

Section 3

Appendix

Appendix A. Glossary of Terms

ABSORPTION

The rate at which newly built space in a given area is either leased or sold during a given time period.

ACTIVE TRANSPORTATION

Any form of getting around that is human-powered, such as walking, rolling, or cycling. Active transportation contributes to positive health outcomes, as well as to environmental sustainability by reducing the use of automobiles.

AREA MEDIAN INCOME (AMI)

AMI represents the midpoint in the distribution of household incomes within a certain geographic region, such as a city, county or metropolitan statistical area. The United States Department of Housing and Urban Development (HUD) publishes annual AMI levels for regions, adjusted for family size. The HUD-provided AMI is used to determine applicants' eligibility for both federally and locally funded housing programs where participation is dependent on income levels.

BIG-BOX-RETAIL

A big-box retailer is a retail store that occupies an enormous amount of physical space and offers a variety of products to its customers. These stores achieve economies of scale by focusing on large sales volumes.

COMPOUND ANNUAL GROWTH RATE (CAGR)

A way to look at accumulated growth on an annual basis within a defined period of time, as opposed to simple growth, which measures total growth over a defined period of time.

CUL-DE-SAC

A street or passage that is closed at one end.

HOUSING-COST BURDEN & EXTREME HOUSING-COST BURDEN

HUD defines housing-cost burden as households that pay more than 30 percent of their monthly income on gross housing costs such as rent, utilities, mortgage payments, and/or homeowners/rental insurance, and as a result, may have difficulty affording necessities such as food, clothing, transportation, and medical care. Extreme housing-cost burden refers to households that pay 50 percent or more of their monthly household income on gross housing costs, often leaving them with very little to cover remaining expenses. Both renters and homeowners can experience housing cost-burden.

DELIVERY

The completion of a new building within a given market.

DEMAND

The amount of goods or services a consumer wants to purchase within a market during a specific time period. For example, a city's multifamily demand refers to how many people want to rent or purchase apartments in that city.

DENSITY

A measure of the intensity of a given land use, usually measured as the ratio of a particular land use per given area of land. For example, a neighborhood may have a maximum residential density of five residential units per acre, or a downtown may have a high density of office buildings, if office buildings are the predominate land use within the downtown.

DEVELOPER RETURN

The minimum financial return required by a developer to complete a project.

DRIVESHED

A driveshed is the area encompassed by a driving distance (a 10-minute drive, or a defined distance) from a single location. They may be drawn as perfect circles, but in practice drivesheds have irregular shapes because they cover the actual distance driven, not the straight-line distance.

ENTERTAINMENT DISTRICT

An arts district with a high concentration of movie cinemas, performance theaters, or other entertainment venues that may either be officially designated by local governments through zoning regulations or by public and private investment in urban design and branding.

EUCLIDEAN ZONING

An approach to zoning in which a city, town, or other geography is divided into areas in which particular kinds of land uses are permitted. For example, in a commercial zone, only commercial uses would be permitted.

FORECLOSURE

A legal process that transfers the right of home ownership from the owner to the bank or lender after the owner defaults on their mortgage payments. Once the owner receives a notice of default, the owner has an opportunity to make up the missed mortgage payments, get out of default, and continue making monthly payments before the bank officially seizes ownership of the home.

GREENFIELD

An undeveloped site or parcel that is either used for agriculture or landscape design, or otherwise undeveloped. Greenfields are typically sites earmarked for urban development.

GREAT RECESSION

An estimated 18-month period of national economic downturn that is widely considered to be the worst U.S. economic crisis since the Great Depression of the 1930s. Between late 2007 to 2009, the Great Recession had severe and extremely adverse impacts on the United States' economy, including a loss of nearly \$8 trillion of stock value, an unemployment rate that rose to a peak of 10 percent in October 2009, a home foreclosure rate that increased by 120 percent from 2007 to 2008, and a \$9.8 trillion loss in American wealth due to stark declines in home values and retirement savings.¹

INFILL

The repurposing of vacant or underutilized land in established neighborhoods to prepare these sites for redevelopment or new development in an effort to increase urban density and foster economic growth. Infill development is a key strategy for helping cities revitalize neighborhoods with many vacant lots, and is also an important way to encourage density.

MARKET-RATE MULTIFAMILY APARTMENTS

An apartment building that has no rent restrictions, allowing the landlord to rent the housing unit at the maximum amount the local market can withstand.

MASTER-PLANNED DEVELOPMENT

A large-scale residential neighborhood developed by private developers who decide the recreational and commercial amenities provided as part of the residential neighborhood, such as swimming pools, lakes, parks, restaurants, and retail stores. Some master-planned developments include additional facilities such as schools, office space, large shopping centers, and hotels.

NATURALLY OCCURRING AFFORDABLE HOUSING (NOAH)

Housing that is priced by market forces at levels that are affordable to low-income residents. Housing is traditionally considered affordable if the total housing cost (rent or mortgage plus utilities) for the household represents no more than 30 percent of its income. NOAH housing is typically found in older properties, and often makes up a significant portion of a jurisdiction's affordable housing stock, in addition to publicly-subsidized housing.

PRODUCT

The available supply of a residential or commercial asset type, e.g., new housing product refers to newly constructed apartments, townhomes, and single-family homes.

RENTABLE SQUARE FEET

The total square footage of a building a tenant leases from a landlord.

¹ Merle, Renae. "A Guide to the Financial Crisis—10 years later." The Washington Post. 10 September 2018.

RETAIL GAP

The gap between demand and supply within a given market that occurs when residents' demand for goods exceeds available supply, resulting in consumers leaving the market's retail area to shop elsewhere.

SENIOR-LIVING MULTIFAMILY APARTMENTS

An apartment building that is age-restrictive, typically designed for senior residents aged 55 and older. Senior-living apartment buildings can be either independent living communities or assisted care communities. Independent living communities are catered to seniors who do not require assistance with daily activities or 24/7 medical care. Assisted living communities are catered to seniors who require assistance with daily activities such as medication, eating, and bathing.

STOCK

The existing inventory of a residential or commercial asset type, e.g., all of the office buildings in a neighborhood represent that neighborhood's office stock.

SUPPLY

The amount of goods or services that are available to consumers within a market at a given price during a specific time period.

TRAVELSHED

A travelshed is the set of all the destinations that can be reached from a location within a specified time. Travel sheds are valuable both for visualizing and analyzing access to key services and destinations such as schools, transit stations, hospitals, community centers, parks, retail hubs, and so forth. May be referred to according to the mode of travel (i.e., walkshed).

TRANSIT-ORIENTED DEVELOPMENT (TOD)

TOD includes a mix of commercial, residential, office, and entertainment centered around, or located near, a transit station. Dense, walkable, and mixed-use development near transit attracts people and adds to vibrant, connected communities.

UNMET SPENDING POTENTIAL

An area's unmet spending potential represents the total dollar value of the retail gap, demonstrating how much money consumers are spending on retail outside of their area. The total dollar value of unmet spending potential represents the amount of money the given market would likely receive if its retail supply met demand.

WHITE FLIGHT

This term refers to the large-scale migration of White city dwellers out of urban areas, particularly those with significant racial minority populations. This term arose during the 1950s and 1960s, when many American cities saw the exodus of White residents into developing suburbs.

WALKSHED

A walkshed is the area encompassed by a walking distance (a 5-minute walk or a defined distance mile) from a single location. Although they may be drawn as perfect circles, in practice walksheds have irregular shapes because they cover the actual distance walked, not the straight-line distance.

VACANCY

The amount of space that is vacant or unoccupied within a market at a particular time.

ZONING

A planning tool used primarily by local governments that helps regulate a building's use, size, and shape. Other factors regulated can also include parking, signage, accessory structures, and landscaping.

Appendix B. Overview of Selected Recent Plans

2017 PRINCE GEORGE'S COUNTY RESOURCE CONSERVATION PLAN

This plan aims to coordinate the County's planning efforts with regard to green infrastructure, and urban and agricultural conservation, in alignment with the goals of the Plan 2035 General Plan. The document contains three complementary countywide functional master plans: the Green Infrastructure Plan (GI), Agricultural Conservation Plan (ACP), and Rural Character Conservation Plan (RCCP).

The GI Plan updates the approved 2005 GI Plan. It updates the County's GI network map, and stipulates that gaps in this network should be addressed either in future sector and master plans or permits for development where gaps exist. The GI Plan emphasizes regulatory issues such as water quality, air, tree canopy, encourages green buildings and construction, expands traditional green infrastructure to include considerations related to climate change and sea level rise.

The ACP Plan updates the 2012 *Adopted and Approved Priority Preservation Area Functional Master Plan*. It includes policies and strategies for agricultural and forestry practices in the County, and also makes technical adjustments to the existing Priority Preservation Area (PPA) map and Sustainable Growth and Agricultural Preservation Act (SGA) tier map. The ACP Plan places an emphasis on food systems, especially the need to provide fresh food to urban communities through urban agricultural and local food systems.

The RCCP builds upon the vision and zoning ordinances set by the Plan 2035 general plan by establishing more detailed design standards for preserving rural and agricultural character in the County, as well as strategies for preserving viewsheds. The RCCP emphasizes Special Roadway corridors, and the Mount Vernon viewshed.

The components of this plan are important to consider as the master planning process considers the rural and agricultural areas in Bowie-Mitchellville and Vicinity, as well as the network of green infrastructure that connects the various parts of the master plan area.

BOWIE SUSTAINABILITY PLAN (2016)

This 10-year plan builds upon Bowie's Climate Action Plan, and was a collaboration between the City of Bowie and M-NCPPC. Community engagement was central to the development of the plan: over 1,000

residents were engaged through 14 events, and an outreach campaign called ImagineBowie. The plan makes short-, mid-, and long-term recommendations on sustainability structured around key themes: jobs and business, food and wellness, nature and environment, communication, community, education, transportation and mobility, water, composting and recycling, energy, and climate.

The plan's strategies include a combination of actions for everyday residents or businesses to take to contribute to sustainability, and infrastructural and programmatic strategies for the public sector. The plan sets targets for reducing greenhouse gas emissions by 20 percent by 2026, and increasing renewable energy generation in Bowie, including through such public programs as community solar programs for renters and low income residents, and a possible renewable microgrid project. Additionally, the plan calls for other strategies that are germane to the current master planning process, including more amenities in public spaces, and expansion of existing biking and hiking trail networks. The plan also operates in tandem with other programs and plans, and calls for updates, to or adoptions of, related plans including the Public Art Master Plan, a Watershed Plan, and the Climate Action Plan.

PLAN PRINCE GEORGE'S 2035 (2014)

An update to Prince George's County's General Plan, Plan Prince George's is the vision for future growth in the entire county. It lays out six main strategies, several of which are relevant to Bowie, including concentrating future growth in existing communities; connecting "our neighborhoods and significant places" by investing in sidewalks, trails, and transit; and protecting natural resources by reducing reliance on driving. It identifies two locations in Bowie as "Local Centers" where infill development should be encouraged, Bowie State University and Bowie Regional Center, and emphasizes improving pedestrian and bike connections to those places. The plan requires all road and streetscape improvements in Local Centers to improve travel conditions for pedestrians, bicyclists, and transit ridership. There are also recommendations about converting existing arterial streets, such as MD 197 (Collington Road) in Bowie, to multiway boulevards that improve pedestrian and bicycle connectivity, and to rebuild local streets as Complete Streets while coordinating with local schools to improve safety. While the plan does not make any major transit recommendations for

Bowie, it does identify bike-sharing and transportation demand management as two programs that should be introduced to Local Centers.

BOWIE STATE MARC STATION SECTOR PLAN (2010)

The Prince George's County Council approved this plan, which envisions a new "college town" community center adjacent to Bowie State University (BSU) and the Bowie State MARC Station with a mix of housing, shopping, an office and research campus, and new university buildings. Included in its recommendations are relocating the Bowie State MARC Station slightly north, expanding the parking lots, and creating a bus hub for local and regional bus services, including a proposed shuttle between the MARC station, Old Town Bowie, and the Bowie Regional Center. It also includes a new vehicular/pedestrian passageway beneath the train tracks connecting the new town center to the university, and a pedestrian overpass over the train tracks that would provide a second connection. A new street grid in the college town would provide a continuous network of walking and bicycling facilities within the community, and to a new trail between Bowie State University and Old Town Bowie. In response to comments from residents and students that they felt unsafe walking and bicycling in the area, the plan also recommends new bike facilities along Race Track Road and Jericho Park Road.

BOWIE HERITAGE TRAIL REPORT (2009)

The City of Bowie, working with the Metropolitan Washington Council of Governments, commissioned this report investigating a new trail connection in the northern part of the city. The new trail would run along a series of existing streets and public rights-of-way between Old Town Bowie, Bowie State University, both of the city's MARC stations, and several parks and residential areas. A key part of the trail would be two plazas along the route next to the Bowie Railroad Museum and the end of 12th Street, which would provide opportunities for placemaking, interpretive signage, or other community amenities.

PRINCE GEORGE'S COUNTY MASTER PLAN OF TRANSPORTATION (2009)

The Master Plan of Transportation is Prince George's County's official vision for pedestrian, bicycle, transit, and highway infrastructure, and includes all of the projects the County intends to build in the coming decades. The 2009 plan's goals are to reduce congestion and vehicle miles traveled, to address major highway and transit projects, and to reconcile

recommendations from 31 neighborhood plans, including the Bowie-Mitchellville and Vicinity Master Plan. Key to this plan for Bowie are policies to promote pedestrian and bicycle access to schools, parks, recreation areas, commercial areas, and employment centers, and to embrace Complete Streets design. The plan recommends several significant pedestrian and bicycle projects around Bowie, including extending the Washington, Baltimore and Annapolis Trail across the Patuxent River into Anne Arundel County, constructing the Collington Branch Stream Valley Trail between MD 214 (Central Avenue) and Western Branch, and a new trail through Old Town Bowie. It also recommends new bike lanes or side paths on several major roads, including MD 197 (Collington Road), MD 450 (Annapolis Road), Race Track Road, Jericho Park Road, Church Road, Mount Oak Road, Mitchellville Road, and Health Center Drive. There are also several large road projects, including widening MD 197 from two to four lanes between Jericho Park Road and the Baltimore-Washington Parkway.

2006 BOWIE AND VICINITY MASTER PLAN

The last comprehensive plan for the master plan area was completed nearly 15 years ago for the 2006 *Bowie and Vicinity Master Plan*.

In following the 2002 *Prince George's County General Plan*, this plan lays out a tiered vision of development along rural and developing tiers and designates a regional center at the intersection of US 301 and US 50.

The plan outlines a thorough vision for centering future development around the Regional Center—which remains a planning opportunity area today. The plan recognizes the potential for this center to serve as a regional activity center and transit hub, given its prime location between Annapolis, Baltimore, and Washington, D.C., but also notes the challenge of US 50 as a barrier that divides the center and is prohibitive to pedestrian friendliness. The plan envisions the regional center as a multimodal transit hub.

The plan places emphasis on Old Town Bowie, including the establishment of a development district overlay zone, design standards, table of uses, and other guidelines for future development of Old Town Bowie.

The 2002 plan also calls for a possible future Community Center at the Bowie State MARC Station and BSU, including redevelopment of the station parking lot and surrounding properties, and recommends a dedicated sector plan to this end (which came to pass in the MARC Station Plan, described below).

The plan's Development Pattern element details mixed use activity centers at Old Town Bowie, Bowie Main Street, West Bowie Village, Pointer Ridge Mixed-Use Activity Center, and Bowie Regional Center. The Areawide Infrastructure Element outlines numerous recommendations, including the development of green infrastructure and new parks, the establishment of high value residential development and senior housing, improvement of existing transportation systems, and expansion of public transit.

CITY OF BOWIE TRANSIT SYSTEM ENHANCEMENT STUDY (2006)

The City of Bowie commissioned this study to investigate options for expanding their transit system. Then as now, the city's transit options consist of two MARC stations with rush hour commuter train service to Washington, D.C. and Baltimore, and a handful of Metrobus routes that connect the city to the New Carrollton Metro Station. These services primarily run during weekday rush hour with limited evening service and no weekend trips. The plan highlighted several populations that are likely to support demand for additional transit service, including a substantial population of adults over 65, children under 18, and zero-car households. All of these populations are generally concentrated in the southern part of the city, near the Bowie Regional Center south of US 50, and west of Collington Road. Noting that 88 percent of surveyed residents said they would use transit more if it were easier to access, the study explored several options for expanding service, including adding frequency and adding new routes within the city or to surrounding communities. It recommended reconfiguring the existing bus service as a series of circulators converging on the Bowie Regional Center, which has not been implemented.

BOWIE AND VICINITY PLAN (2005)

The Bowie and Vicinity Plan sets the community's land use and transportation vision for the coming years, which is being updated in this plan. The plan's goal is to encourage transit-oriented and transit-supporting design around the Bowie Regional Center (comprising Bowie Town Center and surrounding shopping, office, and residential areas) and the city's two MARC stations. In Old Town Bowie, the plan recommends creating an internal street grid in Old Town Bowie to diffuse traffic on MD 450, and redesigning the bridge carrying MD 564 over the train tracks into Old Town Bowie to reduce crashes. New multi-use trails are envisioned between Old Town Bowie and Bowie State University alongside the MARC tracks, along Collington Branch, and around Bowie Town Center. A network of bike lanes would connect the city's activity centers to surrounding neighborhoods, while bridging major roads like MD 3 (Robert Crain Highway), the MD 3/MD 450 intersection, and MD 214 (Central Avenue). The plan also recommends expanding the city's transit network, including a Bowie Area Transit Shuttle to serve Old Town Bowie, and to expand local bus service throughout the city, starting with the area around Bowie Regional Center.

Additional plans reviewed as part of this study include:

- Prince George's County Economic Drivers and Catalysts (2013)
- Prince George's County Primary Healthcare Strategic Plan (2015)
- Prince George's County Retail Marketability and Competitiveness Study (2016)
- Bowie State Master Plan (2016)

Appendix C. Bus Service Timetables

Figure 79. WMATA Bus Ridership: Passenger Pick Up (Fall 2019)

Time of Day	Bus Route	Route Direction	Location of Stop	Direction of Travel	Boarding	Exiting	Average Load	% Capacity
Midday	C26	WEST	CENTRAL AVE/ ENTERPRISE RD	W	10.4	1.0	10.1	14%
PM Peak	C26	WEST	CENTRAL AVE/ ENTERPRISE RD	W	10.5	1.4	5.2	10%
Early Night	B27	WEST	BOWIE STATE UNIVERSITY/ MARTIN LUTHER KING JR CE	S	11.3	0.0	9.2	11%
Midday	C22	WEST	HALL RD/ CENTRAL AVE	N	13.3	0.6	5.3	7%
PM Peak	C28	NORTH	HALL RD/ POINTER RIDGE DR	E	14.2	0.0	5.1	7%
AM Early	C28	NORTH	BOWIE PARK/ RIDE LOT + BAY B	N	16.8	0.1	35.6	41%
AM Early	B22	WEST	BOWIE PARK/ RIDE LOT + BAY B	N	16.9	0.6	30.8	39%
Midday	B22	WEST	BOWIE STATE UNIVERSITY/ MARTIN LUTHER KING JR CE	S	21.4	0.0	13.3	22%
PM Peak	B27	WEST	BOWIE STATE UNIVERSITY/ MARTIN LUTHER KING JR CE	S	25.3	0.1	10.5	18%

Source: WMATA APC system, Fall 2019 weekday averages.

Figure 80. WMATA Bus Ridership: Passenger Drop Off (Fall 2019)

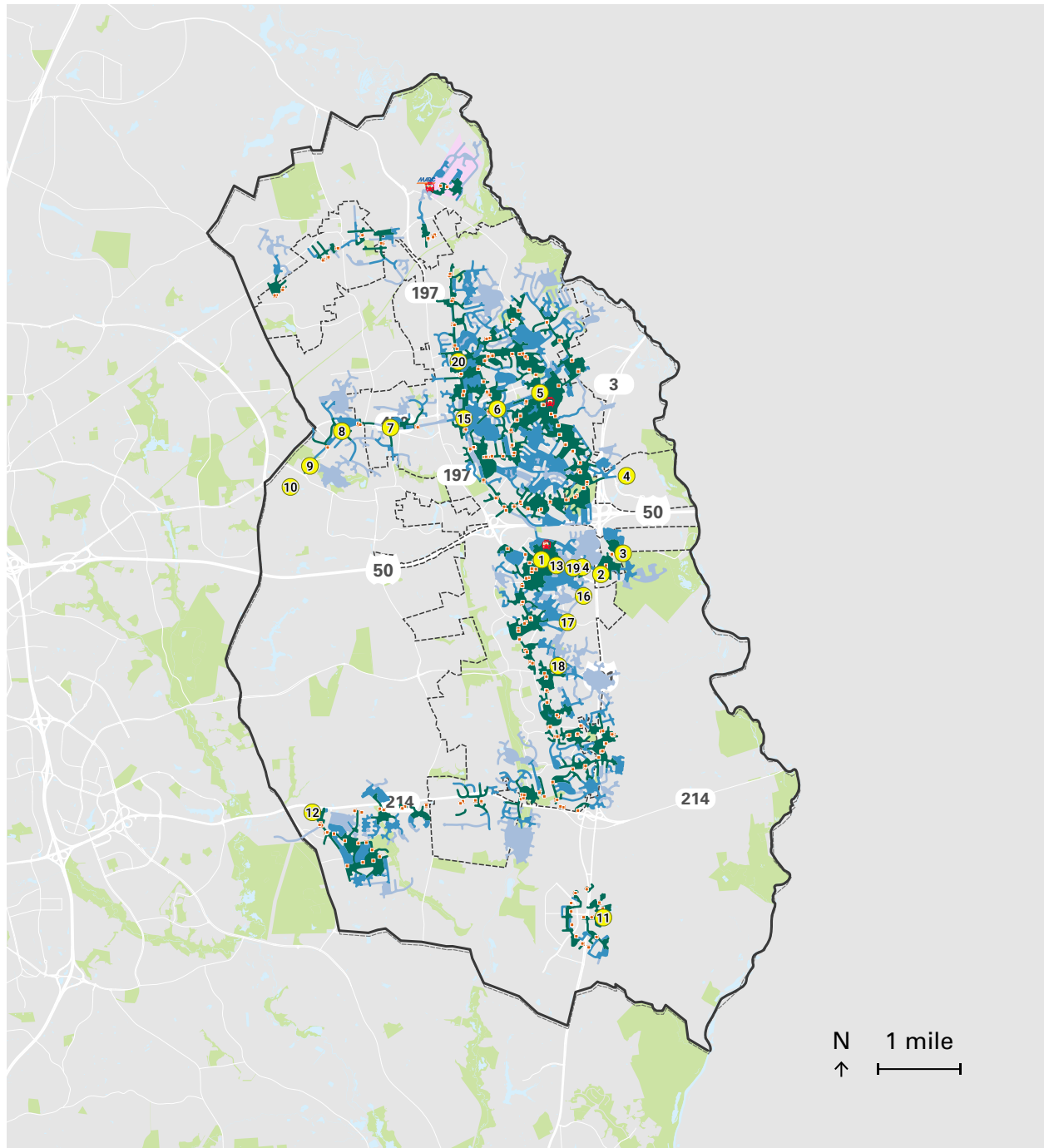
Time of Day	Bus Route	Route Direction	Location of Stop	Direction of Travel	Boarding	Exiting	Average Load	% Capacity
Midday	B24	EAST	ANNAPOLIS RD/FAIRWOOD PKWY	N	2.0	10.4	20.6	25%
AM Peak	C28	SOUTH	HALL RD/ POINTER RIDGE DR	E	0.0	10.6	0.0	0%
Midday	B24	EAST	HEALTH CENTER DR/NORTHVIEW DR	W	0.2	10.9	7.1	13%
PM Peak	B24	EAST	ANNAPOLIS RD/ HILLMEADE RD	E	0.4	11.0	16.4	23%
AM Peak	B21	EAST	NORTHVIEW DR/ COLLINGTON RD	N	2.0	11.1	24.4	41%
Midday	B21	EAST	BOWIE STATE UNIVERSITY/ MARTIN LUTHER KING JR CE	S	0.0	11.3	0.0	0%
AM Peak	B27	EAST	BOWIE STATE UNIVERSITY/ THURGOOD MARSHALL LIBRAR	N	0.1	11.4	8.0	12%
Midday	B22	EAST	BOWIE STATE UNIVERSITY/ THURGOOD MARSHALL LIBRAR	N	8.3	11.4	5.1	6%
Midday	C22	EAST	HALL RD/ CENTRAL AVE	N	0.2	11.6	0.0	0%
PM Peak	B27	EAST	9TH ST/ RAILROAD AVE	S	0.4	11.6	4.7	6%
PM Peak	B22	EAST	BOWIE STATE UNIVERSITY/ THURGOOD MARSHALL LIBRAR	N	7.5	12.1	4.7	7%
PM Peak	B24	EAST	ANNAPOLIS RD/FAIRWOOD PKWY	N	1.0	12.4	21.0	27%
PM Peak	B24	EAST	HEALTH CENTER DR/NORTHVIEW DR	W	0.1	12.5	5.6	7%

