and BMPs. All wetlands that would be temporarily disturbed would be restored to their original, pre-construction contours and revegetated upon completion of construction.

Over the long term, there is potential for disturbing or altogether removing small portions of the wetlands or the 25 foot nontidal wetland buffers within the Greenbelt site, adjacent to the current easterly limits of disturbance. If existing wetlands are disturbed or removed by the mixed-use development, the developer would be required to obtain a Waterway and 100-Year Floodplain (Nontidal Wetlands and Waterways) permit and State Section 401 through MDE, and Section 404 permit certification through USACE, as described in section 3.3.4. Permanent, unavoidable loss of wetland acreage or functions is mitigated through creation, restoration, preservation, or enhancement of nontidal wetlands as described in section 3.3.4.

Figure 5-31: Greenbelt Alternative Conceptual Site Plan and Water Resources



NWI wetlands, current effective floodplain, and FFRMS floodplain not shown on this map in order to enhance readability. Please see figures 5-6 and 5-7 for this information.

Sources:
ESRI (2013), GSA (2013), FEMA (2013), NHD (2013)
Prince George's County (2013)

Figure 5-32: Wetlands in the Vicinity of Edmonston Road and Sunnyside Avenue Greenbelt Traffic Mitigations



Build with Mitigation

- Major Intersection Improvements
- Mainline Widening
- Wetland (Maryland Department of the Environment)
- Wetland (National Wetlands Inventory)



0 250 500 1,000
Feet
1 inch = 1,000 feet

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

Greenbelt Alternative

Under the Greenbelt Alternative, construction of a consolidated FBI HQ campus would directly impact wetlands in the same manner as they would under the No-action Alternative. Over the long term, the Greenbelt Alternative would result in no measurable impacts to wetlands based on the most current wetland delineation. All delineated wetlands on the Greenbelt site, including the 25-foot nontidal wetland buffer required by MDE, are outside of the secure perimeter, as shown in figure 5-31. However, future delineations performed during the growing season may indicate an increase in the wetlands along the current easterly extent of planned site disturbance. If future wetland surveys identify additional wetlands, the permitting requirements and mitigation strategies described in section 3.3.4 would apply.

Transportation Mitigations

Construction along approximately 4,300 linear feet of roadways requiring substantial widening, including along Edmonston Road and Powder Mill Road as shown in figure 5-47, would have the potential to adversely impact wetlands both during construction and over the long term. Direct, short-term, adverse impacts associated with stormwater related sediment or pollutant loading may occur in wetlands adjacent to the construction areas. The potential impacts in these areas would be minimized to the extent they are not measurable by compliance with applicable permitting and regulatory requirements, as described in section 3.3.4.

There is a high potential for direct, long-term, adverse impacts to wetlands as a result of transportation mitigation and road widening along Edmonston Road, north of Cherrywood Lane. NWI and MDE data show large expanses of palustrine forested wetlands associated with Indian Creek and Beaverdam Creek adjacent to the proposed roadway improvements, as shown in figure 5-32. More precise wetland delineations would be required to quantify the amount of wetlands impacted by these road improvements. If it is determined that wetlands would be impacted as a result of the recommended transportation mitigations, state and Federal permits and associated mitigation would be required, as described under the No-action Alternative at Greenbelt and in section 3.3.3.4.

5.2.2.5 Floodplains

No-action Alternative

Under the No-action Alternative at the Greenbelt site, no measurable impacts to floodplains would occur because the footprint of the mixed-use development at the Greenbelt site would avoid the floodplains associated with Indian Creek. This assumes that final development approvals would be obtained based on the base flood elevations recorded by the Prince George's County DPIE, which are similar to FEMA's Revised Preliminary Floodplain.

Greenbelt Alternative

Under the Greenbelt Alternative, no buildings would be placed within the 100-year floodplain, but the construction footprint would include a secure buffer adjacent to the eastern side of the Main Building with a clear zone, perimeter road, and perimeter fence, as shown in figure 5-31. An additional fence paralleling Greenbelt Metro Drive would also be placed along the northeastern portion of the site boundary. Portions of the perimeter fence and associated clear zone and road would be placed within and directly impact the floodplain. Approximately 0.81 acre of 100-year floodplain, according to the revised preliminary FIRM, would be within the secure perimeter and subject to alteration. The area would be cleared of all vegetation except low grasses and possibly graded and covered with an impervious surface. This would directly, however minimally, impact the ability of the floodplain to provide storage capacity for flood waters, minimize erosive processes and sediment transport, and attenuate flood flows. Without mitigation it is possible that floodplain development could also increase risks to human safety and property.