Time of Day	Bus Route	Route Direction	Location of Stop	Direction of Travel	Boarding	Exiting	Average Load	% Capacity
Midday	B24	EAST	BOWIE PARK AND RIDE LOT/ BUS BAY C	E	0.2	12.8	0.0	0%
PM Peak	B22	EAST	BOWIE STATE UNIVERSITY/ MARTIN LUTHER KING JR CE	S	0.0	13.0	0.0	0%
PM Peak	C28	SOUTH	HALL RD/ POINTER RIDGE DR	E	0.0	14.7	0.0	0%
PM Peak	B22	EAST	NORTHVIEW DR/ COLLINGTON RD	N	4.3	14.9	36.7	47%
AM Peak	B21	EAST	BOWIE STATE UNIVERSITY/ MARTIN LUTHER KING JR CE	S	0.1	15.5	0.0	0%
PM Peak	B29	EAST	BOWIE PARK AND RIDE LOT/ BUS BAY A	N	0.8	26.0	20.6	27%
Midday	B21	EAST	BOWIE STATE UNIVERSITY/ THURGOOD MARSHALL LIBRAR	N	6.6	30.1	9.4	12%
AM Peak	B21	EAST	BOWIE STATE UNIVERSITY/ THURGOOD MARSHALL LIBRAR	N	0.9	30.9	7.7	11%
PM Peak	B2-2	EAST	BOWIE PARK AND RIDE LOT/ BUS BAY A	N	2.8	61.8	15.5	20%
PM Peak	C28	SOUTH	BOWIE PARK AND RIDE LOT/ BUS BAY A	N	1.6	61.8	15.0	22%

Source: WMATA APC system, Fall 2019 weekday averages.

Appendix D. Inventory of Dangerous Pedestrian Crossings

Map 85. Inventory of Dangerous Pedestrian Crossings



Bus Stop Walksheds



Source: Open Street Map, WMATA, M-NOPPC.

Figure 81. WMATA Bus Ridership: Passenger Drop Off (Fall 2019)

ID	Main Street	Crossing Street
1	Collington Road	Northview Drive
2	Collington Road	Mitchellville Road
3	Crain Highway	Harbour Way
4	Crain Highway	Belair Drive
5	Annapolis Road	Stonybrook Drive
6	Annapolis Road	Trinity Drive
7	Annapolis Road	Church Road North
8	Annapolis Road	Hillmeade Road
9	Annapolis Road	Fairwood Parkway
10	Annapolis Road	Glenn Dale Boulevard
11	Prince Georges Boulevard	Trade Zone Avenue
12	Central Avenue	Watkins Park Drive
13	Collington Road	Town Center Boulevard
14	Collington Road	Holiday Lane
15	Laurel Bowie Road	Annapolis Road
16	Excalibur Road	Mitchellville Road
17	Northview Drive	Mitchellville Road
18	Alameda Drive	Mitchellville Road
19	Collington Road	Evergreen Parkway
20	Old Chapel Road	Laurel Bowie Road

Source: GIS Data Catalogue, Prince George's County Planning Department.

Appendix E. Table of Historic Designations

Designation	# in Master Plan Area	Definition	Planning considerations
Historic Properties	48		
Historic Site (County)	32	An "individual historic resource that is significant and contributes to historical, architectural, archeological, or cultural values" classified in the 2010 Historic Sites and Districts Plan.	Requires Historic Preservation Commission (HPC) review and Historic Area Work permit for any construction on the property. Preservation tax credit available for conservation and restoration work. ¹ If designated a historic site by the County, in order to get a tax credit, sites must be in good standing regarding permits, and the work must be sensitive to the site's historic nature. Tax credit may cover 25% of owner expenses. ²
Historic Resource (County)	6	Sites or attributes that may be historically significant but are unclassified and not subject to Historic Work Area requirements. Requires Historic Preservation Commission (HPC) evaluation. Historic resources are listed in the County Inventory of Historic Resources	HPC evaluation required; Requires historic area work permit, which triggers evaluation to determine if the property should be designated a County Historic Site.
National Register of Historic Places	10	Sites of importance to the history of the community, County, state, or country. These must be nominated by the state for approval by the federal government. Almost every county in the U.S. has at least one National Register of Historic Places property. ³	If federally owned, requires comment from Advisory Council on Historic Preservation (Federal) and the Maryland Historical Trust; there may be federal grant and tax credits available.
Threatened Historic Site	1	Historic site designated as "threatened" by M-NCPPC.	Sites are tracked and evaluated by HPC staff and monitored on the commission's Properties of Concern list.
Historic/Scenic Roads	15 historic 1 scenic 10 scenic/historic	Roads designated by County Council for historic and/or scenic significance. Criteria for designation is outlined in Section 23 of Prince George's County code.	Adjacent development must be evaluated and approved by County. Historic roads are listed in the Master Plan of Transportation. Scenic roads are designated by County Council resolution or master/sector plans. ⁴
Prince George's County Modern Site	20	Sites identified by the County for significance to Mid-century Modern Movement. The County keeps a record of the status of these sites. Some are designated as County Historic Sites, others are not.	Historic site regulations apply to those that are designated as historic sites.
Historic Environmental Setting	32	Indicates the areas subject to HPC review in connection to historic sites/resources. All County historic sites have an associated environmental setting.	Area is subject to HPC review.

1 See: <http://mncppcapps.org/planning/publications/PDFs/235/Approved%20Historic%20Sites%20and%20Districts%20Plan.pdf>

2 Prince George's County Historic Preservation Commission. 2018. "PRINCE GEORGE'S COUNTY HISTORIC PRESERVATION TAX CREDITS Policies and Procedures." <http://www.pg parks.com/DocumentCenter/View/670/Tax-Credit-Policies-and-Procedures-PDF>

3 "What Is the National Register of Historic Places? - National Register of Historic Places (U.S. National Park Service)." n.d. Accessed April 3, 2020. <https://www.nps.gov/subjects/nationalregister/what-is-the-national-register.htm>.

4 "Approved Historic Sites and Districts Plan." n.d. Issuu. Accessed March 26, 2020. https://issuu.com/mncppc/docs/hsdp__approved_book_for_web.

Designation	# in Master Plan Area	Definition	Planning considerations
African American Historic Community	2	Indicates the boundaries of a site recognized by the HPC as a Documented Historic Community with significance for African American history.	These communities are not regulated by County historic preservation ordinance. They are recognized "for reference only." ⁵
African American Historic Property	10	A property recognized by the Prince George's County Planning Department for significance in African American history. Some are recognized historic sites, some are not.	Historic Site regulations apply if the site is recognized as such. Otherwise, no known regulations or incentives.
Easements (historic/scenic)	3 cemetery 19 scenic 5 historic	Designated natural features (cemeteries are not natural features) that must be retained in development for the purposes of conservation (in this case, for historic and scenic reasons). The Planning Department calls this data set non-authoritative and incomplete due to the nature of easements.	Consultation is required with Planning Department staff for future development at the site. County code mandates that natural features and buffers that protect historic/scenic sites be retained in development. ⁶
Anacostia Trails Heritage Area	9,529 total acres	Area included in the Anacostia Trails Heritage Area Management Plan (2001), a functional heritage tourism plan. Includes a network of trails that connect to important historic, cultural, and recreational sites in the County.	Heritage grants could be available to communities through the state.
Archaeological Sites	38	These properties are subject to archeological investigation to determine any archeological resources on the property. ⁷ If a development is proposed, these sites would be further evaluated to determine if they are significant.	Phase 1 archeological survey must be reviewed by Planning Board. Further phases of archeological investigation may be required if there are known historically significant sites on the property. The results of Phase 1 dictate whether there is need for a Phase 2.
Historic District (County; National Register)	0	From County code: "A historic resource comprised of two (2) or more properties which are significant as a cohesive unit and contribute to historical, architectural, archeological, or cultural values, which has been so classified in the master plan for historic preservation. A historic district includes all property within its boundaries." Historic districts may also be recognized by the federal government and included in the National Register.	County tax credits available for rehabilitation of historic properties within historic districts. Additional federal tax incentives are available for properties within National Register districts.

Source: GIS Data Catalogue, Prince George's County Planning Department.

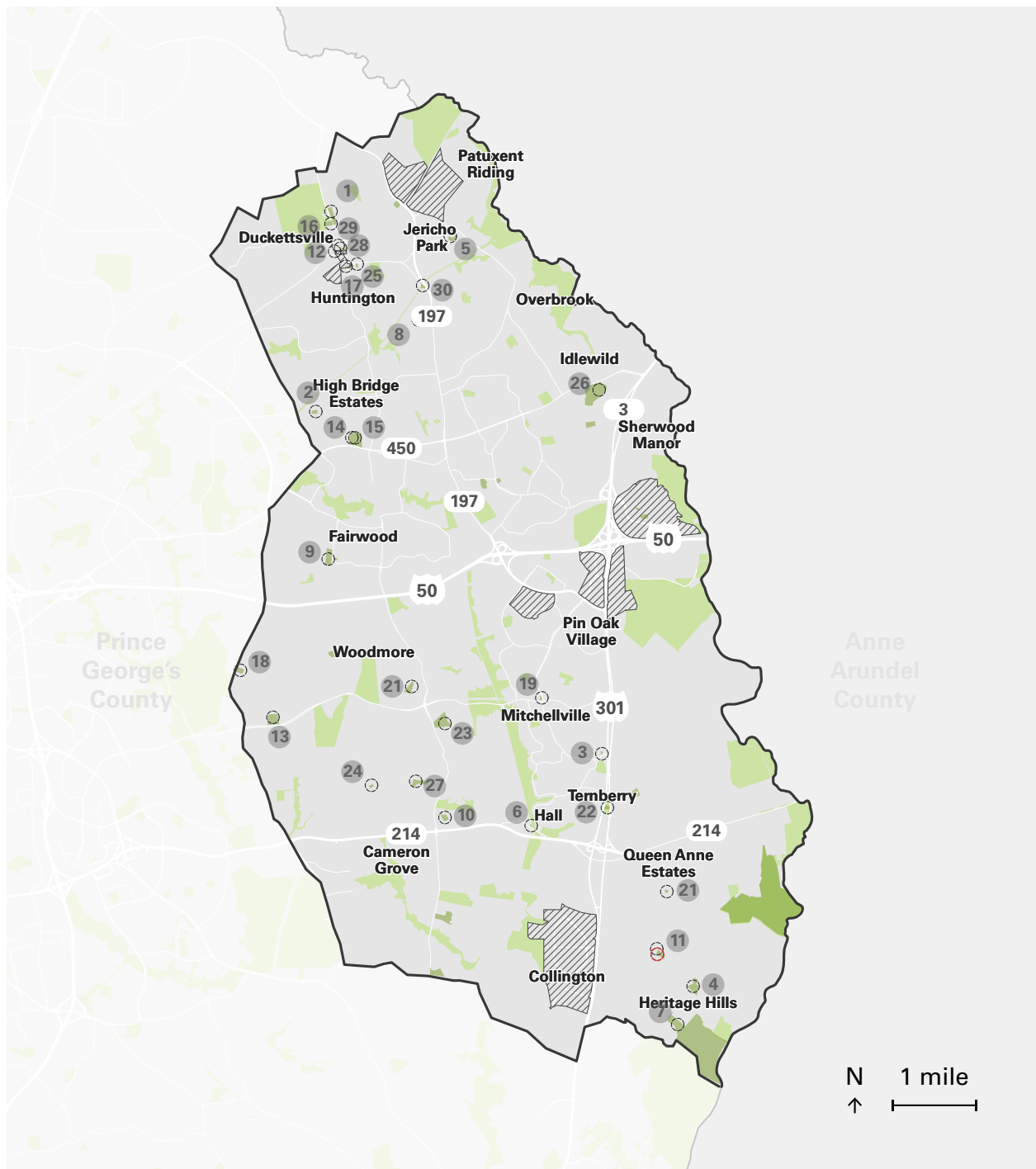
⁵ See: <http://mncppcapps.org/planning/publications/PDFs/235/Approved%20Historic%20Sites%20and%20Districts%20Plan.pdf>

⁶ See 24-135.01: https://library.municode.com/md/prince_george's_county/codes/code_of_ordinances?nodeId=PTIIT17PULOLAPRGECOMA__SUBTITLE__24SU

⁷ See 2005 County policy on archaeological surveys here: <https://www.mncppc.org/DocumentCenter/View/423/Guidelines-for-Archeological-Review-PDF>

Appendix F. Asset Inventories: Community Heritage and Culture

Map 86. Asset Inventory Map: Historic Sites



Source: Prince George's County Planning Department.

Figure 82. Asset Inventory Table: Historic Sites

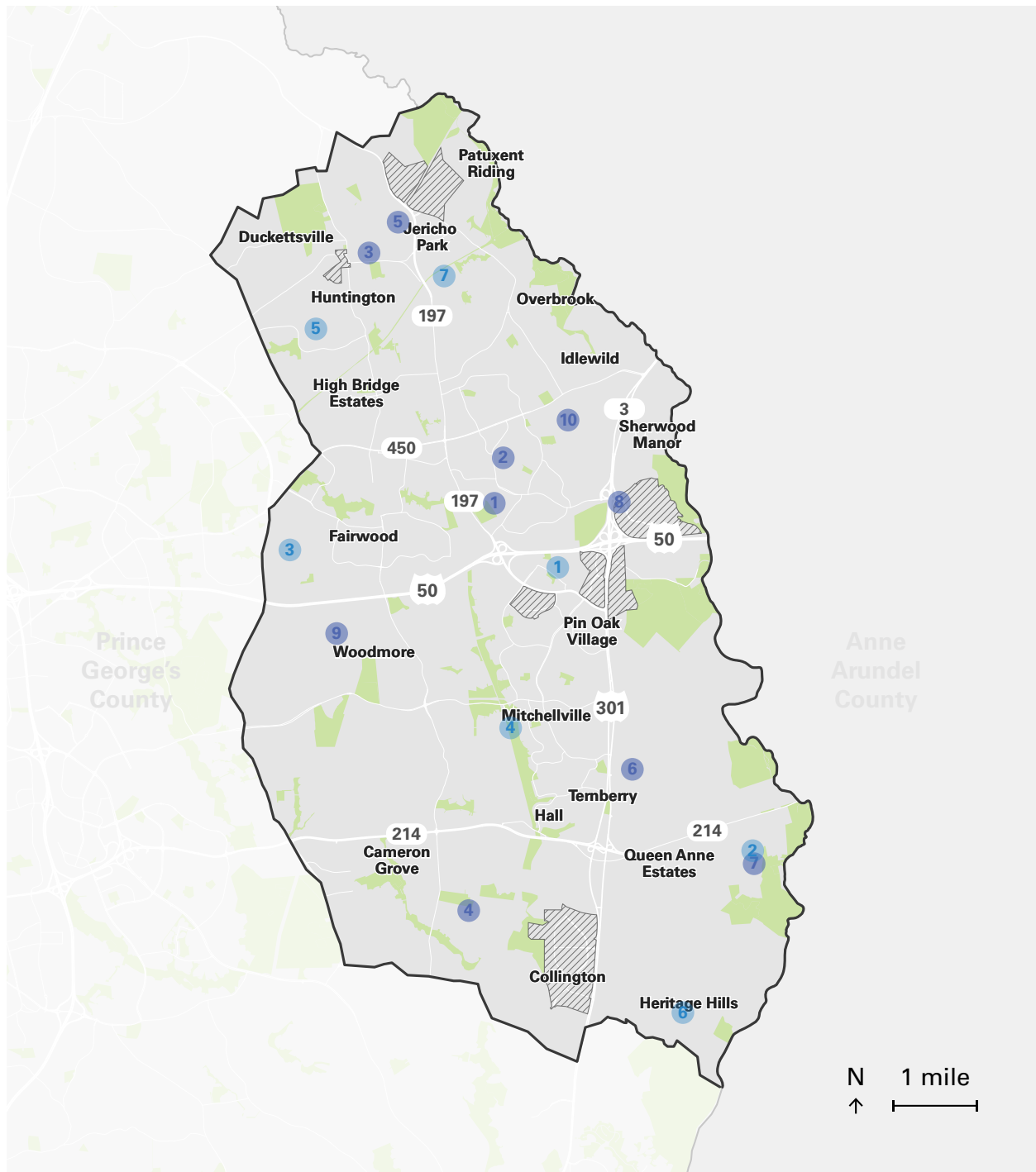
ID	Site Name	County ID	Address
1	Albert Smith House	71A-002	9201, Laurel Bowie Road, Huntington South, Old Town Bowie, Bowie, Prince George's County, Maryland, 20720
2	Boyden House	71A-034	6501, Hillmeade Road, Springfield, Bowie, Prince George's County, Maryland, 20720
3	Carroll Chapel	74B-006	1811, Mitchellville Road, Hall, Bowie, Prince George's County, Maryland, 20716
4	Claggett House at Cool Spring Manor	74B-015	17500, Claggett Landing Road, Heritage Hills, Greater Upper Marlboro, Prince George's County, Maryland, 20774
5	Colbert Family Farm Site	71B-019	9000, Race Track Road, Huntington South, Patuxent Riding, Prince George's County, Maryland, 20715
6	Duvall-Hopkins Store	74B-030	15512, Hall Road, Hall, Bowie, Prince George's County, Maryland, 20721
7	Elliot-Beall House	74B-016b	1600, Heritage Hills Drive, Heritage Hills, Greater Upper Marlboro, Prince George's County, Maryland, 20774
8	Fair Running	71B-015	CLUBHOUSE, Washington, Baltimore & Annapolis Trail, Huntington South, Bowie, Prince George's County, Maryland, 20720
9	Fairview and Cemetery	71A-013	4600, Fairview Vista Drive, Holmehurst, Woodmore, Prince George's County, Maryland, 20720
10	Frederick and Frances Watkins House	71B-023	14307, Delcastle Drive, Woodmore, Prince George's County, Maryland, 20721
11	*Goodwood	74B-014	17200, Claggett Landing Road, Heritage Hills, Greater Upper Marlboro, Prince George's County, Maryland, 20774
12	Harmon-Phelps House	71B-002-08	8706, Maple Avenue, Huntington South, Old Town Bowie, Bowie, Prince George's County, Maryland, 20720
13	Holy Family Church & Cemetery	74A-004	13104, Annapolis Road, Collington, Bowie, Prince George's County, Maryland, 20720
14	Holy Trinity Church and Cemetery	71A-009a	13104, Annapolis Road, Collington, Bowie, Prince George's County, Maryland, 20720
15	Holy Trinity Church Rectory	71A-009b	Hillmeade, High Bridge Estates, Fairwood, Prince George's County, Maryland
16	Ingersoll-Muller House	71A-003	9006, Laurel Bowie Road, Huntington South, Old Town Bowie, Bowie, Prince George's County, Maryland, 20720
17	Knights of St. John Hall	71B-002-23	13004, 12th Street, Huntington South, Old Town Bowie, Bowie, Prince George's County, Maryland, 20715
18	Locust Grove/Slingluff House	74A-002	Kolbes Corner, Woodmore, Prince George's County, Maryland, 20721
19	Mitchellville Storekeeper's House and Store Site	71B-007	National Capital Radio & Television Museum, Mitchellville Road, Pin Oak Village, Heather Hills, Bowie, Prince George's County, Maryland, 20716
20	Mount Oak	74A-008	3005, Westbrook Lane, Holmehurst, Woodmore, Prince George's County, Maryland, 20721
21	Mt. Nebo A.M.E. Church & Cemetery	74B-010	Mount Nebo Church, Queen Anne Road, Queen Anne Estates, Marlboro Meadows, Prince George's County, Maryland, 20774
22	Mulliken House site/Harwood Hall	74B-009	North East Crain Highway, Pin Oak Village, Kidwells Corner, Prince George's County, Maryland, 20716

ID	Site Name	County ID	Address
23	Mullikin's Delight and Cemetery	74A-010	2307, Church Road North, Woodmore, Prince George's County, Maryland, 20721
24	Partnership and Cemetery	74A-015	Six Flags America Amusement Park, Sonora Speedway, Kolbes Corner, Woodmore, Prince George's County, Maryland, 20721
25	Ryon House	71B-002-03	13125, 11th Street, Huntington South, Old Town Bowie, Bowie, Prince George's County, Maryland, 20715
26	Sacred Heart RC Church & Cemetery	71A-019	16505, Annapolis Road, Idlewild, Bowie, Prince George's County, Maryland, 20715
27	Seton Belt Barn	74A-014	Belt Woods Heritage Conservation Fund Site, Church Road South, Kettering, Prince George's County, Maryland, 20774
28	St. James Chapel	71B-002-05	13010, 8th Street, Huntington South, Old Town Bowie, Bowie, Prince George's County, Maryland, 20720
29	Straining House	71B-002-01	13005, 7th Street, Huntington South, Old Town Bowie, Bowie, Prince George's County, Maryland, 20720
30	WB&A Electric Railway Bridge	71A-006	Washington, Baltimore & Annapolis Trail, Huntington South, Old Town Bowie, Bowie, Prince George's County, Maryland, 20715

*Threatened site on Properties of Concern list.

Source: GIS Data Catalogue, Prince George's County Planning Department.

Map 87. Asset Inventory Map: Historic Resources and National Register Sites



5 Historic Register Site

7 Historic Resource

Focus Area

City of Bowie

Source: Prince George's County Planning Department.

Figure 83. Asset Inventory Table: Historic Resources

ID	Site Name	County ID	Address
1	Enfield Chase Site	71B-006	4319, Collington Road, Pin Oak Village, Heather Hills, Bowie, Prince George's County, Maryland, 20716
2	Hopkins House	74B-011	100, Queen Anne Bridge Road, Hardesty, Prince George's County, Maryland, 20716
3	Magruder Cemetery	71A-012	4917, Smithwick Lane, Holmehurst, Woodmore, Prince George's County, Maryland, 20720, United States of America
4	Mitchell Cemetery	71B-008	15503, Porsche Court, Hall, Bowie, Prince George's County, Maryland, 20716
5	Noble Strother House	71A-022-04	12500, Fletchertown Road, Huntington South, Springfield, Bowie, Prince George's County, Maryland, 20720
6	William Wells House	74B-016a	Heritage Hills, Greater Upper Marlboro, Prince George's County, Maryland, United States of America
7	WB&A Electric Railway Bridge	71A-006	Washington, Baltimore & Annapolis Trail, Huntington South, Old Town Bowie, Bowie, Prince George's County, Maryland, 20715

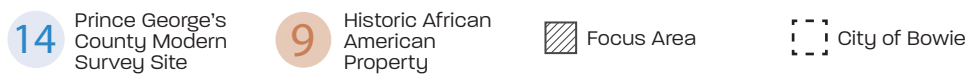
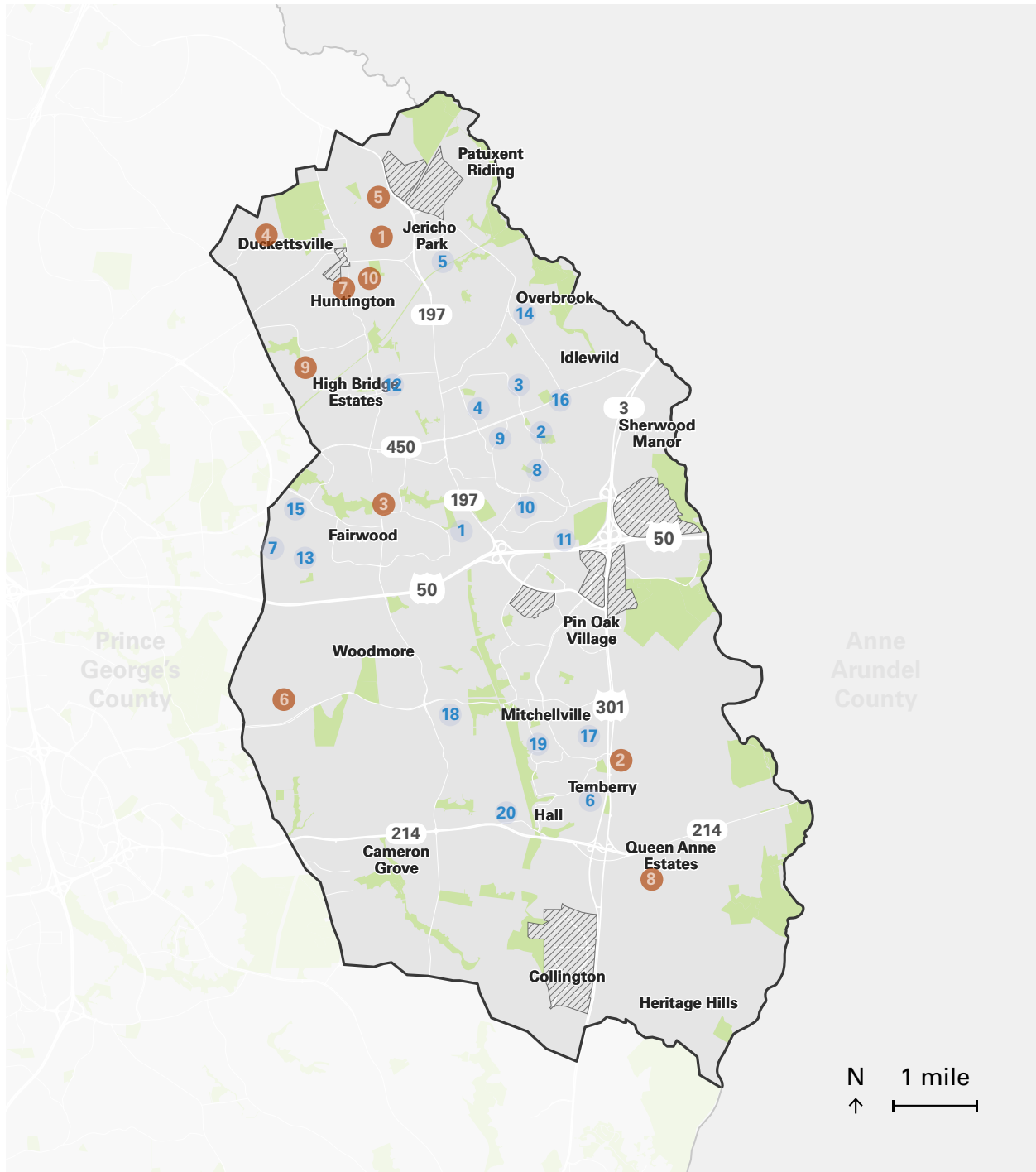
Source: GIS Data Catalogue, Prince George's County Planning Department.

Figure 84. Asset Inventory Table: National Register Sites

ID	Site Name	County ID	Address
1	Belair Mansion and Cemetery	71B-004	12207, Tulip Grove Drive, Collington, Heather Hills, Bowie, Prince George's County, Maryland, 20715
2	Belair Stables	71B-005	2835, Belair Drive, Collington, Heather Hills, Bowie, Prince George's County, Maryland, 20715
3	Bowie Railroad Buildings	71B-002-09	Huntington Railroad Museum, Chestnut Avenue, Huntington South, Old Town Bowie, Bowie, Prince George's County, Maryland, 20720
4	Bowieville	74A-018	601, Bowieville Manor Lane, Leeland, Prince George's County, Maryland, 20774
5	D.S.S. Goodloe House	71A-030	Goodloe House, 9300, Laurel Bowie Road, Huntington South, Jericho Park, Prince George's County, Maryland, 20720
6	Hamilton House	74B-007	16810, Federal Hill Court, Kidwells Corner, Prince George's County, Maryland, 20716
7	Hazelwood	74B-013	18611, Queen Anne Road, Hardesty, Washington, D.C., Prince George's County, Maryland, 20774
8	Melford, Outbuildings & Cemetery	71B-016	17107, Melford Boulevard, Bowie, Prince George's County, Maryland, 20715
9	Pleasant Prospect & Outbuildings	74A-006	3300, Waterford Mill Road, Holmehurst, Woodmore, Prince George's County, Maryland, 20721
10	Williams Plains	71B-003	16200, White Marsh Park Drive, Bowie, Prince George's County, Maryland, 20715

Source: GIS Data Catalogue, Prince George's County Planning Department.

Map 88. Asset Inventory Map: Prince George's Modern and Historic African American Properties



Source: Prince George's County Planning Department.

Figure 85. Asset Inventory Table: Prince George's Modern Sites

Site Name	Site Number	Address
Benjamin Tasker Middle School	71B-XX	4901 Collington Road, Bowie, MD 20772
Bowie Community Center	71B-XX	3209 Stonybrook Drive, Bowie, MD 20715
Bowie Fire Department	71B-XX	15454 Annapolis Road, Bowie, MD 20715
Bowie High School	71B-XX	15210 Annapolis Road, Bowie, MD 20715
Bowie Montessori Children's Home	71A-XX	5004 Randonstone Lane, Bowie, MD 20715
Bowie Volunteer Fire Department	71B-XX	16408 Pointer Ridge Drive, Bowie, MD 20716
Cloyd Barnes House	71A-XX	4917 Smithwick Lane, Bowie, MD 20720
Country Clubber Modern No. 1	71B-018-01	12425 Stafford Lane, Bowie, MD 20715
Country Clubber Modern No. 2	71B-XX	12421 Sadler Lane, Bowie, MD 20715
Former Fox Hill Elementary	71B-XX	2614 Kenhill Drive, Bowie, MD 20715
Heather Hills Elementary School	71B-XX	12605 Heming Lane, Bowie, MD 20716
High Bridge Elementary School	71A-XX	7011 High Bridge Road, Bowie, MD 20720
House	71A-XX	4801 Castle Court, Bowie, MD 20720
Phillips 66 (Bowie)	71B-XX	15300 Old Chapel Road, Bowie, MD 20715
Power House	71A-XX	4925 Smithwick Lane, Bowie, MD 20720
Shopping Center	71B-XX	3329 Superior Lane, Bowie, MD 20715
South Bowie Community Center	71B-XX	1717 Pittsfield Lane, Bowie, MD 20716
Tall Oaks Vocational High School	74B-XX	2112 Church Road, Bowie, MD 20772
TBD (Pointer Ridge Subdivision)	71B-XX	15805 Perkins Lane, Bowie, MD 20716
Veterinary	74B-XX	15511 Hall Road, Bowie, MD 20772

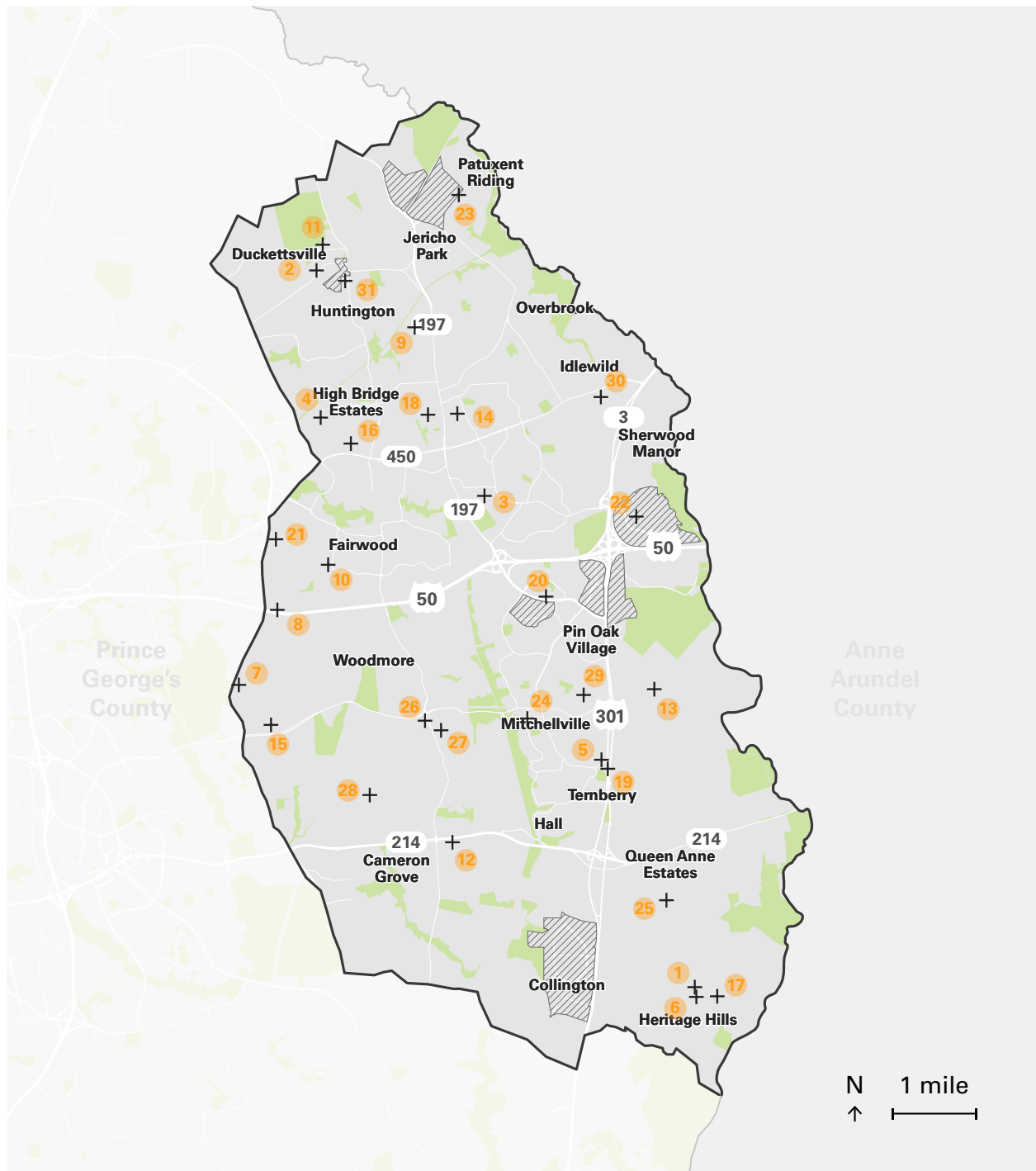
Source: GIS Data Catalogue, Prince George's County Planning Department.

Figure 86. Asset Inventory Table: Historic African American Properties

Name	Classification	Type Code	Angle Code
Bowie School Site	Documented Property	3	0
Carroll Chapel	Historic Resource	2	1
Collington School	Documented Property	3	0
Dockettsville Rosenwald Colored School Site	Documented Property	3	0
Goodloe House, D.S.S.	National Register	4	1
Holy Family Church & Cemetery	Historic Site	1	1
Knights of St. John Hall	Documented Property	3	0
Mt. Nebo A.M.E. Church & Cemetery	Historic Site	1	1
Noble Strother House	Documented Property	3	0
Ross Memorial ME Church & Parsonage	Documented Property	3	0

Source: GIS Data Catalogue, Prince George's County Planning Department.

Map 89. Asset Inventory Map: Historic Cemeteries



- 13 Historic Cemetery
- Focus Area
- City of Bowie

Source: Prince George's County Planning Department.

Figure 87. Asset Inventory Table: Historic Cemeteries

Name	Address	City	Type Code	Status
African American Cemetery at Clagett House	17500 Clagett Landing Rd.	Upper Marlboro	Family	Inactive
Ascension Roman Catholic Church & Cemetery	12700 Lanham-Severn Rd.	Bowie	Church	Active
Belair Mansion & Ogle Family Cemetery	12207 Tulip Grove Dr.	Bowie	Family	Inactive
Bowie Family Cemetery, Cedar Hill	next to 6601 Seward Rd.	Bowie	Family	Inactive
Carroll Methodist Chapel & Cemetery	1811 Mitchellville Rd.	Bowie	Church	Active
Clagett-Darnall Family Cemetery	17500 Clagett Landing Rd.	Upper Marlboro	Family	Inactive
Cross-Slingluff Family Cemetery	11607 Locust Glen Drive	Bowie	Family	Inactive
Duckett Family Cemetery	4105 Enterprise Rd.	Bowie	Private	Inactive
Fair Running & Duvall Family Cemetery	7704 Laurel Bowie Rd.	Bowie	Family	Inactive
Fairview & Bowie Family Cemetery	4600 Fairview Vista Dr.	Bowie	Family	Active
First Lutheran Church & Cemetery	12710 Duckettown Rd.	Bowie	Church	Active
Hall Family Cemetery	909 James Ridge Rd.	Mitchellville	Family	Inactive
Hamilton Family Cemetery	17205 Mill Branch Pl.	Bowie	Family	Inactive
Hardisty Family Cemetery	next to 3505 Mase Ln.	Bowie	Family	Inactive
Holy Family Roman Catholic Church & Cemetery	12010 Woodmore Rd.	Bowie	Church	Active
Holy Trinity Episcopal Church & Cemetery	13104 Annapolis Rd.	Bowie	Church	Active
Howard Family Cemetery	18001 Clagett Landing Rd.	Upper Marlboro	Private	Inactive
Isaac Family Cemetery	14105 Lancaster Ln.	Bowie	Family	Inactive
Jones Memorial Gardens	1810 Mitchellville Rd.	Bowie	Family	Active
Landsdale Grave	4301 Collington Rd.	Bowie	Family	Inactive
Magruder Family Cemetery	4925 Smithwick Ln.	Bowie	Family	Inactive
Melford & Duckett Family Cemetery	17107 Melford Blvd.	Bowie	Family	Inactive
Merkel Family Cemetery	9425 Merkel Farms Rd.	Bowie	Private	Inactive
Mitchell Family Cemetery	15503 Porsche Ct.	Bowie	Family	Inactive
Mount Nebo A.M.E. Church & Cemetery	17214 Queen Anne Rd.	Upper Marlboro	Church	Active
Mount Oak Methodist Church Cemetery	2804 Church Rd.	Bowie	Church	Active
Mullikin's Delight & Mullikin Family Cemetery	2307 Church Rd.	Bowie	Church	Inactive
Partnership & Hall Family Cemetery	13710 Central Ave.	Bowie	Family	Inactive
Peach-Walker Family Cemetery	2806 Arden Forest Ln.	Bowie	Family	Inactive
Sacred Heart Roman Catholic Church & Cemetery	16301 Annapolis Rd.	Bowie	Church	Active
Site of Bowie Methodist Church & Cemetery	near 8310 Chestnut Ave.	Bowie	Church	Inactive

Source: GIS Data Catalogue, Prince George's County Planning Department.

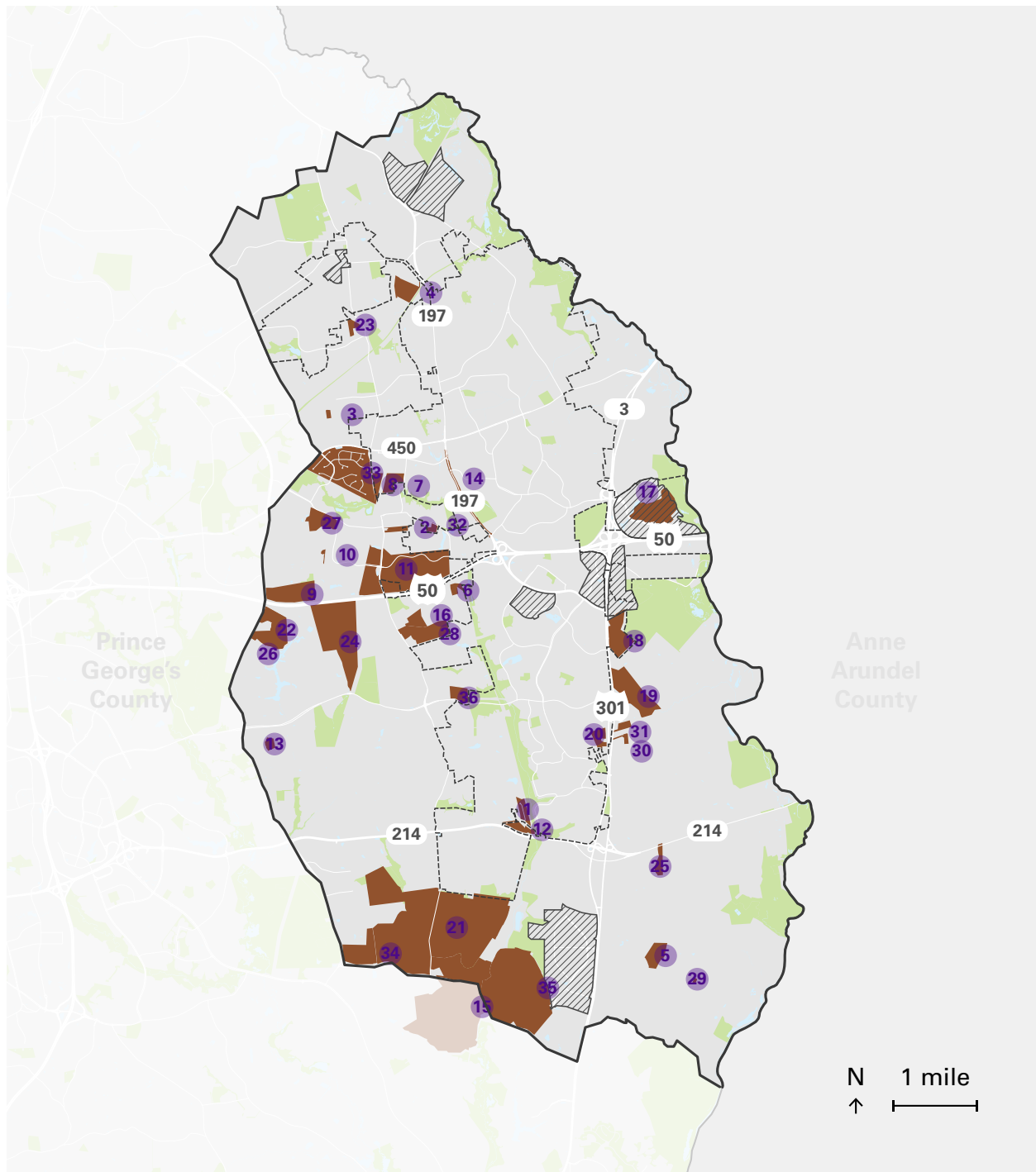
Figure 88. Asset Inventory Table: Historic and Scenic Roads

Id	Road Name	Limit	Functional	Planning Area	Tier	Road Designation
1	Old Annapolis Road	Highbridge Road To Moylan Road	Local	71B	Developed	Historic
2	Collington Road (MD 197)	Mitchellville Road to Annapolis Road (MD 450)	Arterial	71B	Developing	Historic
3	Duckettown Road	Old Laurel Bowie Road to Myrtle Avenue	Local	71B	Developing	Historic
4	Enterprise Road (MD 193)	Central Avenue (MD 214) to Annapolis Road (MD 450)	Arterial	70, 73, 74A	Developing	Historic
5	Hillmeade Road	Prospect Hill Road to Annapolis Road (MD 450)	Collector	70	Developing	Historic
6	Mitchellville Road	Crain Highway (US 301) to Mount Oak Road	Collector	71B, 74B	Developing	Historic
7	Mitichellville Road	Mount Oak Road to Collington Road (MD 197)	Arterial	71B	Developing	Historic
8	Watkins Park Drive (MD 193)	Oak Grove Road to Old Enterprise Road	Arterial	73, 74A	Developing	Historic
9	Leeland Road	Crain Highway (US 301) to Oak Grove Road	Major Collector	74A	Developing	Scenic
10	Church Road	Oak Grove Road to Fairwood Parkway	Collector	71A, 71B, 74A	Developing	Scenic/Historic
11	Church Road	Fairwood Parkway to Old Annapolis Road	Local	71A, 71B	Developing	Scenic/Historic
12	Mount Oak Road	Church Road to Mitchellville Road	Arterial	71B, 74A	Developing	Scenic/Historic
13	Oak Grove Road	Watkins Park Drive to Leeland Road	Major Collector	74A, 79	Developing	Scenic/Historic
14	Old Lottsford Road	Lottsford Vista Road to West of Enterprise Road	Local	73	Developing	Scenic/Historic
15	Woodmore Road	Enterprise Road (MD 193) to Church Road	Arterial	74A	Developing	Scenic/Historic
16	Annapolis Road (MD 450)	Folly Branch at Buena Vista (MLK Highway) to Highbridge Road	Arterial	70, 71A	Developing/ Rural	Historic
17	Annapolis Road (MD 450)	Moylan Road to Crain Highway (MD 3)	Arterial	71A, 71B	Developing/ Rural	Historic
18	Duckettown Road	Springfield Road to Old Laurel Bowie Road	Collector	71A	Developing/ Rural	Historic
19	Governor's Bridge Road	Patuxent River to Crain Highway (US 301)	Local	71B, 74B	Developing/ Rural	Historic
20	Laurel Bowie Road (MD 197)	Turtle Trail/Mallard Pond to Annapolis Road (MD 450)	Arterial	64, 71A, 71B	Developing/ Rural	Historic

Id	Road Name	Limit	Functional	Planning Area	Tier	Road Designation
21	Springfield Road	Powder Mill Road to Duckettown Road	Collector (Local inside BARC)	64, 71A	Developing/ Rural	Historic
22	Mill Branch Road	Queen Anne Bridge Road to Crain Highway (US 301)	Local	74B	Developing/ Rural	Scenic/Historic
23	Queen Anne Bridge Road	US 301 to Mill Branch Road	Local	74B	Developing/ Rural	Scenic/Historic
24	Queen Anne Road	Crain Highway (US 301) to Queen Anne Bridge Road	Local	74B	Developing/ Rural	Scenic/Historic
25	Normal School Road	Race Track Road to just south of Laurel Bowie Road (MD 197)	Local	71A	Rural	Historic
26	Queen Anne Bridge Road	Mill Branch Road to Central Avenue	Local	74B	Rural	Scenic/Historic
27	Queen Anne Bridge Road	Central Avenue to Patuxent River	Local	74B	Rural	Scenic/Historic

Source: GIS Data Catalogue, Prince George's County Planning Department.