Any increase in flooding or creation of flood risks is prohibited under compliance with requirements for Federal facilities. The construction of the secure perimeter fence would temporarily disturb the floodplain surrounding the fence through compaction and exposure of soils to potential erosive processes during construction. The fence would be constructed with materials in a manner that would be able to withstand a flood event and would not impede the flow of flood waters. Direct, long-term, adverse impacts to the floodplain would occur on the outer edge of the floodplain and would not bisect or reduce the hydrologic or hydraulic connection between two parts of the floodplain. Impacts would be minimized and offset through implementation of BMPs and mitigation measures.

Over the long term, adverse impacts would result from the disruption of floodplain functions and values through the potential addition of impervious surfaces, vegetation clearing, and soil disturbance within the floodplain. In addition to GSA's 8-step process described in section 3.3.4, actions within a floodplain would require a permit from FEMA, MDE, or Prince George's County. The permitting process for floodplain development in Prince George's County is administered by the Department of Permitting, Inspections, and Enforcement and requires a 100-Year Floodplain Review Plan and review. This process for the proposed floodplain impacts related to actions at the Greenbelt site is ongoing. The first step in the process, an existing 100-year floodplain inquiry, was submitted in February 2015. The second and third steps, which have not been completed, include a Request for Review of Consultant Prepared Model of Existing or Proposed 100-Year Floodplains and an Existing or Proposed 100-Year Floodplain Delineation. Depending on project details, there may be additional site approvals and permits that the exchange partner would be required to obtain. Permitting requirements would minimize impacts to floodplains and reduce potential flood risks and hazards.

If the Greenbelt Alternative is identified as the Preferred Alternative prior to the legal revision of the Prince George's County FIRM, then the exchange partner would request a letter of map revision to designate the revised preliminary floodplain as the official effective FEMA floodplain. According to the Prince George's County floodplain ordinance, any proposed development that would reduce or modify the effective FEMA 100-year floodplain, including revisions to FEMA floodplain boundaries or an increase in base flood elevations must have the approval of FEMA and the Prince George's County Department of Permitting, Inspections, and Enforcement prior to development. Revisions must be based on hydrologic and hydraulic analysis using existing floodplain models and standard engineering practices.

Compliance with standards and criteria of the National Flood Insurance Program, including the use of floodproofing and other flood protection techniques, would minimize or prevent flood risks and hazards. Reduction and minimization of potential damage due to flooding could take the form of a 100-foot setback from any FEMA mapped stream or a 50-foot setback from an unmapped stream. Construction of flood control projects would minimize human safety and property risks. Floodplain mitigation to offset unavoidable impacts would replace lost functions and values and prevent the loss of human life, property, and increased flood hazard risks.

In Prince George's County, development within the floodplain requires that lost or disturbed floodplain storage be offset with compensatory storage at a 1:1 ratio. Furthermore, an analysis must be performed to demonstrate that the development would not have any impact to the flood elevations either upstream or downstream. The Prince George's Floodplain Ordinance requires post-developacfrement flood carrying capacity to remain the same as existing levels.

GREENBELT FLOODPLAINS ENVIRONMENTAL CONSEQUENCES SUMMARY

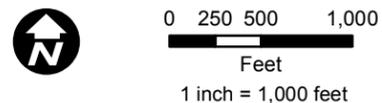
No-action Alternative: No measurable impacts.

Greenbelt Alternative: Direct, short- and long-term, adverse impacts.

Figure 5-33: Floodplains in the Vicinity of Edmonston Road and Sunnyside Avenue Greenbelt Traffic Mitigations



- Build with Mitigation**
- Major Intersection Improvements
 - Mainline Widening
 - Current Effective 100 Year Floodplain
 - Revised Preliminary 100 Year Floodplain



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

Transportation Mitigations

Construction along approximately 4,300 linear feet of roadways requiring substantial widening, including along Edmonston Road and Powder Mill Road as shown in figure 5-47, would have the potential to adversely impact floodplains both during construction and over the long term. Direct, short-term, adverse impacts associated with stormwater related sediment or pollutant loading may occur in floodplains adjacent to the construction areas, and may increase potential flood hazards and adversely impact floodplain functions upstream or downstream of the site. The potential impacts in these areas would be minimized by compliance with applicable permitting and regulatory requirements, as described in section 3.3.4.

There is a high potential for direct, long-term, adverse impacts to floodplains as a result of transportation mitigation and road widening along Edmonston Road, north of Cherrywood Lane. Both the existing FEMA FIRM and the revised preliminary floodplain show large expanses of the 100-year flood associated with Indian Creek and Beaverdam Creek adjacent to the proposed roadway improvements, as shown in figure 5-33. If it is determined that the 100 year floodplain would be impacted as a result of the recommended transportation mitigations, state and Federal permits and associated mitigation would be required, as described in section 3.3.3.4.