Map 90. Archeological Sites



- 31 Archeological Survey Site
- Archeological Survey Site Area
- Focus Area
- City of Bowie

Source: Prince George's County Planning Department.

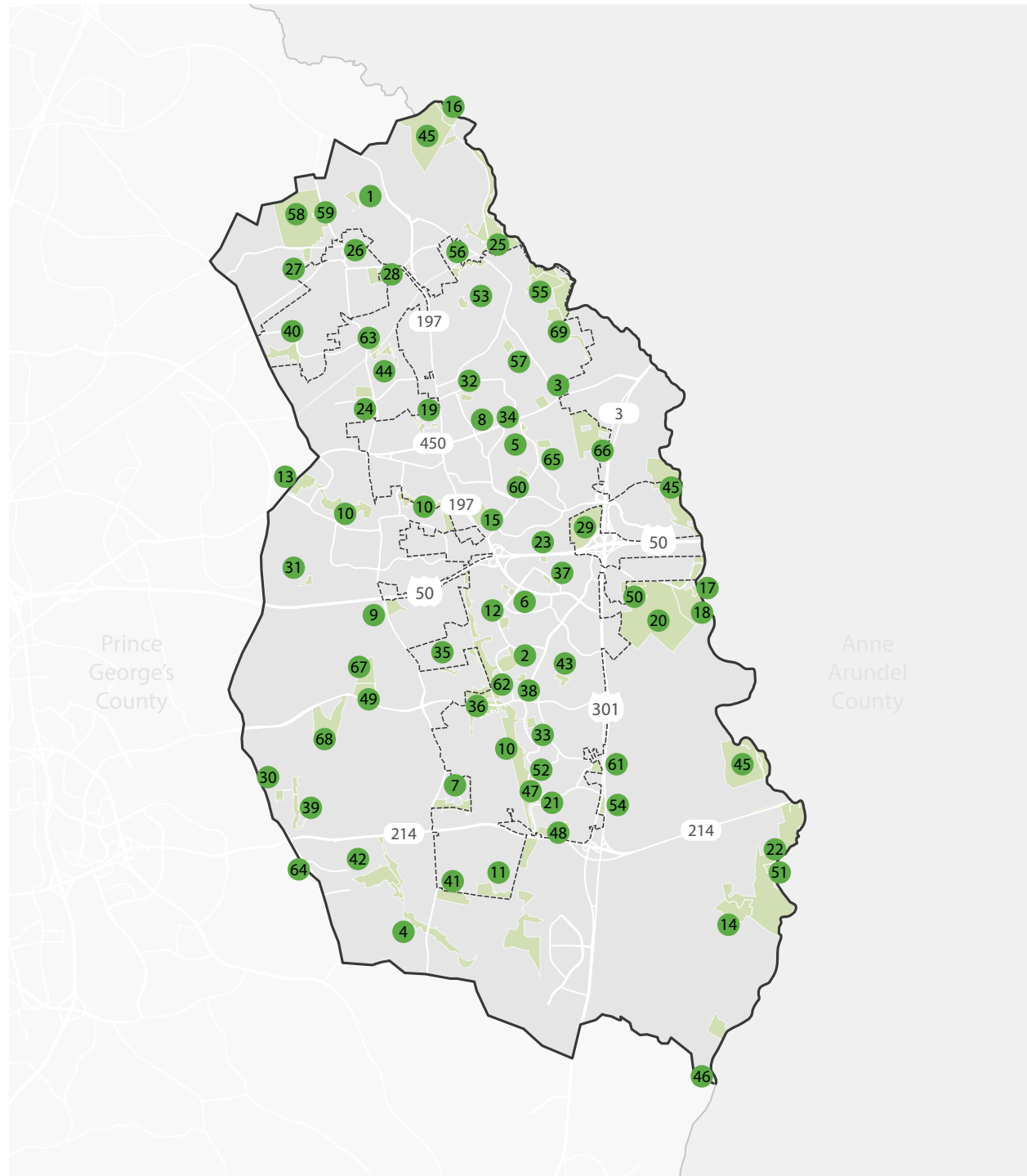
Figure 89. Asset Inventory Table: Archeological Sites

ID	Property Name	Acreage
1	Ashleigh Station	18.5
2	Baldwin Acres	11.0
3	Cedar Hill Subdivision	3.9
4	Citizens LLC	41.6
5	Clagett Landing	38.1
6	Collingbrook Property Phase I	10.2
7	Dixon Property East	26.6
8	Dixon Property West	18.0
9	Enclave at Beechfield	84.8
10	Fairwood Development Phase II	2.5
11	Fairwood-Phase II-Part II	319.9
12	Hall Road Property Phase I	19.5
13	KB Woodmore Development Project Phase I	10.1
14	Kenhill Drive to MD 450 Relocated	24.8
15	Locust Hill	541.2
16	Lonergan Property	22.9
17	Melford Property	99.3
18	Mill Branch Crossing	71.6
19	Mill Branch Property	111.1
20	Mills Property	21.1
21	Oak Creek Club	930.3
22	Park Development	92.0
23	Pheasant's Ridge	12.6
24	Pleasant Prospect Plantation Property	250.1
25	Poplar Ridge	18.7
26	Proposed Action Park Development	91.0
27	Roberts Property	47.6
28	Rodenhauser Property Phase I	70.2
29	Seven Hills Development	1.6
30	Temple of Praise Church	10.2
31	Temple of Praise Church	6.2
32	Trinity Community Church of Bowie	7.5
33	Willow Grove Site	208.8
34	Willow Pond Property	76.1
35	Willowbrook Property IB	441.3
36	Woodmore Property Phase I	24.5

Source: GIS Data Catalogue, Prince George's County Planning Department.

Appendix G. Asset Inventories: Healthy Communities

Map 91. Asset Inventory Map: Parks



5 Park

Focus Area

City of Bowie

Park

Source: Prince George's County Planning Department.

Figure 90. Asset Inventory: Parks

Id	Park Id	Park Name	Owner	Acreage	Active Recreation	Trail
1	O30	Adnell Park	M-NCPPC	12.4	No	No
2		Allen Pond Park	MUNI	0.8	Yes	Yes
3	O62	Archer Tract Park	M-NCPPC	13.0	No	No
4	B07	Black Branch Stream Valley Park	M-NCPPC	96.8	No	Yes
5	O97	Bowie Community Center*	MUNI	2.7	Yes	No
6		BOWIE GYMNASIUM	MUNI	48.9	Yes	No
7	O61	Church Road Park	M-NCPPC	31.5	Yes	Yes
8		CITY OF BOWIE - OPEN SPACE	MUNI	3.0	No	No
9	B00	Collingbrook Park	M-NCPPC	21.1	No	No
10	R24	Collington Branch Stream Valley Park	M-NCPPC	779.6	Yes	Yes
11	O24	Collington Station Park	M-NCPPC	31.0	Yes	No
12	O33	Enfield Chase Park	M-NCPPC	10.4	Yes	Yes
13	B13	Fairwood Park	M-NCPPC	29.9	Yes	No
14	O56	Four-H Center	M-NCPPC	60.6	No	No
15	O51	Foxhill Park	M-NCPPC	44.6	Yes	Yes
16	O80	Fran Uhler Park	M-NCPPC	28.0	No	Yes
17	O69	Gardner Canoe Launch	M-NCPPC	7.0	No	Yes
18	O14	Governor Bridge Park	M-NCPPC	85.7	No	Yes
19	B11	Grady's Walk Park	M-NCPPC	11.4	No	No
20	R79	Green Branch Athletic Complex	M-NCPPC	348.0	No	Yes
21	B01	Hansel and Gretel Park	M-NCPPC	0.3	Yes	No
22	B99	Hazelwood Historic Site	M-NCPPC	5.4	No	No
23	O84	Heather Hills Park	M-NCPPC	4.0	Yes	No
24	O74	Highbridge Park	M-NCPPC	19.1	Yes	Yes
25	O87	Horsepen Park	M-NCPPC	4.2	No	No
26	O15	Huntington Community Center	MUNI	1.2	Yes	No
27	O21	Huntington North Park	M-NCPPC	10.0	Yes	Yes
28	O63	Huntington South Park	M-NCPPC	18.4	Yes	Yes
29	O89	Kenilworth Park at Belair	M-NCPPC	98.9	No	No
30	B10	Kingsford Park	M-NCPPC	8.7	Yes	No
31	O10	Marleigh Park	M-NCPPC	6.2	Yes	Yes
32	O23	Meadowbrook Park	M-NCPPC	7.0	Yes	No
33	O93	Mitchellville South Park	M-NCPPC	9.1	Yes	Yes
34		Model Homes Strip	MUNI	3.4	No	No
35	B20	Mt. Oak Manor Park	M-NCPPC	6.9	No	No
36	B16	Mt. Oak Park	M-NCPPC	79.4	No	No
37	O66	New Town Park	M-NCPPC	4.8	Yes	No
38	B12	North Oak Court Park	M-NCPPC	6.0	Yes	No

Id	Park Id	Park Name	Owner	Acreage	Active Recreation	Trail
39	O88	Northeast Branch Stream Valley Park	M-NCPPC	29.9	No	No
40	O52	Northridge Park	M-NCPPC	35.3	No	Yes
41	O58	Oak Creek East Park	M-NCPPC	36.8	No	No
42	B21	Oak Creek West Park	M-NCPPC	56.7	Yes	Yes
43	O43	Oaktree Park	M-NCPPC	9.8	Yes	Yes
44	O28	Old Chapel Park	M-NCPPC	14.4	No	Yes
45	O26	Patuxent River Park II	M-NCPPC	1084.4	No	Yes
46	O38	Patuxent River Park III	M-NCPPC	3843.8	No	No
47	R73	Pointer Ridge Park	M-NCPPC	4.6	No	No
48	R75	Pointer Ridge South Park	M-NCPPC	21.6	No	No
49	O42	Prince George's Boys & Girls Club— Woodmore Road	Boys and Girls Club	40.0	Yes	No
50	O54	Prince George's Stadium	M-NCPPC	29.9	Yes	No
51	O65	Queen Anne Bridge Fishing Area	M-NCPPC	2.0	Yes	No
52	R84	Quiet Meadows Park	M-NCPPC	2.6	Yes	Yes
53	B09	Rockledge Park	M-NCPPC	8.5	Yes	No
54	O78	US 301 Median Strip	M-NCPPC	7.8	No	No
55	R74	Saddlebrook East Park	M-NCPPC	49.7	Yes	Yes
56	O13	Saddlebrook West Park	M-NCPPC	18.7	No	Yes
57	O08	Samuel Ogle Park	M-NCPPC	9.9	Yes	Yes
58	O82	Sandy Hill Creative Disposal Area	M-NCPPC	237.9	No	No
59	O73	Sandy Hill Park	M-NCPPC	7.0	No	No
60	R80	Somerset Park	M-NCPPC	5.0	Yes	Yes
61	O19	South Bowie Community Center*	M-NCPPC	10.8	Yes	No
62	O83	Springlake Park	M-NCPPC	10.7	Yes	No
63	O34	WB&A Railroad Trail	M-NCPPC	127.0	No	Yes
64	O70	Watkins Regional Park	M-NCPPC	794.4	No	No
65	O92	White Marsh Branch Park	M-NCPPC	11.0	Yes	Yes
66		Whitemarsh Park (City of Bowie)	MUNI	0.3	Yes	Yes
67	O01	Woodmore Road Park	M-NCPPC	42.3	No	No
68	O35	Woodmore South Park	M-NCPPC	102.0	No	No
69	B18	Yorktown Park	M-NCPPC	45.8	No	Yes

*Facilities expansion recommended in Formula 2040 Plan.

MUNI: Municipally-owned by the City of Bowie.

Source: GIS Data Catalogue, Prince George's County Planning Department.

BOWIE-MITCHELLVILLE AND VICINITY MASTER PLAN



Natural Environment Existing Conditions Report

August 2020



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PURPOSE OF THE REPORT

The purpose of this report is to provide a compilation of readily available environmental existing conditions information for the Bowie-Mitchellville and Vicinity master plan area. *Plan Prince George's 2035 General Plan* (Plan 2035) has designated parts of the northern and eastern portions of the master plan area as part of the Rural and Agricultural Areas policy area. The remainder of the master plan area is within Plan 2035's Established Communities policy area. The information in this report is intended to be used by Planning Department staff to understand the technical basis for the recommendations and implementable action steps in the Bowie-Mitchellville and Vicinity Master Plan.

Publicly available sources of information were used to develop the report's contents. This information

is general in nature and has not been completely verified. Specific questions regarding individual properties being evaluated should be addressed to the various agencies listed at the back of this report. Additional information on specific properties being evaluated, as well as areas of those properties that are developable and areas required to be preserved, may be obtained from an approved Natural Resource Inventory (NRI). NRIs are prepared in conformance with the Environmental Technical Manual (ETM). Information on NRIs and the ETM is available on the Prince George's County Planning Department website, www.pgplanning.org.

MASTER PLAN AREA DESCRIPTION

The Bowie-Mitchellville and Vicinity master plan area covers approximately 37,670 acres, or 59 square miles, representing 12 percent of the land area of Prince George's County. The master plan area is generally contained within the area framed by the Patuxent Research Refuge to the north, MD 193 (Enterprise Road) to the west, Leeland and Queen Anne Roads to the south, and the Patuxent River to the east. US 301 and MD 3 (Robert S. Crain Highway) generally bisect the master plan area from the north to the south, while MD 450 (Annapolis Road), US 50 (John Hanson Highway), and MD 214 (Central Avenue) generally bisect the master plan area from the west to the east (see Map 1). These are some of the major transportation corridors in the area.

The master plan area is located within Councilmanic Districts Four, Six, and Nine and Planning Areas 71A, 71B, 74A, and 74B. It consists predominantly of single-family residential communities with multifamily residential housing mainly near Bowie City Hall and in the Heather Ridge area near the US 301/MD 197 intersection. Some of the residential development was already well established in the Levittown area north of US 50 by 1965. Commercial corridor activity is largely in the hubs along US 301 and US 50, and there is some industrial development in Collington to the south.

Residential development is now concentrated mostly in the area between US 301 and MD 197, on high ground that creates a drainage divide between the

Middle Patuxent River and the Collington Branch/Horsepen Branch watersheds. The development impacts stream systems in these watersheds because of the high percentage of impervious surfaces and soil compaction that limits infiltration. In many areas, runoff from impervious surfaces enters receiving streams directly or via concrete or metal pipes (see Figures 1 and 6).

Well-drained soils of the Collington-Wist, Marr-Dodon, Annapolis, and Adelphia groups cover nearly 60 percent of the master plan area, concentrated south of MD 450. North of MD 450 there are small pockets of poorly drained Zekiah, and Issue soils associated with streams generally, and there are Whitewater and Issue soils associated with floodplains and other frequently flooded areas near the Patuxent River, Collington Branch stream, and tributaries to Northwest Branch. The southwestern (Collington) portion of the master plan area overlays extensive areas of Marlboro and Christiana clays.

- The master plan area contains properties with previously approved Natural Resource Inventories and Tree Conservation Plans. These should be consulted prior to the preparation of new development applications.



Figure 1. (Left) Part of a roadway and unshaded surface parking lot near Baysox Stadium; (Right) Stormwater channeled to a stream via a metal pipe. Note the potential for siltation of the stream.

ENVIRONMENTAL INFORMATION AND STATISTICS

The following statistics were derived from a template developed using GIS software to clip information from specified GIS data layers. Unless otherwise noted, most of the GIS data layers are from the 2009 planimetric data capture. Planimetric data capture or planimetric mapping is the process of obtaining information about terrain using an aircraft to fly over an area and record the horizontal position of features such as roads, buildings, and bodies of water on the landscape below.

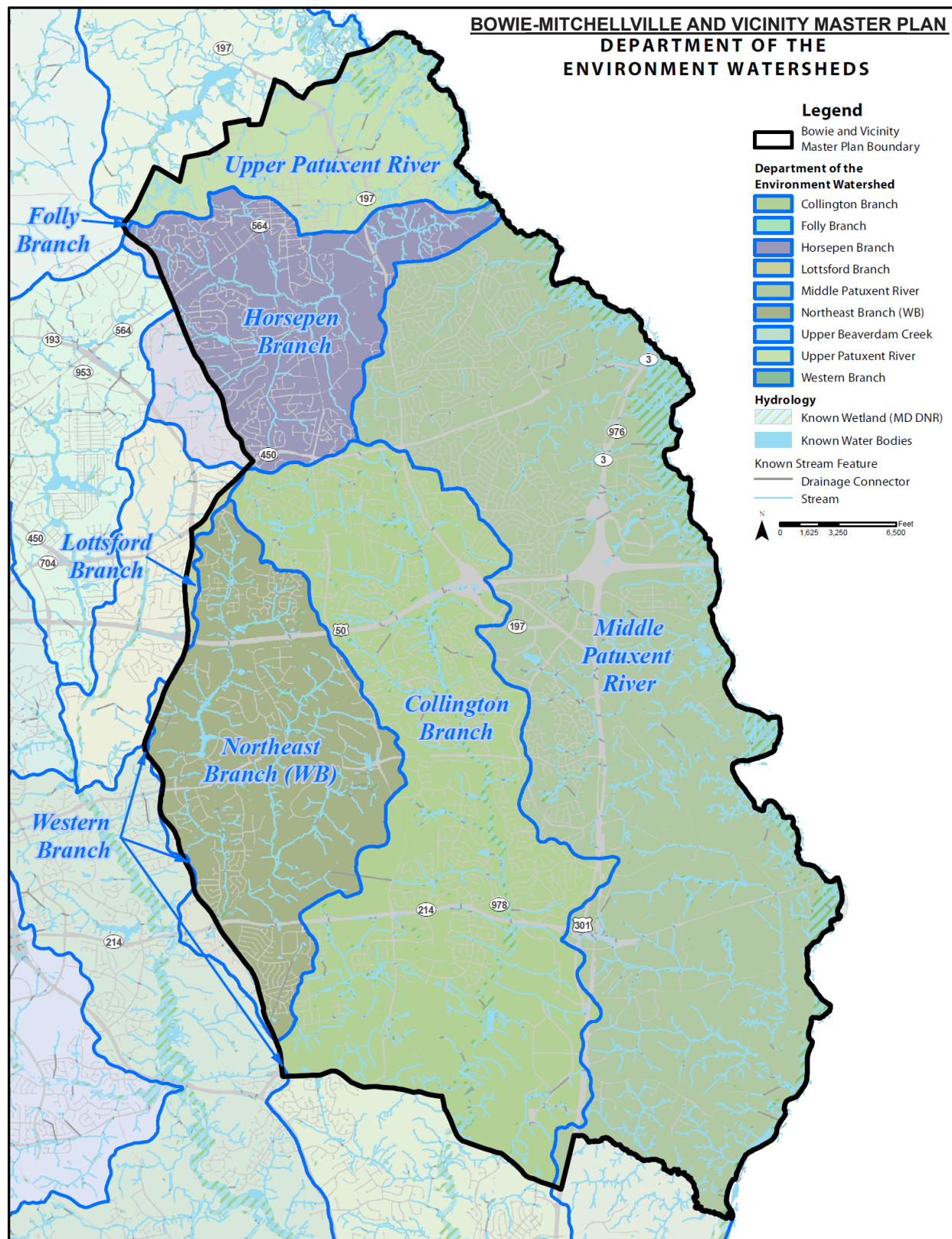
Watershed Data

The master plan area lies within nine watersheds in the Patuxent River basin: Upper Patuxent River and Horsepen Branch to the north, Northeast Branch to the west, Collington Branch in the center and south, and Middle Patuxent River to the east. Very small portions of the master plan area to the north, west, and south are within the Upper Beaverdam Creek, Folly Branch, Lottsford Branch, and Western Branch watersheds, respectively. The relative acreages of these watersheds are shown in Table 1, while their locations in relation to the master plan area boundaries are illustrated in Map 1.

Table 1. Watersheds Countywide and within the Master Plan Area

Watershed	Watershed Area within the County (acres)	% of County	Watershed Area within the Master Plan Area (acres)	% of Plan Area
Collington Branch	14,820.55	4.64	10,274.93	27.28
Folly Branch	4,091.22	1.28	0.02	≤0.01
Horsepen Branch	4,318.42	1.35	3,670.37	9.74
Lottsford Branch	2,165.16	0.68	123.21	0.33
Middle Patuxent River	22,261.86	6.96	15,646.36	41.54
Northeast Branch (WB)	5,557.53	1.74	5,255.54	13.95
Upper Beaverdam Creek	9,047.30	2.83	4.48	0.01
Upper Patuxent River	11,370.77	3.56	2,649.44	7.03
Western Branch	19,030.58	5.95	12.17	0.03
TOTAL	92,663.39	28.98	37,636.52	100.00

Map 1. Bowie-Mitchellville and Vicinity Plan Area Watersheds



The Patuxent River, forming the master plan area's eastern boundary, is a major tributary to the Chesapeake Bay and one of three main river drainages for Central Maryland (along with the Potomac River to the west and the Patapsco River to the northeast). The Patuxent is the longest and largest river entirely within Maryland and its watershed is the largest completely within the state. US 301, US 50, and MD 214 are three main transportation corridors crossing the southern section of the Patuxent River watershed. The nontidal portion of the Patuxent River Upper watershed is from MD 214 north.

The Patuxent River crosses the highly urbanized corridor between Baltimore and the District of Columbia. Urban runoff, agriculture, and unchecked erosion from rapid development within upstream areas of the watershed in the 1960s and 1970s have contributed to current issues with pollution, sedimentation, and siltation in the river's downstream areas. Habitat quality has also degraded over time. The Patuxent River is subject to state and federal pollution limits addressing its poor water quality and restoring its ecosystems.

Within Prince George's County, the Patuxent River falls under three (8-digit, Hydrologic Unit Code) watersheds: Patuxent River Upper, Patuxent River Middle, and Patuxent River Lower. Patuxent River Upper is impaired for chlorides, sulfates, bacteria, and total suspended solids (TSS). Patuxent River Middle is impaired for sulfates and TSS¹. Patuxent River Lower is impaired for TSS. Additionally, bay impairments are also listed along the Patuxent River because it is within the Chesapeake Bay Watershed.

Regulatory Pollution Limits in the Patuxent River

When streams and rivers reach certain levels of pollution, the U.S. Environmental Protection Agency (EPA) places them on a national (303d) list of impaired waters and may set standards that must be met to restore water quality. These standards are called total maximum daily loads (TMDLs) and are set statewide by major river basins. TMDLs are a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. Watershed Implementation Plans (WIPs) are then created to improve water quality to meet or exceed the standards.

The EPA established a TMDL for total nitrogen (TN), total phosphorus (TP), and total suspended solids (TSS) for the Chesapeake Bay in 2010. The Patuxent



Figure 2. A section of the Patuxent River (Middle) near Governors Bridge Road, Bowie (section impaired for TSS and sulfates).

River basin drains to the Chesapeake Bay; therefore, all three segments of the Patuxent River are subject to the Bay TMDLs. These TMDLs are divided among the relevant jurisdictions within the basin leaving each with certain responsibilities for addressing the issue

Each jurisdiction has also created WIPs to improve water quality to meet or exceed their designated TMDL. Due to stream degradation, the Patuxent River has also been placed on the national list of impaired waters. Separate (nonbay) TMDLs for bacteria and TSS have also been established for the Patuxent River Upper segment.

Portions of the master plan area may be developed over the life of this plan, presenting many opportunities to address the TMDLs as development occurs. Stormwater management requirements current at the time of the development, and the use of environmental site design to the maximum extent practicable, must be incorporated as standard practices to address water quality as development occurs.

The Bowie-Mitchellville and Vicinity master plan area is already making significant efforts to address water quality issues. Compliance with current stormwater management regulations to treat the first inch of stormwater onsite.

¹ TSS are fine particles of sediment (soil, biological solids, decaying organic matter) larger than 2 microns, suspended in the water.

Water Quality

Forest and tree canopy coverage and the amount and locations of impervious surfaces are the two main elements that impact water quality within a watershed. Tree canopy coverage in the master plan area is relatively high (38 percent), but the amount of imperviousness is also high at 20 percent, implying that more than a quarter of the master plan area's watersheds might be developed. While the high tree canopy coverage is advantageous, the high imperviousness and compacted soils, especially in the central portion of the master plan area, result in excessive, rapid stormwater runoff into the receiving streams and wetlands. The impact of agricultural lands can also be detrimental to water quality when no protection measures are implemented. These all contribute to the poor and very poor water quality narrative ratings shown in Table 2 as reported in 2003 *Biological Assessment and Monitoring of Streams and Watersheds in Prince George's County*.

A reassessment done through the 2017 *Prince George's County Resource Conservation Plan* showed slightly improved watershed habitat condition ratings for Horsepen Branch (from poor to fair), Upper Patuxent River (from poor to fair), and Middle Patuxent River (from poor to fair) for the stream reach north of MD 214," with conditions being the same or worse elsewhere.

Aerial photos of the master plan area in 1938 (Figure 3) and 1965 (Figure 4) show the area's transformation from farm fields, woodlands, and a scattering of residential development, to high imperviousness. The land use change is especially striking in the central core, the western boundary areas, and a network of stream systems—most of which remain.

Most of this land was developed by the 1970s, before the adoption of environmental regulations regarding woodland conservation, stormwater management, or stream, wetland, and floodplain protections. Without these important controls, stream buffers were removed, wetlands were filled, some streams were channelized, and multiple stream crossings were constructed using standard culverts to access more land for development. This process was also accompanied by the creation of large areas of impervious surfaces.

Without the presence of forests and trees to manage stormwater runoff or mimic predevelopment conditions, rainwater is unable to infiltrate into the ground. Instead, the water flows off impervious surfaces during rain events, carrying loose soil, trash, debris, and pollutants such as fuel and oil from vehicles, which it deposits into storm drains

Table 2. Water Quality Data by Watershed

Watershed	Watershed Condition Rating (2017)	Water Quality Rating (2005)
Collington Branch	Very Poor	Poor
Folly Branch	Very Poor	Very Poor
Horsepen Branch	Fair	Poor
Lottsford Branch	Very Poor	Very Poor
Middle Patuxent River	Fair (North of MD 214); Poor (South of MD 214)	Poor
Northeast Branch (WB)	Very Poor	Poor
Upper Beaverdam Creek	Very Poor	Poor
Upper Patuxent River	Fair	Poor
Western Branch	Very Poor	Poor

Source: 2017 Resource Conservation Plan (p.39);
2005 Green Infrastructure Plan (p.30).

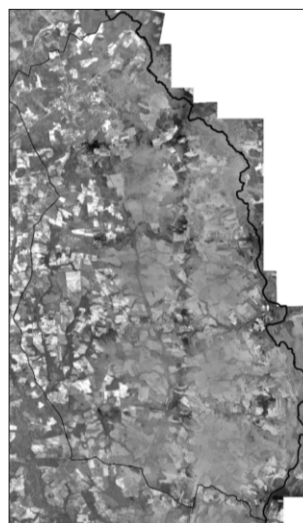


Figure 3. Master Plan Area Land Use, 1938

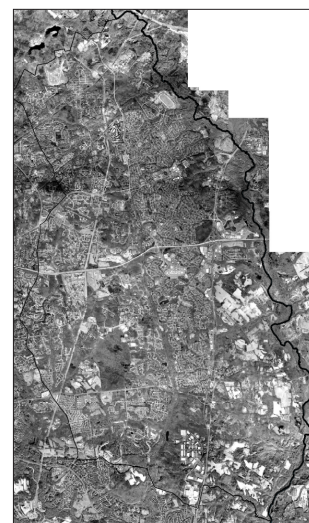


Figure 4. Master Plan Area Land Use, 1965

or directly into the receiving wetlands and streams. The more impervious surfaces there are on a site, the more run-off there is during storm events. Fecal bacteria, sediments, nutrients, and man-made organic chemicals such as polychlorinated biphenyls (PCBs), carried in stormwater, contribute to the degraded habitat conditions that are typical of urban streams.

Structural problems such as deep ravines, failing slopes, and severe erosion of the streams, wetlands, and floodplains downstream, can result from high volumes of stormwater from development entering receiving streams. Figure 7 shows a deeply incised stream within the Middle Patuxent River watershed



Figure 5. Stormwater from roadway and nearby parking lot in Bowie.



Figure 6. In parts of the plan area, stormwater from roadways and other impervious surfaces is channeled directly into receiving streams via concrete storm drains, severely impacting fragile ecosystems, as illustrated in Figure 7.



Figure 7. Green Branch tributary near US 301, showing stream channel erosion caused by the conveyance of significant volumes of stormwater.

that functions mainly for stormwater conveyance. The siltation of local streams can be substantially reduced if steps are taken to protect soils from erosion by stormwater. Placing of riprap boulders at pipe outlets (see Figure 8) is a common method used to protect stream banks and drainage canals.

Additionally, in keeping with current stormwater regulations, many parts of the master plan area contain environmental site design (ESD) features to treat stormwater onsite prior to its release to the storm drain system (see Figures 8 and 9). Current stormwater regulations include requirements for dealing with the water quality volume (WQV) on a site (i.e., the runoff volume) including 90 percent of all rainfall events each year. Per these regulations, disturbance (e.g., grading) of an area of land greater than 5,000 square feet requires a stormwater management plan, while redevelopment of an existing developed site must be designed to treat 100 percent of the WQV from all impervious area within the proposed disturbed area.

For new development, the first inch of rainwater must be treated onsite. Map 2 shows parts of the County (including the master plan area) where development design must provide for management of the 100-year storm onsite, during site development.

STRONGHOLD WATERSHEDS

Stronghold watersheds are those watersheds in the State of Maryland where rare, threatened, or endangered species of fish, amphibians, reptiles, or mussel species identified by the Maryland Biological Stream Survey, occur in the highest numbers and the greatest frequency. Stronghold watersheds are considered very important for the long-term protection of Maryland's aquatic biodiversity. Special protection of these watersheds is necessary to ensure the survival of these imperiled aquatic fauna. Prince George's County contains 19 stronghold watersheds.

- The State of Maryland has designated the Patuxent River (including its main plan area tributaries: Patuxent River Upper, Patuxent River Middle, Horsepen Branch, Collington Branch, and Northeast Branch watersheds) as a stronghold watershed.

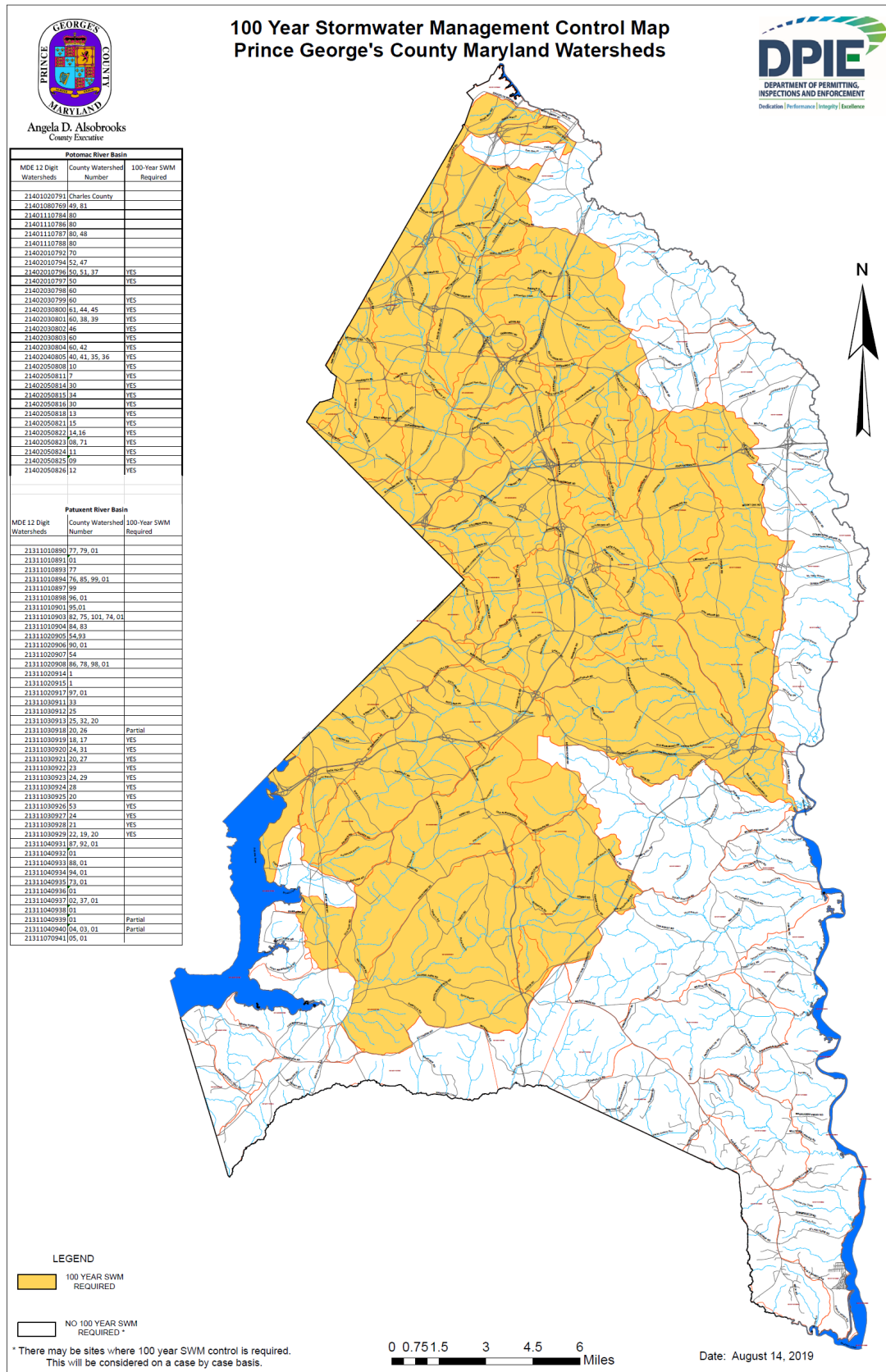


Figure 8. Part of the Bowie Town Center showing ESD technique to treat stormwater prior to its release to the storm drain system.



Figure 9. Functioning ESD stormwater feature at Bowie Town Center.

Map 2. 100-Year Stormwater Management Control Map for Prince George's County



Source: DPIE

SENSITIVE SPECIES PROJECT REVIEW AREAS

Sensitive Species Project Review Areas (SSPRAs) are a digital map layer created by the staff of the Wildlife and Heritage Service (WHS) of the Maryland Department of Natural Resources. This data layer represents the general locations of most state-regulated and documented rare, threatened, or endangered species. It provides guidance only on the presence or absence of these species at a given location. The SSPRA data layer

is revised regularly to incorporate new information obtained by WHS field surveys.

- There are SSPRAs in parts of all the watersheds within the master plan area. A digital copy of the SSPRA layer is available at DNR's data download site: <http://dnrweb.dnr.state.md.us/gis/data>.



Figure 10. Strategic placing of riprap boulders to help prevent stream channel and streambank erosion. (Compare this photo with Figure 1.)

Known Streams, Wetlands, and Floodplain Delineations

- There are about 400 miles (2,153,407 linear feet) of known streams, 2,175 acres of known wetlands, and 2,946 acres of FEMA² floodplain within the master plan area.
- There are approximately 180 acres of Wetlands of Special State Concern (WSSC) within the master plan area.

This report includes all stream features found in the GIS layer in its calculation of linear feet of known streams. These features are described as “known” because there may be streams and wetlands in the area that are currently unidentified. Some of these stream centerlines may represent piped or otherwise hidden streams. Information regarding streams and their buffers, wetlands and their buffers, severe slopes, and other regulated environmental features must be verified through the NRI review and approval process.

The master plan area’s main streams are the Patuxent River forming the eastern boundary, Collington Branch in the central core, Northeast Branch on the western portion, and Horsepen Branch to the north. There are approximately 2,300 acres of wetlands associated with these stream systems. The location of these environmental resources is shown in Table 3 and illustrated in Map 3.

MARYLAND TIER II CATCHMENTS/ WATERSHEDS

Tier II catchments are nontidal watersheds that exceed minimum applicable water quality standards and criteria. They are under antidegradation regulations (under COMAR 26.08.02.04) that set standards to protect and enhance water quality. These catchments are identified based on fish and benthic indices of biotic integrity.

Within Tier II catchments, Tier II streams or high-quality waters exceed applicable water quality standards. Their designation is based on having healthy biological communities as determined by the Maryland Biological Stream Survey data (for both fish and macroinvertebrate). Tier II waters may require additional regulatory protections such as environmental site design, wider stream buffers, special permit conditions, pre/post project monitoring, and/or other appropriate measures to make sure that biological integrity is maintained.

The Horsepen Branch and Upper Patuxent River Watersheds in the northern portion of the master plan area are within the broader Patuxent River (Upper) Watershed which is a designated Tier II Watershed. However, there are no designated Tier II waters within the master plan area.

2 Federal Emergency Management Agency (FEMA).

Table 3. Known Streams, Wetlands and Floodplains within the Master Plan Area*

Watershed	Known Streams (linear feet)	Known Wetlands (acres)	FEMA100-Year Floodplain (acres)
Collington Branch	526,788.52	411.62	569.13
Folly Branch	0.00	0.00	0.00
Horsepen Branch	183,022.79	68.41	146.92
Lottsford Branch	157.65	0.74	0.00
Middle Patuxent River	905,318.24	1,196.78	1,621.52
Northeast Branch (WB)	339,561.19	191.39	246.79
Upper Beaverdam Creek	15.41	0.00	0.00
Upper Patuxent River	198,429.85	306.81	361.98
Western Branch	113.76	0.00	0.00
TOTAL	2,153,407.41	2,175.75	2,946.34

*The information in this table and on maps in this report regarding the known streams and wetlands within the master plan area was provided by the Maryland Department of Natural Resources and has not been completely field tested. The data should be considered conceptual and for planning purposes only.

Wetland mapping information from the Department of Natural Resources shows about 2,628 acres of known wetlands in the master plan area (see Table 3). About half of the master plan area's wetlands are associated with the Middle Patuxent River watershed. An updated floodplain study will likely be required before development can occur on any property where the County floodplain is shown, or on properties having streams with a drainage area of 50 acres or greater.

WETLANDS OF SPECIAL STATE CONCERN

Wetlands of Special State Concern (WSSC) are nontidal³ wetlands of very high ecological and educational value. They are the best examples of Maryland's nontidal wetland habitats and many contain the last remaining populations of native plants and animals that are now rare and threatened with extinction in the state. WSSC wetlands receive special protection under the state's nontidal wetlands regulations, including a minimum 100-foot-wide buffer. There are approximately 180 acres of WSSC wetlands at three locations within the master plan area:

1. Within the Belt Woods Special Conservation Area in the southwestern portion of the master plan area, north of Central Avenue, and west of Six Flags America. In that location, WSSC wetlands occur in areas of poorly drained Widewater and Issue soils in frequently flooded areas along the Northeast Branch stream system. Small patches of WSSC wetlands also occur further north along Northeast Branch streams within the Belt Woods Natural Environment Area south of Woodmore Road.
2. In the Huntington Crest subdivision south of MD 197, within the Horsepen Branch Watershed.
3. The northern portion of the master plan area adjacent to the Patuxent Research Refuge and along the Patuxent River north of Lemon Bridge Road.

THE 100-YEAR FLOODPLAIN

Floodplains are low, flat lands immediately adjacent to streams, rivers, and other waterbodies, which are subject to periodic flooding. For informational purposes, floodplains are delineated in two ways. The Federal Emergency Management Agency (FEMA) periodically maps areas that are in or out of the 100-year (or "regulatory") floodplain based on current conditions and existing land uses within the watershed. Map 3 shows the delineation of the FEMA floodplain, which is used for insurance purposes.

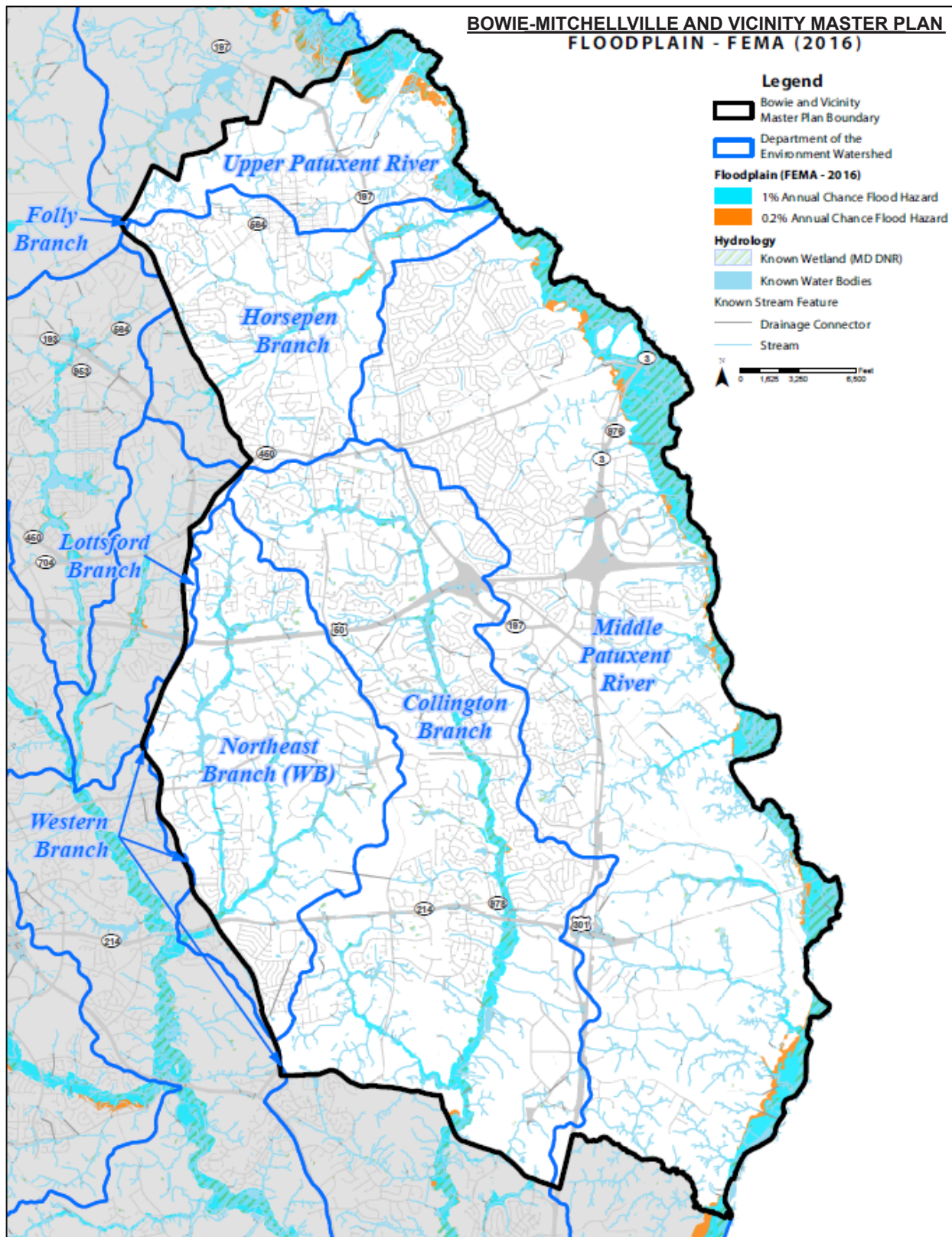
The second type of floodplain delineation considers both existing conditions and projected future development within the watershed based on the zoning of property. This delineation is called a "floodplain study" and it identifies the "development floodplain," used for development purposes. Floodplain studies usually result in a wider area of floodplain delineation than the FEMA floodplain because their analysis is based on ultimate development or build-out conditions in a watershed as opposed to the FEMA floodplain, which is based on present land use conditions. The most recent County Floodplain Study covered the Laurel area north of the master plan area; hence there are no County floodplain delineations for the master plan area.

Undisturbed floodplains are nonbuildable portions of a parcel that must be protected to the fullest extent possible; however, many parcels within the 100-year floodplain in the master plan area have already been developed. The degree of development allowable and the mitigation techniques required for stormwater and floodplain impacts from these parcels must be determined by the implementing agencies (DPIE, DoE) prior to development or redevelopment of these areas.

Where development in the floodplain is unavoidable, the County Floodplain Ordinance requires an equal volume of compensatory storage be provided. The approximate floodplain delineation based on the FEMA study is shown in Map 3. The County Floodplain Study did not cover the master plan area. A floodplain study may be needed to determine the ultimate limits of the 100-year floodplain based on existing and proposed development, at the time of land development application review.

³ Nontidal wetlands are inland, freshwater areas that are not subject to tidal influence. They typically occur where the land is covered by shallow water or where the water table is at or near the surface. Examples of nontidal wetlands are marshes, swamps, bogs, wet meadows, and the shallow edges of lakes and ponds.

Map 3. Bowie-Mitchellville and Vicinity Known Streams, Known Wetlands, and FEMA Floodplain Delineation



Countywide Green Infrastructure Network

- About 25,000 acres or 66 percent of the master plan area are within the 2017 Green Infrastructure Network.

In 2017 Prince George's County adopted the *Approved Prince George's County Resource Conservation Plan: A Countywide Functional Master Plan*, which replaced the 2005 *Green Infrastructure Plan*.⁴ The 2017 plan builds on the policies and strategies of the 2005 plan to achieve the County's long-term vision of an interconnected network of significant countywide environmental features that retain ecological functions, maintain or improve water quality and habitat, and support the desired development pattern of Plan 2035. The 2017 *Green Infrastructure Plan* (GIP), housed within the 2017 Resource Conservation Plan, used the same general guidelines to update the green infrastructure network:

- **Regulated Areas** are environmentally sensitive features such as wetlands and streams with their regulated buffers, the 100-year floodplain, and their adjacent steep slopes, that are protected (regulated) during the land development process by laws, guidelines, or regulations at the county, state, or federal level. Development of such areas is not permitted except for necessary construction of road crossings and the installation of public utilities. The features shown are the generalized (conceptual) locations of regulated landscapes. Their exact location must be confirmed at the Natural Resource Inventory (NRI) stage of the development review process.
- **Evaluation Areas** are lands outside the regulated areas that are not currently protected and may contain sensitive features such as upland forest, interior forest, unique habitats, and the environmental settings of cultural resources. While some of these areas are regulated by the County and/or the state, their exact location is not known because many of the layers used to develop them are conceptual in nature. These areas must be evaluated during the development review process to determine whether resources are present that need protection or whether there are suitable areas where mitigation could be used to expand existing or adjacent environmental resources.

The 2017 GIP expands and amends the strategies of the 2005 *Green Infrastructure Plan*, the 2010 *Water Resources Plan*, and Plan 2035. It also expands the definition of green infrastructure to include elements that "green" the built environment by introducing strategies to address green and open spaces, to preserve irreplaceable landscapes such as the designated SPAs, and ultimately to guide growth appropriately throughout the County, essentially ensuring the conservation of significant environmental features and the incorporation of green elements into all communities in support of a green economy. Significant improvements of the 2017 GIP over the 2005 *Green Infrastructure Plan* include:

- Prioritizing the restoration and protection of ecological green infrastructure elements inside the Capital Beltway.
- Acknowledging the importance of connecting wildlife corridors in urban areas to improve ecosystem services.
- Providing larger riparian buffers and shoreline protections.
- Protecting forests by removing invasive plants and avoiding the building of green stormwater infrastructure in forested places.
- Addressing the causes of climate change, sea level rise, and extreme weather events.
- Preserving and/or restoring stream health and functions.
- Requiring that only native trees that are supportive of habitat, and are long-lived, are transplanted.
- Adopting restrictions on hydraulic fracturing and other unsustainable energy sources.
- Requiring public projects to meet environmental requirements.
- Granting fewer exemptions from Tree Canopy Coverage Ordinance requirements.

The main acreages of regulated areas shown are mostly known streams and wetlands, regulated slopes, and the 100-year floodplain associated with the Middle Patuxent River, Collington Branch, and Upper

⁴ In 2005, Prince George's County adopted the *Approved Countywide Green Infrastructure Plan*, which identified a network of ecological resources that meet the designated criteria for countywide significance, throughout Prince George's County. In the 2005 plan the term 'green infrastructure' was used to define the connected system or network of significant environmental resources such as forests, waterways and other natural areas on public and private lands, which provide valuable ecological services for current and future generations. That plan also identified a conservation mechanism to preserve, protect and enhance these resources when certain development applications were proposed. It sought to preserve and improve water quality and a diversity of plant and animal species by reducing forest fragmentation and preserving habitat diversity through connection and enhancement.

Table 4. Green Infrastructure Network (2017)

Watershed	Acres of Regulated Areas	% of Plan Area	Acres of Evaluation Areas	% of Plan Area
Collington Branch	2,054.97	6.65	5,137.42	13.64
Folly Branch	0.00	0.00	0.00	0.00
Horsepen Branch	670.40	1.78	789.00	2.09
Lottsford Branch	0.02	≤0.01	33.05	0.09
Middle Patuxent River	4,633.11	12.30	5,644.77	14.99
Northeast Branch (WB)	1,010.19	2.68	2,619.74	6.96
Upper Beaverdam Creek	0.00	0.00	4.19	0.01
Upper Patuxent River	1,021.43	2.71	1,336.90	3.55
Western Branch	0.00	0.00	4.34	0.01
TOTAL	9,390.12	24.93	15,569.41	41.33

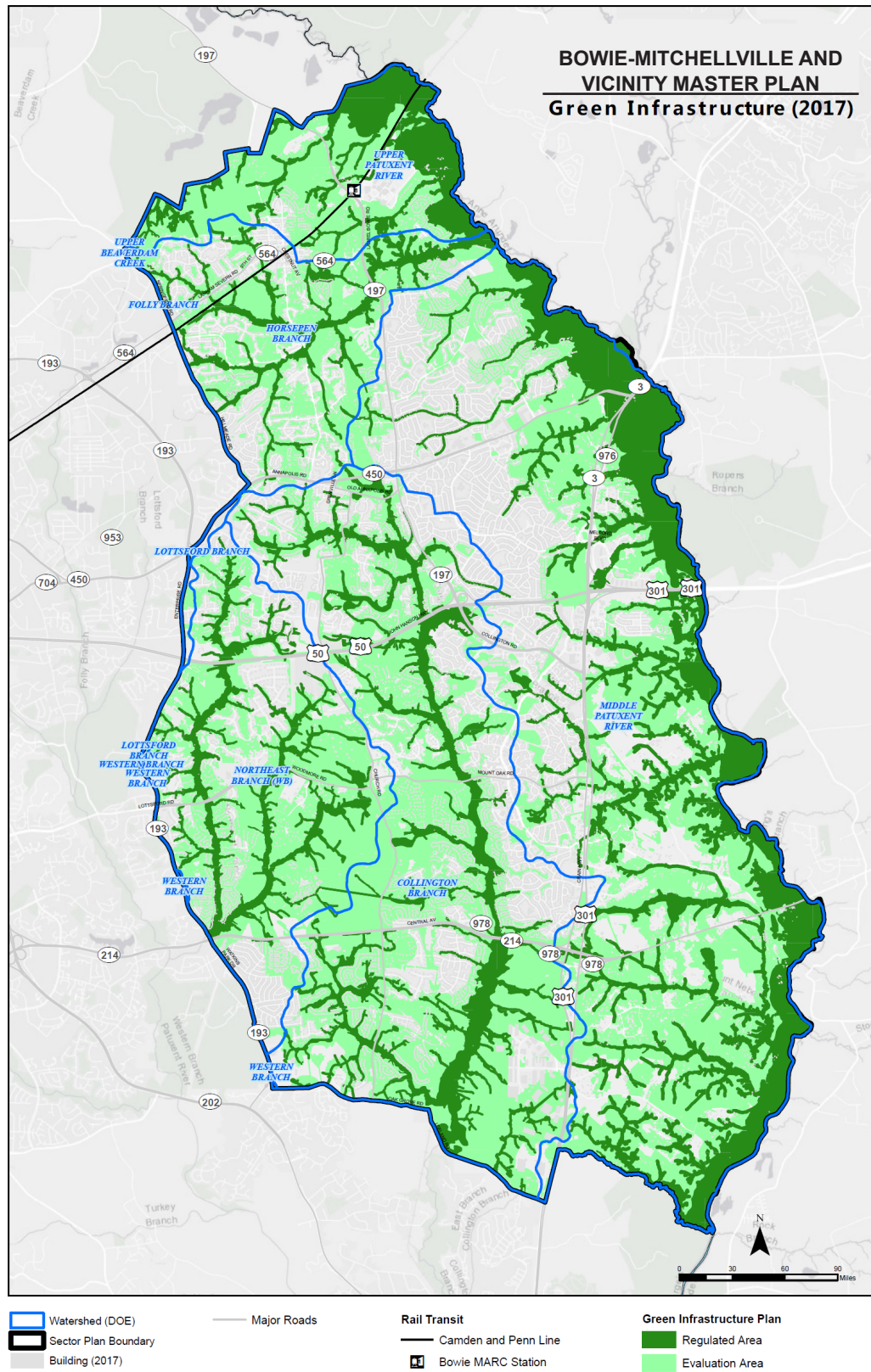


Figure 11. Wetlands associated with the Patuxent River mainstem, Patuxent River Park near Governor Bridge Road (top).

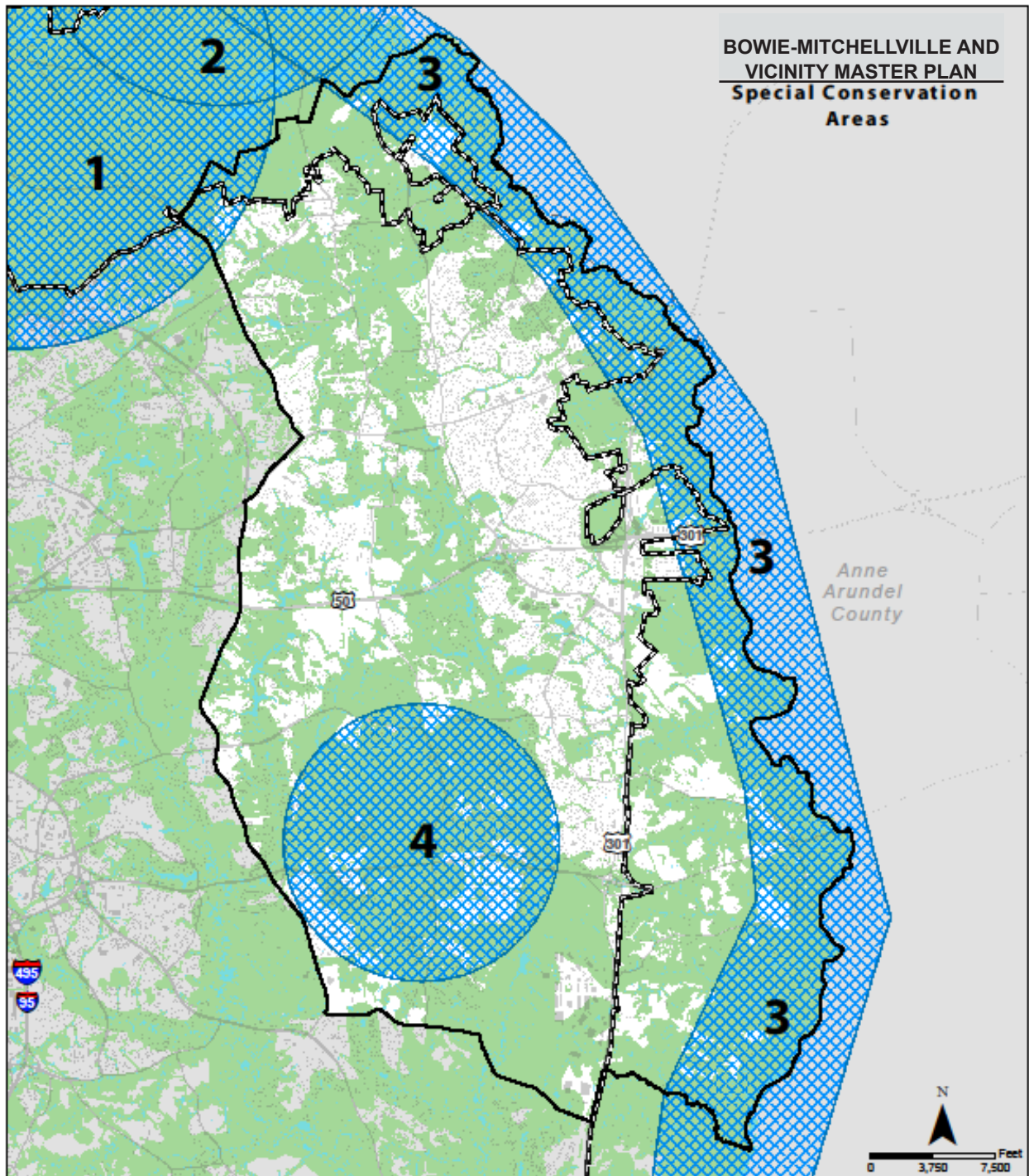
Figure 12. Some of the Master Plan area's woodlands are Regulated Areas within the Countywide Green Infrastructure Network.



Map 4. Green Infrastructure (2017)



Map 5. Location of Special Conservation Areas (SCAs) within the Plan Area



Legend

- | | | |
|---|-----------------------------------|--|
| Bowie and Vicinity Master Plan Boundary | Plan 2035 Growth Boundary | Special Conservation Areas |
| Building (2014) | 2017 Green Infrastructure Network | 1. Beltsville Agricultural Research Center |
| Known Water Body | | 2. Patuxent Research Refuge |
| Major Roads | | 3. Patuxent River Corridor |
| | | 4. Belt Woods |

Patuxent River Watersheds, as shown in Table 4. The designation is conceptual in nature and field work at the time of development applications may determine whether the boundaries need to be revised.

SPECIAL CONSERVATION AREAS

The GIP also named areas of specific countywide significance that need special attention. These areas, identified as special conservation areas (SCAs), are to be given careful consideration when land development proposals in their vicinity are reviewed to ensure that their ecological functions are protected or restored and that critical ecological connections to these areas are established or maintained. The northern, eastern, and southwestern portions of the master plan area are within the Beltsville Agricultural Research Center or BARC (1), Patuxent River Corridor (3), and Belt Woods (4) SCAs, respectively (see Map 5).

- **The Beltsville Agricultural Research Center (BARC)**, owned by the United States Department of Agriculture (USDA), is in the northern part of the County. At approximately 6,500 acres, it is one of the largest and most diversified agricultural research complexes in the world. BARC has experimental pastures, orchards, gardens, nurseries, fields for cultivated crops, forest ecosystems, and a wide variety of habitats that provide extensive opportunities for research. As part of the green infrastructure network's evaluation areas, future land use in the area should be carefully considered.
- **The Patuxent River Corridor**, known collectively as the Patuxent River Park, is a result of the Maryland Patuxent River Watershed Act's efforts starting in the 1960s, to encourage the seven counties bordering the Patuxent River to preserve the river's natural lands. M-NCPPC currently owns 7,400 acres of marshes, swamps, and woodlands along the river together with thousands of acres of protected lands owned by the Maryland Department of Natural Resources and other counties. This corridor is one of Maryland's key greenways and preservation of the natural environment and the river's scenic character are priorities along this corridor.
- **Belt Woods**, recognized by the National Park Service as a national natural landmark, is one of the few remaining old-growth upland forests in the Atlantic Coastal Plain. It is an upland hardwood forest dominated by tulip poplar and white oak that supports a dense and diverse bird population. It is reported that "the density of birds breeding at Belt Woods is

among the highest observed on the East Coast" (Resource Conservation Plan, 2017). This forest is supported by critical wildlife connections and WSSC that should be maintained and enhanced. Development in the vicinity of this landmark should be mindful of the needs of the flora and fauna of this unique community. Belt Woods is owned by the State of Maryland and managed by the Western Shore Conservancy.

Forest and Tree Canopy

- The master plan area still retains about 28,000 acres of forest and tree canopy, and an additional 107 acres of land classified as "barren" where trees could be planted if the properties are not developed.

Forest and tree canopy coverage is very important to protect air and water quality, and an area's sense of place. Trees help trap airborne fine particulates (such as pollen, dust, and those found in smoke and haze), provide shade which helps reduce urban heat island effect, reduces the thermal impacts of stormwater runoff, and reduces the overall quantity of stormwater runoff.

Comparative mapping of the master plan area in 1938 and 2009 show better connected, larger blocks of forest and tree canopy in 1938 and more forest fragmentation by 2009. The master plan area's northern and central core areas were most affected by this transition from farmland to development, with stream valleys in the Horsepen Branch, Upper Patuxent River, and Folly Branch watersheds showing an overall loss of tree canopy coverage between 1938 and 2017.

The Northeast Branch and Collington Branch watersheds, as well as headwaters areas of some Middle Patuxent River tributaries (e.g. Mill Branch, Green Branch) became visibly fragmented into scattered small patches from the area's development, by 2009. This development included the widening of local roads, the construction of MD 450, US 50, MD 197, MD 214, US 301, and the accompanying residential and commercial development.

Table 4 provides a summary of the master plan area's forest and tree canopy coverage in 1938, 2009, and 2017. The trends show an overall eight percent increase in forest and tree canopy coverage between 1938 and 2017 due in part, to street tree plantings, reforestation programs, and retention of large tracts of woodland at the Patuxent River Park, White Marsh, Belt Woods Natural Environment Area, and in the Agricultural and Rural Areas.

Figure 13. Plan Area Forest and Tree Canopy Coverage Trends, 1938 to 2009

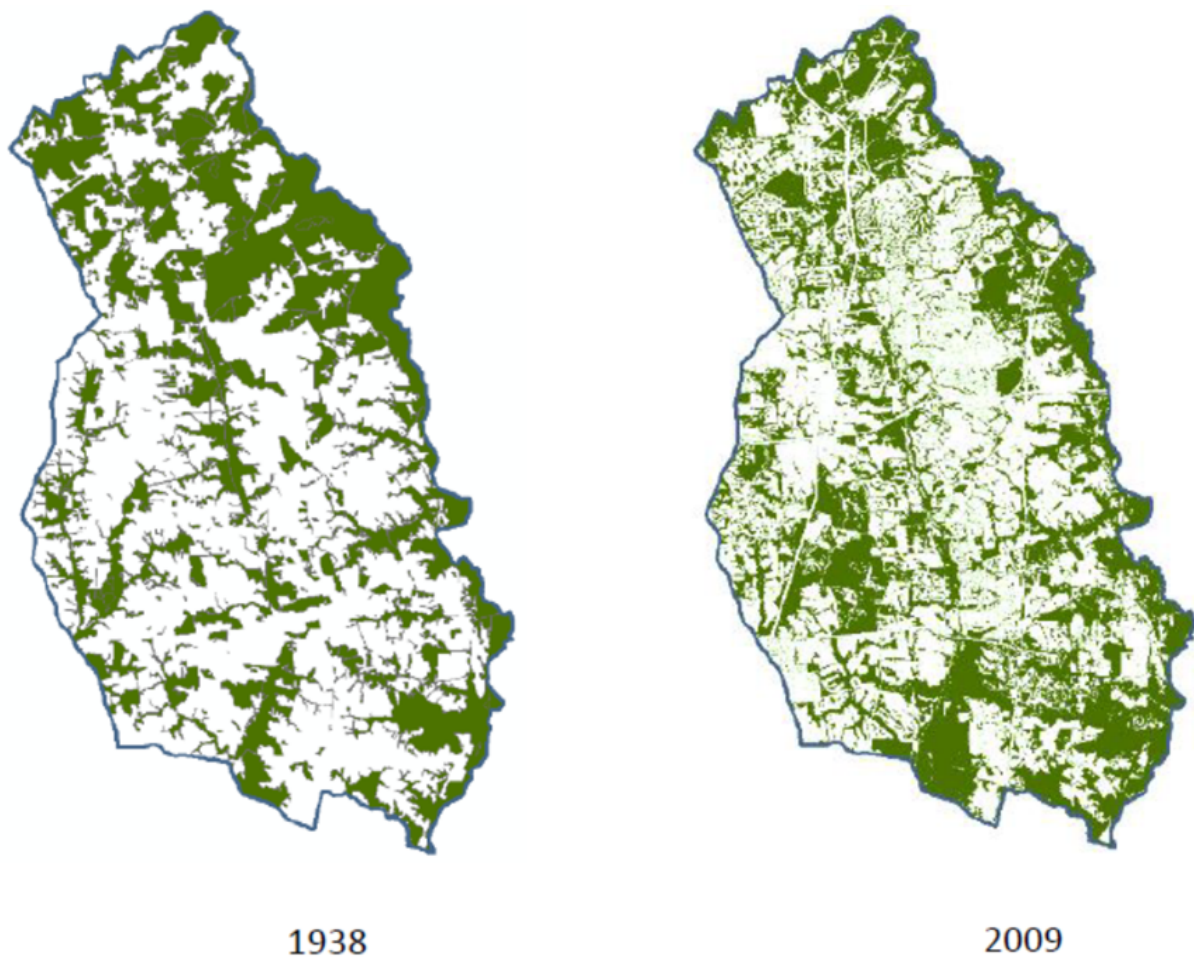


Table 5. Green Infrastructure Network (2017)

	1938		2009		2017		
Watershed	Canopy Coverage (acres)	% of Plan Area	Canopy Coverage (acres)	% of Plan Area	Canopy Coverage (acres)	% of Plan Area	% Change 1938-2017
Collington Branch	3,951.66	10.49	6,520.58	17.31	8,913.92	23.67	13.18
Folly Branch	0.16	0.00043	0.00	0.00	0.00	0.00	-0.16
Horsepen Branch	3,689.42	9.79	2,677.38	7.11	2,934.48	7.79	-2.00
Lottsford Branch	11.84	.03	329.00	0.87	449.32	1.19	1.16
Middle Patuxent River	7,355.29	19.53	8,770.23	23.28	9,274.40	24.62	5.09
Northeast Branch (WB)	1,626.09	4.32	2,656.77	7.05	3,007.43	7.98	3.66
Upper Beaverdam Creek	0.00	0.00	256.85	0.68	276.11	0.73	0.73
Upper Patuxent River	2,826.60	7.50	2,219.79	5.89	2,438.76	6.47	-1.03
Western Branch	0.00	0.00	126.25	0.34	368.59	0.98	0.98
TOTAL	19,461.06	51.67	23,556.85	62.54	27,663.01	73.44	21.77



Figure 14. Allen Pond Park showing some of Bowie's Tree Canopy Coverage (FTC) serving as a community amenity and adding to the sense of place.



Figure 15. Mature Woodland at Bowie State University.

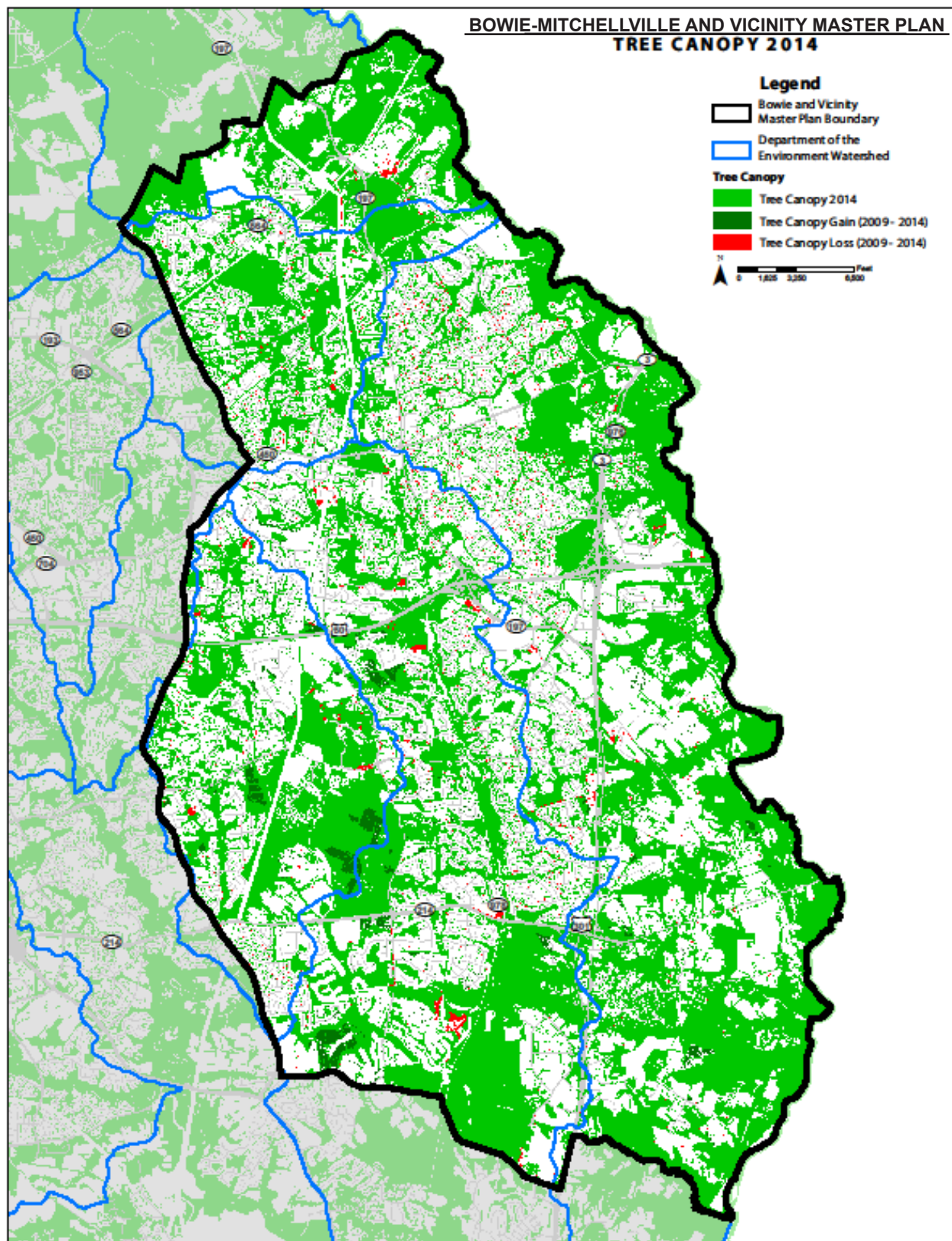
POTENTIAL FOREST INTERIOR DWELLING SPECIES HABITAT

Potential Forest Interior Dwelling Species (FIDS) Habitat is a GIS layer that was created to evaluate whether large patches of forest present in an area contain portions of interior forest habitat. The Maryland Department of Natural Resources defines interior forest as **forested land cover at least 300 feet from nonforest land cover or from primary, secondary, or county roads (i.e., roads considered large enough to break the canopy)**. Within the Chesapeake Bay Critical Area interior forest must also be a minimum of 50 acres in area with at least 10 acres of forest interior. In Prince George's County there is no minimum size for an interior forest patch when evaluating an area for the presence of FIDS habitat.

There are several areas of potential FIDS habitat within the master plan area boundaries, including portions or all of the following:

- The northern part of the master plan area west of the closed Sandy Hill Landfill and north of Duckettown Road.
- The Fran Uhler Natural Area and part of a nearly 250-acre portion of the Patuxent River Natural Resource Management Area in the northeastern part of the master plan area.
- Portions of the Patuxent River Park within the 100-year floodplain along the Patuxent River mainstem.

Map 6. Master Plan Area Forest and Tree Canopy Coverage (2014)



Soils Information

SOIL TYPES

Soil consists, in part, of finely ground rock particles. The type of soil present in an area is determined by the different sizes of mineral particles in a particular soil sample, the structure of the soil (how the particles bind with each other to form aggregates), and by measuring the pH (whether water in the soil is acid or alkaline). The soil types within the master plan area are described in Table 6 and illustrated in Map 7.

The predominant soil series in the master plan area is the Collington series, covering about 35 percent of the area. These soils are categorized as being deep, moderately well-drained soils with fine to moderately coarse textures. The description of this series indicates a potential for moderate to high runoff when saturated. Zekiah, Widewater, and Issue soils occur individually, or in combination, along the master plan area's streams and in areas that are frequently flooded, while Adelphi, Annapolis, and Sassafra soils are generally prevalent on steeper slopes. Christiana soils are associated with Marlboro clays in most of the central and southern portions of the master plan area. For that reason, soil investigations should be conducted to find the best methods of constructing building foundations. Soil studies will also be needed when planning and locating stormwater management facilities to ensure that they are found on sites where stormwater infiltrates easily. Detailed soils investigations will be needed before preparing specific development applications.

SOIL HYDROLOGY

Soil hydrology is a measure of the movement, distribution, and quantity of water in the soil and underlying rock. The rate at which rainwater infiltrates into the earth in areas with permeable surfaces (e.g., forests, wetlands, and streams) depends on the type of soils present. In that regard, soils are placed into hydric groups based on their runoff potential or the rate at which they allow water to infiltrate. The Natural Resource Conservation Service (NRCS) classifies soil into four soil hydric groups (A, B, C, and D) with A having the smallest runoff potential and D the highest. (See Table 6)

- **Group A** consists of sand, loam, or sandy loam types of soils. They consist of deep, well- to excessively-drained sands or gravels. These soils have high infiltration rates and low runoff potential even when saturated because they allow water to drain freely. Group A soils generally have about 10 percent clay and 90 percent sand or gravel.
- **Group B** soils are loams or silt loams with moderately low runoff potential. They are reasonably deep and well-drained allowing unimpeded water movement. These soils have textures that range from relatively fine to coarse. They typically have 10 percent to 20 percent clay and 50 percent to 90 percent sand or gravel.
- **Group C** soils are sandy clay loams with low infiltration rates when thoroughly saturated. The group has moderately high runoff potential because it consists mainly of soils with a layer that impedes the downward movement of water. Group C soils generally have 20 percent to 40 percent clay and less than 50 percent sand.
- **Group D** consists mainly of shallow soils with high clay content (typically more than 40 percent) and high shrink-swell potential (i.e., a strong tendency to shrink when dry and swell when wet). Soils in this group have a permanent water table resulting from a clay pan or other nearly impervious layer at or near the surface (i.e., 50 to 60 centimeters below the surface). They have very low infiltration rates and the highest runoff potential.
- **Group B/D** consists of soils given dual classification based on their proximity to a water table or other impermeable layer.

Map 8 and Table 6 show that the master plan area consists mostly of soils in hydrologic groups B and C, meaning sandy and clay loam soils with relatively slow infiltration rates, and moderately high to high rates of runoff. Soils of this group normally have a layer that impedes downward movement of water. They have high potential to support wetlands vegetation or streams. Thorough soils investigations will be needed to determine the location of stormwater management facilities to mitigate water volume input, or the location of sites for creating new wetlands.

Table 6. Plan Area Soil Types, Acreages, and Percentages

Map Unit Name (% slopes)	Hydrologic Group	Acreage within Master Plan Area	% of Master Plan Area
Adelphia silt loam, 2 to 5 percent slopes complex	C	73.37	0.19
Adelphia-Aquasco complex, 0 to 2 percent slopes	C	701.88	1.86
Adelphia-Holmdel complex, 0 to 2 percent slopes	C	600.66	1.59
Adelphia-Holmdel complex, 2 to 5 percent slopes	C	774.47	2.06
Adelphia-Holmdel complex, 5 to 10 percent slopes	C	291.72	0.77
Adelphia-Holmdel-Urban land complex, 0 to 5 percent slopes	D	34.37	0.09
Annapolis fine sandy loam, 0 to 2 percent slopes	C	1,112.19	2.95
Annapolis fine sandy loam, 10 to 15 percent slopes	C	575.82	1.53
Annapolis fine sandy loam, 15 to 25 percent slopes	C	144.34	0.38
Annapolis fine sandy loam, 2 to 5 percent slopes	C	212.86	0.57
Annapolis fine sandy loam, 25 to 40 percent slopes	C	169.67	0.45
Annapolis fine sandy loam, 5 to 10 percent slopes	C	489.75	1.30
Annapolis-Urban land complex, 0 to 5 percent slopes	C	49.76	0.13
Annapolis-Urban land complex, 5 to 15 percent slopes	C	374.07	0.99
Beltsville silt loam, 0 to 2 percent slopes	C	69.37	0.18
Beltsville silt loam, 2 to 5 percent slopes	C	27.20	0.07
Beltsville silt loam, 5 to 10 percent slopes	C	8.31	0.02
Beltsville-Urban land complex, 0 to 5 percent slopes	C	60.24	0.16
Beltsville-Urban land complex, 5 to 15 percent slopes	C	63.56	0.17
Chillum silt loam, 0 to 5 percent slopes	C	7.54	0.02
Chillum silt loam, 5 to 10 percent slopes	C	7.00	0.02
Christiana-Downer complex, 10 to 15 percent slopes	D	202.78	0.54
Christiana-Downer complex, 15 to 25 percent slopes	D	64.69	0.17
Christiana-Downer complex, 25 to 40 percent slopes	D	19.01	0.05
Christiana-Downer complex, 5 to 10 percent slopes	D	33.14	0.09
Christiana-Downer-Urban land complex, 5 to 15 percent slopes	D	276.56	0.73
Colemantown silt loam, 0 to 2 percent slopes	C/D	30.25	0.08
Collington-Wist complex, 0 to 2 percent slopes	B	2,215.48	5.88
Collington-Wist complex, 10 to 15 percent slopes	B	107.25	0.28
Collington-Wist complex, 15 to 25 percent slopes	B	2,103.32	5.58
Collington-Wist complex, 2 to 5 percent slopes	B	546.70	1.45
Collington-Wist complex, 25 to 40 percent slopes	B	1,092.78	2.90
Collington-Wist complex, 5 to 10 percent slopes	B	1,551.90	4.12
Collington-Wist-Urban land complex, 0 to 5 percent slopes	B	2,677.66	7.11
Collington-Wist-Urban land complex, 15 to 25 percent slopes	B	383.28	1.02
Collington-Wist-Urban land complex, 5 to 15 percent slopes	B	2,557.75	6.79
Croom-Howell-Collington complex, 15 to 25 percent slopes	C	10.03	0.03
Croom-Marr complex, 10 to 15 percent slopes	C	11.56	0.03
Croom-Marr complex, 5 to 10 percent slopes	C	3.08	0.01
Dodon fine sandy loam, 0 to 2 percent slopes	C	12.86	0.03
Dodon fine sandy loam, 2 to 5 percent slopes	C	61.05	0.16
Dodon fine sandy loam, 5 to 10 percent slopes	C	29.13	0.08
Donlonton fine sandy loam, 0 to 2 percent slopes	C	25.06	0.07

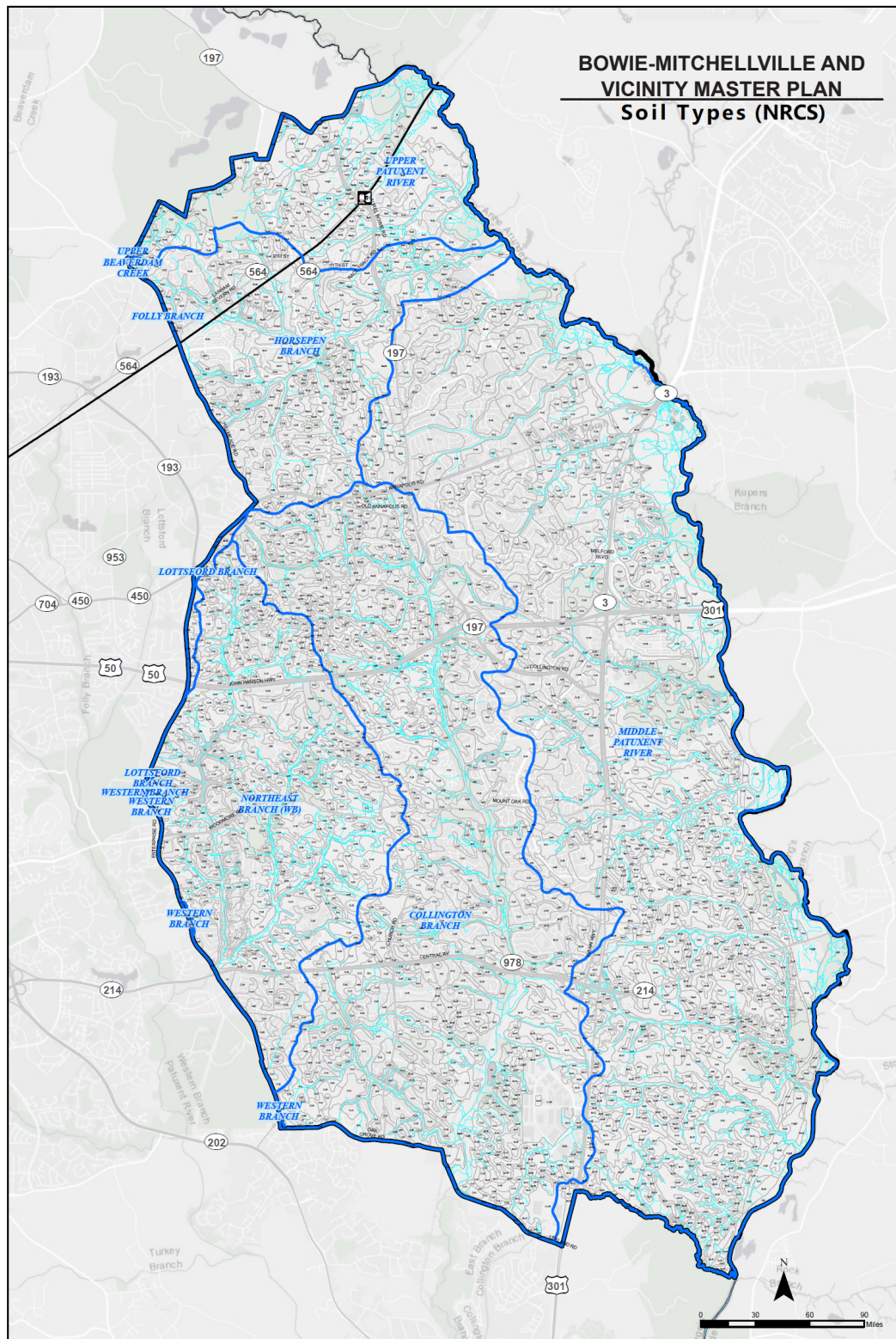
Table 6. Plan Area Soil Types, Acreages, and Percentages (Continued)

Map Unit Name (% slopes)	Hydrologic Group	Acreage within Master Plan Area	% of Master Plan Area
Donlonton fine sandy loam, 2 to 5 percent slopes	C	72.92	0.19
Downer-Hammonton complex, 10 to 15 percent slopes	A	220.20	0.58
Downer-Hammonton complex, 2 to 5 percent slopes	A	254.56	0.68
Downer-Hammonton-Urban land complex, 0 to 5 percent slopes	A	29.22	0.08
Downer-Hammonton-Urban land complex, 5 to 15 percent slopes	A	103.85	0.28
Downer-Hammonton complex, 5 to 10 percent slopes	A	130.32	0.35
Elkton silt loam, 0 to 2 percent slopes	C/D	3.02	0.01
Elkton-Urban land complex, 0 to 2 percent slopes	C/D	13.22	0.04
Elsinboro sandy loam, 0 to 2 percent slopes	B	124.41	0.33
Elsinboro sandy loam, 2 to 5 percent slopes	B	11.73	0.03
Elsinboro-Urban land complex, 0 to 5 percent slopes	B	47.81	0.13
Evesboro-Downer complex 0 to 5 percent slopes	A	64.33	0.17
Evesboro-Downer complex, 10 to 15 percent slopes	A	41.45	0.11
Evesboro-Downer complex, 15 to 25 percent slopes	A	128.99	0.34
Evesboro-Downer complex, 5 to 10 percent slopes	A	75.32	0.20
Fallsington sandy loam, 0 to 2 percent slopes	B/D	106.81	0.28
Fallsington-Urban land complex, 0 to 5 percent slopes	B/D	60.41	0.16
Galestown-Urban land complex, 0 to 5 percent slopes	A	102.28	0.27
Galestown-Urban land complex, 5 to 15 percent slopes	A	89.12	0.24
Grosstown gravelly silt loam, 0 to 2 percent slopes	A	5.45	0.01
Grosstown-Hoghole complex, 5 to 10 percent slopes	A	14.98	0.04
Hoghole-Grosstown complex, 0 to 5 percent slopes	A	11.88	0.03
Howell and Annapolis soils, 10 to 15 percent slopes	C	41.04	0.11
Howell and Annapolis soils, 15 to 25 percent slopes	C	62.59	0.17
Howell and Dodon soils, 10 to 15 percent slopes	C	58.73	0.16
Howell and Dodon soils, 15 to 25 percent slopes	C	34.93	0.09
Howell and Dodon soils, 25 to 40 percent slopes	C	4.84	0.01
Howell-Annapolis complex, 2 to 5 percent slopes	C	21.84	0.06
Howell-Annapolis complex, 5 to 10 percent slopes	C	135.60	0.36
Howell-Dodon complex, 2 to 5 percent slopes	C	47.26	0.13
Howell-Dodon complex, 5 to 10 percent slopes	C	68.58	0.18
Ingleside sandy loam, 0 to 2 percent slopes	A	55.25	0.15
Issue silt loam, occasionally flooded	B/D	79.55	0.21
Issue-Urban land complex, occasionally flooded	B/D	66.81	0.18
Marr-Dodon complex, 0 to 2 percent slopes	B	210.62	0.56
Marr-Dodon complex, 10 to 15 percent slopes	B	287.44	0.76
Marr-Dodon complex, 15 to 25 percent slopes	B	55.29	0.15
Marr-Dodon complex, 2 to 5 percent slopes	B	934.21	2.48
Marr-Dodon complex, 5 to 10 percent slopes	B	877.89	2.33
Marr-Dodon-Urban land complex, 0 to 5 percent slopes	B	664.56	1.76
Marr-Dodon-Urban land complex, 5 to 15 percent slopes	B	868.94	2.31
Matapeake silt loam, 0 to 2 percent slopes	C	30.09	0.08
Matapeake silt loam, 2 to 5 percent slopes	C	35.39	0.09

Table 6. Plan Area Soil Types, Acreages, and Percentages (Continued)

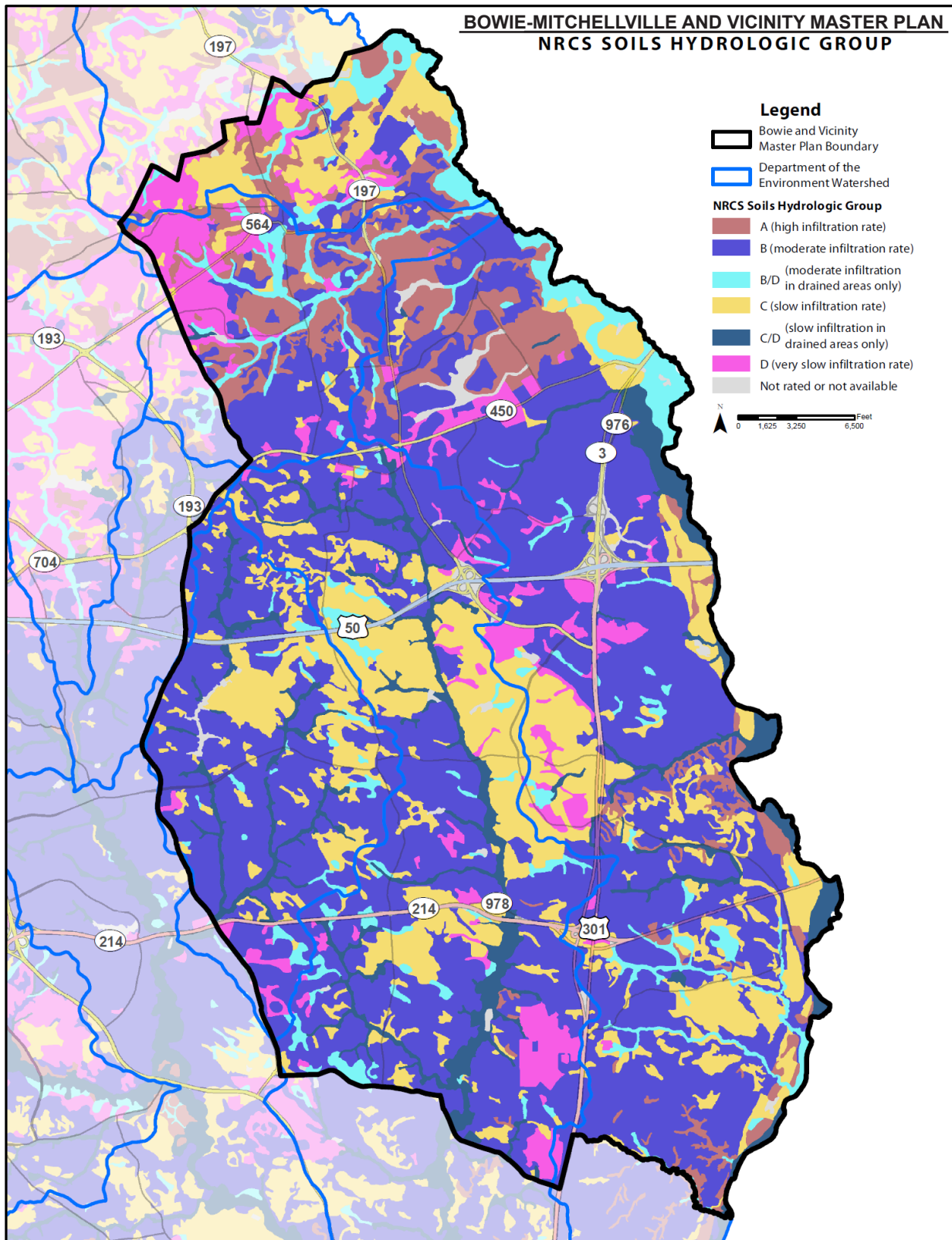
Map Unit Name (% slopes)	Hydrologic Group	Acreage within Master Plan Area	% of Master Plan Area
Pits, gravel	A	58.82	0.16
Potobac-Issue complex, frequently flooded	B/D	174.99	0.46
Russett-Christiana complex, 0 to 2 percent slopes	C	352.63	0.94
Russett-Christiana complex, 2 to 5 percent slopes	C	17.86	0.05
Russett-Christiana-Urban land complex, 0 to 5 percent slopes	D	108.12	0.29
Sassafras and Croom soils, 10 to 15 percent slopes	A	8.91	0.02
Sassafras and Croom soils, 15 to 25 percent slopes	A	112.99	0.30
Sassafras and Croom soils, 25 to 40 percent slopes	A	848.89	2.25
Sassafras sandy loam, 0 to 2 percent slopes	B	32.61	0.09
Sassafras sandy loam, 2 to 5 percent slopes	B	494.51	1.31
Sassafras sandy loam, 5 to 10 percent slopes	B	219.11	0.58
Sassafras-Croom complex, 5 to 10 percent slopes	B	271.01	0.72
Sassafras-Croom-Urban land complex, 5 to 15 percent slopes	A	103.49	0.27
Sassafras-Urban land complex, 0 to 5 percent slopes	B	56.48	0.15
Sassafras-Urban land complex, 15 to 25 percent slopes	A	278.09	0.74
Sassafras-Urban land complex, 5 to 15 percent slopes	A	246.93	0.66
Shrewsbury loam, 0 to 2 percent slopes	B/D	783.05	2.08
Swedesboro-Galestown complex, 0 to 5 percent slopes	A	197.91	0.53
Udorthents, highway, 0 to 65 percent slopes		25.35	0.07
Udorthents, loamy, 0 to 5 percent slopes	C	783.92	2.08
Udorthents, reclaimed clay pits, 0 to 5 percent slopes	C	22.95	0.06
Udorthents, reclaimed clay pits, 5 to 15 percent slopes	C	9.41	0.02
Udorthents, reclaimed gravel pits, 0 to 5 percent slopes	C	5.74	0.02
Udorthents, reclaimed gravel pits, 15 to 25 percent slopes	C	743.74	1.97
Udorthents, reclaimed gravel pits, 5 to 15 percent slopes	C	11.72	0.03
Udorthents, refuse substratum, 0 to 50 percent slopes	C	150.58	0.40
Udorthents-Urban land complex, 0 to 5 percent slopes	C	256.66	0.68
Urban land	D	23.35	0.06
Urban land-Adelphia complex, 0 to 5 percent slopes	D	74.79	0.20
Urban land-Collington-Wist complex, 0 to 5 percent slopes	D	366.80	0.97
Urban land-Elsinboro complex, 0 to 5 percent slopes	D	28.84	0.08
Urban land-Marr-Dodon complex, 0 to 5 percent slopes	D	365.31	0.97
Urban land-Sassafras complex, 0 to 5 percent slopes	D	15.88	0.04
Water		147.08	0.39
Westphalia and Dodon soils, 25 to 40 percent slopes	A	242.02	0.64
Westphalia and Dodon soils, 40 to 80 percent slopes	A	132.23	0.35
Widewater and Issue soils, frequently flooded	C/D	2,164.94	5.75
Woodstown sandy loam, 0 to 2 percent slopes	C	28.25	0.08
Woodstown sandy loam, 2 to 5 percent slopes	C	102.24	0.27
Woodstown sandy loam, 5 to 10 percent slopes	C	44.66	0.12
Woodstown-Urban land complex, 0 to 5 percent slopes	C	24.91	0.07
Zekiah and Issue soils, frequently flooded	B/D	145.55	0.39
Zekiah-Urban land complex, frequently flooded		1,146.76	3.04

Map 7. Master Plan Area Soil Types

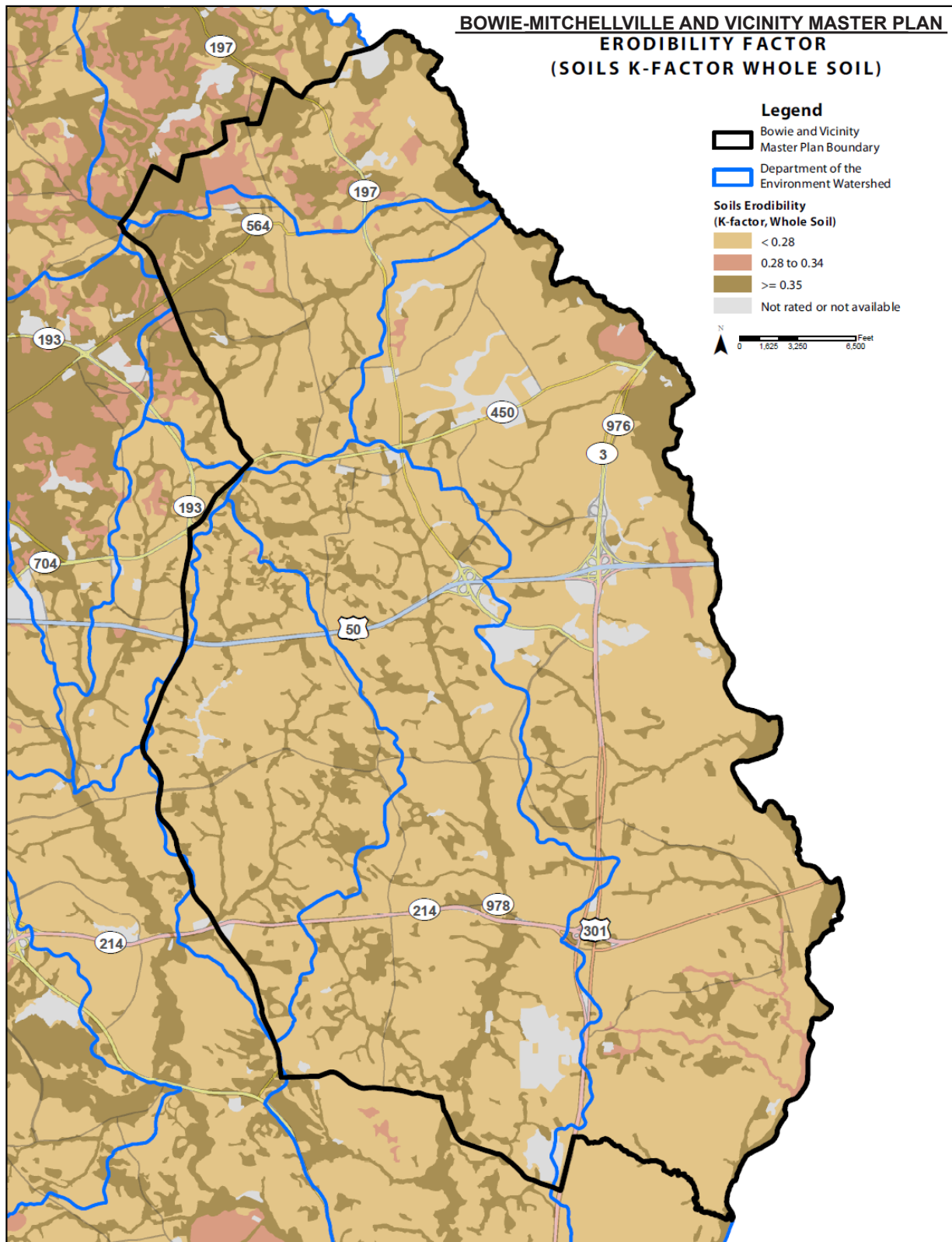


- | | | |
|----------------------|--------------|----------------------|
| Watershed (DOE) | Major Roads | Rail Transit |
| Sector Plan Boundary | Known Stream | Camden and Penn Line |
| Building (2017) | | Station |

Map 8. Soil Hydrology



Map 9. Soil Erosion Factors (K-Factors)



SOIL EROSION FACTORS

The soil erodibility factor (K-factor) is a measure of the likelihood of soil particles to be detached and transported by rainfall and runoff. The erodibility factor describes soils in the master plan area that should be carefully considered, to avoid siltation and pollution of nearby streams when land is being developed. Erodible soils within the master plan area are the Christiana, Elkton, Adelphia, Beltsville, and Issue series; these are of particular concern when they occur on slopes of 15 percent or greater.

Map 9 shows that generally, the master plan area contains soils with relatively low susceptibility to erosion (K-factor ≤ 0.28). Scattered throughout the master plan area are patches of soils with higher K-factor (≥ 0.35) indicating slightly higher risk of soil erosion by rainfall.

MARLBORO CLAY FORMATIONS

Marlboro Clay is composed of dense, brittle clay that is very unstable and prone to slippage when disturbed. Marlboro clay can cause serious structural problems for road and building construction unless special footings are used to penetrate (pin) the Marlboro clay layer. There are extensive Marlboro clay formations in the southern quarter of the master plan area, generally on both sides of US 301 south of Queen Anne Bridge Road. Marlboro clays are commonly associated with Christiana clays.

Impervious Surfaces and Stormwater Runoff

Impervious surfaces include roof-tops, parking lots, sidewalks, roads, and other materials that impede the infiltration of rainwater into the ground. The amount and location of impervious surfaces are a significant factor affecting both the quality (pollution level) and quantity (volume) of stormwater runoff entering streams, rivers, and eventually the Chesapeake Bay. Runoff also carries loose soil, trash, and debris into the waterways, adversely impacting overall water quality. As development occurs within a watershed and impervious

surface area increases, stormwater runoff can become the primary source of water entering a stream. Impervious surfaces also absorb and emit heat, creating surface, air, and stormwater runoff temperatures that are considerably higher than in rural areas.

Heated stormwater runoff mixes with and increases the base temperature of the receiving streams, significantly impacting their ecology. Degradation of water quality caused by changes in ambient water temperature is referred to as thermal pollution. Small streams, such as the one shown in Figure 16, are highly sensitive to changes in temperature. Low concentrations of dissolved oxygen (DO), which negatively affect the behavior of fish and aquatic insects, are a common impact of thermal pollution. Wooded stream buffers, street trees, and stormwater management systems that retain run-off in subsurface storage can mitigate the effects of thermal pollution.

The stream pictured in Figure 16 is shaded by tree canopy. However, the exposed roots in the left foreground indicate heavy streambank erosion, while the gravel buildup and silted streambed all point to the conveyance of high volumes of stormwater runoff. The Baysox Stadium development within the southwestern quadrant of the US 50/US 301 intersection, as well as parts of the Bowie Town Center and portions of Collington Road, US 50, and US 301, all drain to this tributary.

- Imperviousness within the master plan area is high at nearly 8,000 acres or 20 percent of the master plan area.
- Roads, buildings, and parking lots cover nearly 5,000 acres accounting for 62 percent of the master plan area's total impervious cover as shown in Table 7.

Tables 7 and 8, and Map 10, show impervious area coverage within the master plan boundaries. According to the Environmental Protection Agency (EPA), stream degradation can result when imperviousness in a watershed is 10 percent or greater; leading to structural problems such as failing slopes, deep ravines, siltation,

Table 7. Green Infrastructure Network (2017)

Watershed (acres)	Asphalt	Athletic	Bridge	Buildings	Concrete	Driveway	Parking Lot	Patio
All Watersheds in the Master Plan Area								
	4.18	31.24	9.82	1,778.32	27.52	681.74	1,046.96	145.11

Pool	Railroad Bed	Road	Runway/Taxiway	Sidewalk	Storage	Substation	Track	Walkway	TOTAL
22.28	113.47	1,940.67	5.59	147.20	2.85	14.82	28.23	240.43	6,240.43



Figure 16. Green Branch, a Middle Patuxent River tributary near Governor Bridge Road.

and severe erosion present in some of the area’s streams, wetlands, and floodplains.

Table 8 shows that portions of the Middle Patuxent River and Collington Branch watersheds that are within the master plan area have high imperviousness at 7.27 percent and 6.48 percent, respectively, consistent with the Poor and Very Poor watershed quality ratings in the two watersheds.

Additionally, the total acreage of pervious surfaces in the master plan area is 1,280 acres more than the amount of forest and tree canopy and other vegetation combined, meaning that about 3 percent of the existing impervious surfaces is currently shaded. This is greater than the countywide percentage of approximately 2.7 percent of impervious surfaces that are shaded. Increasing the percentage of shaded impervious surfaces further, has multiple benefits including reduced urban heat island effect, reduced thermal heat impacts on receiving streams, and reduced stormwater run-off.

Table 8. Master Plan Area Impervious Surfaces by Watershed (2017)

Watershed	Impervious Surfaces (acres)	Impervious Surfaces (%)
Collington Branch	2,441.52	6.48
Folly Branch	9.85	0.03
Horsepen Branch	918.27	2.44
Lottsford Branch	158.12	0.42
Middle Patuxent River	2,739.46	7.27
Northeast Branch (WB)	939.35	2.49
Upper Beaverdam Creek	15.29	0.04
Upper Patuxent River	371.96	0.99
Western Branch	107.87	0.27
TOTAL	7,701.69	20.43

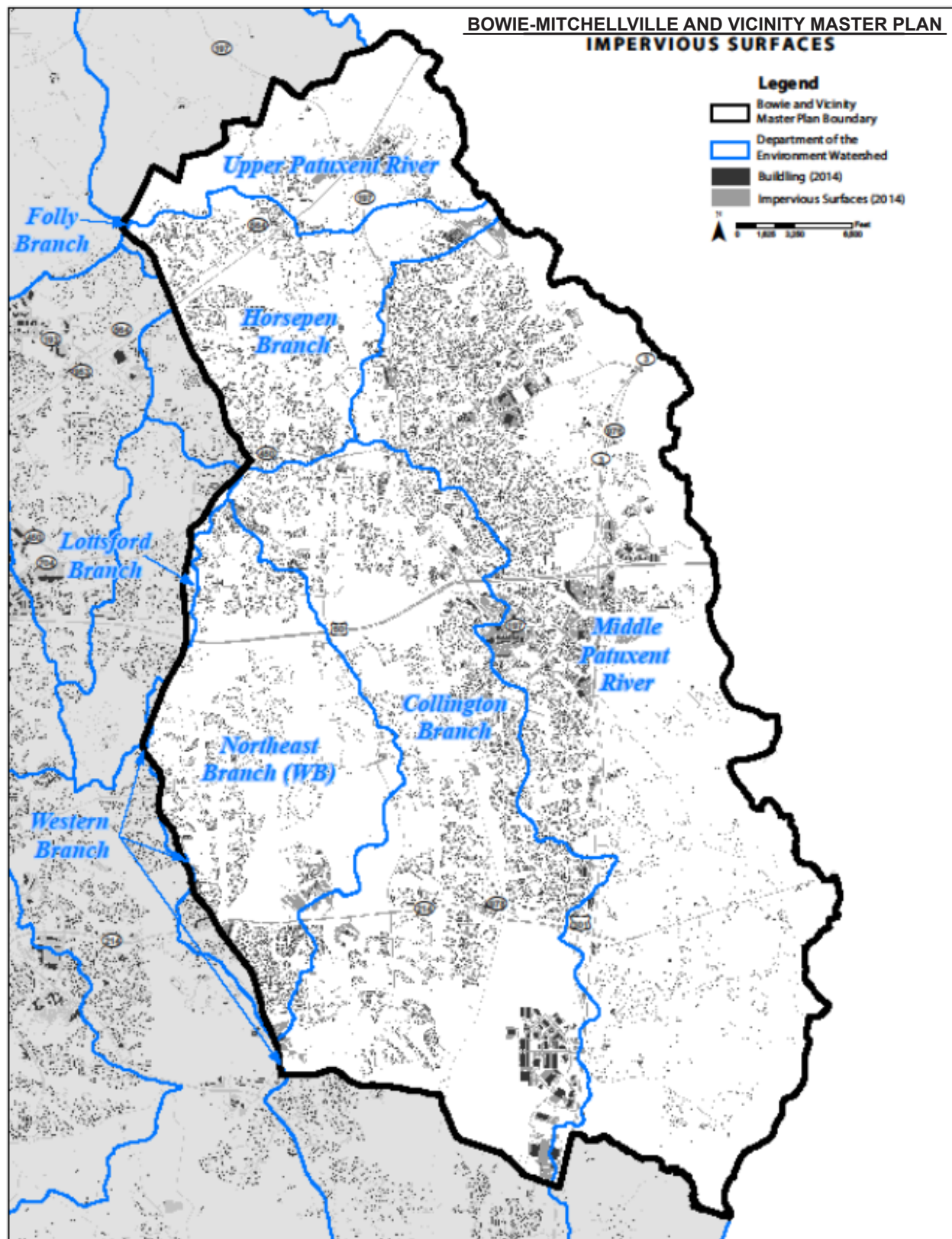


Figure 17. Bowie's roadways cover 1,940 acres accounting for 24 percent of the master plan area's total impervious surface coverage.



Figure 18. Bowie Residential Neighborhood. Street trees shade roadways, sidewalks, and parking lots, lowering the temperature of stormwater runoff from these areas and minimizing the risk of thermal pollution of local stream sand wetlands.

Map 10. Master Plan Area Impervious Surfaces



Noise, Air, and Light Pollution

Noise, air pollution, and light pollution must be limited or reduced to ensure that communities are comfortable, livable, and sustainable.

NOISE POLLUTION

Noise is unwanted sound from constructed or natural sources. It is usually the most obvious environmental concern for people who live, work, and recreate near a noise source such as a busy road, highway, airport, or railway. Excessive noise has a significant effect on the quality of life in any community, and more particularly, in a developed community such as the master plan area. US 50, US 301/MD 3, Freeway Airport, and stop-and-go traffic contribute to noise.

Noise levels are measured in decibels and reported as average decibels with a 10-decibel penalty for the sensitivity people experience when sleeping (measured as dBA Ldn or average decibels level with a day/night average). The accepted maximum noise level for outdoor activity areas (e.g., backyards, parks, ball fields, and playgrounds) is 65 dBA Ldn, while the accepted maximum level for indoor areas is 45 dBA Ldn. State noise guidelines and standards require that development such as residential homes, day care centers, or hotels should not be located immediately adjacent to transportation noise sources or in areas where transportation noise levels in outdoor activity areas will exceed 65 dBA Ldn. Where noise impacts cannot be avoided, mitigation should be provided

to reduce noise impacts to 65 dBA Ldn for outdoor activity areas and to 45 dBA Ldn for indoor areas.

Only roadways classified as arterial, freeway, and expressway generate enough traffic to result in noise levels above 65 dBA Ldn for outdoor activity areas. A computer noise model was used to delineate the 65 dBA Ldn noise contour for traffic noise from the sector plan roadways classified as arterial or greater. The location of the noise contour is measured in feet from the centerline of the roadway outward on both sides. Table 8 and Map 11 show the results.

The noise model used for this report does not predict noise or vibration levels from nontransportation sources or adjacent to above-ground railways. Residential and residential-type uses could be placed adjacent to above-ground railways if proper construction and insulation methods are used, though such uses should generally not be placed within 200 feet of the centerline of the tracks.

AIR POLLUTION

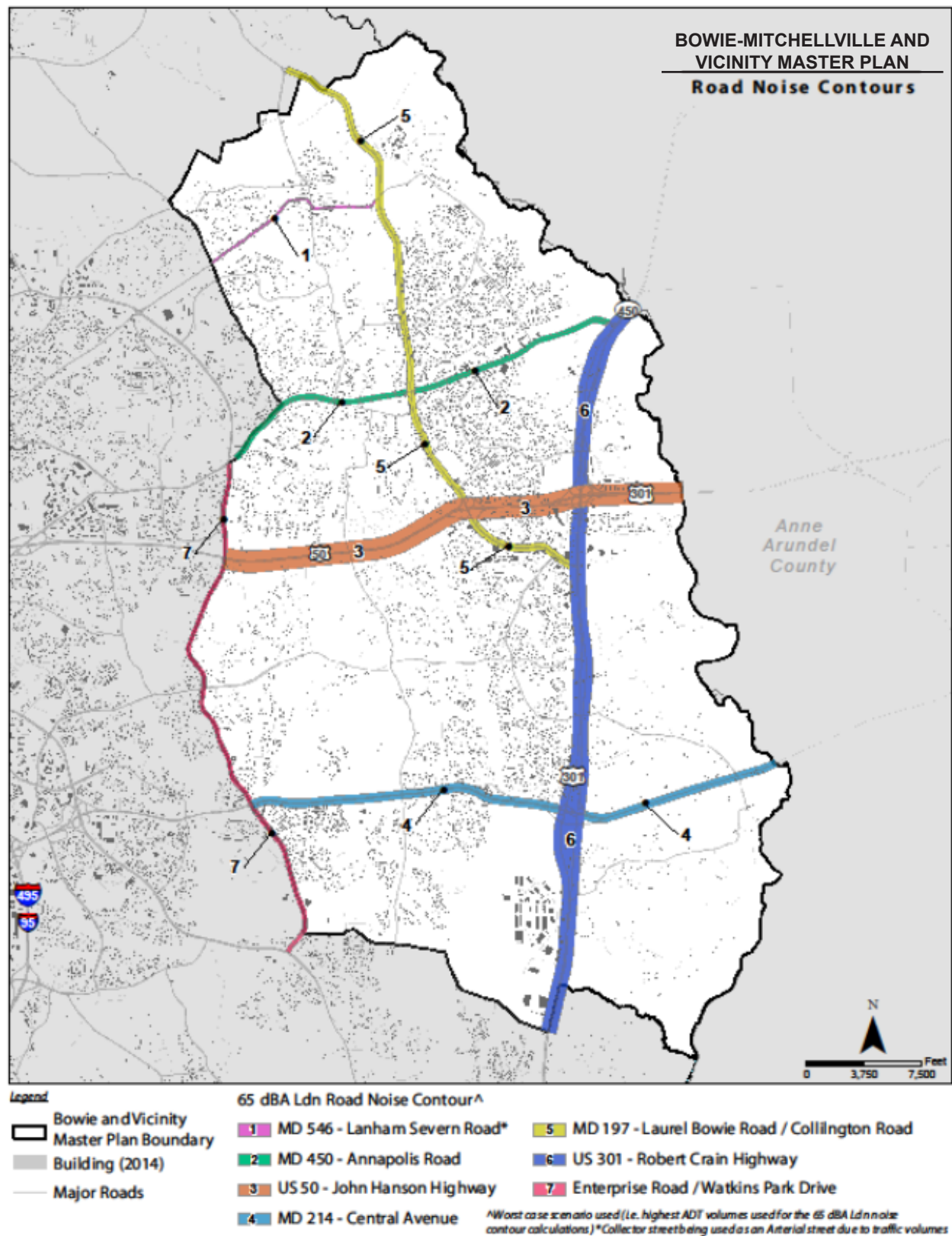
The Washington metropolitan area, which includes Prince George's County, currently does not meet the air quality standards set by the EPA for ground level ozone. Utilities and other industries, motor vehicles, small gasoline-powered engines (e.g., lawnmowers and chainsaws), and small businesses using solvents, paints, insecticides, or cleaning solutions, are the main sources of the pollutants that create ground level ozone.

Table 9. Projected Noise Contours for Major Roadways in the Master Plan Area

Segment	Road Segment	Master Plan Classification	65 dBA Ldn Noise Contour*
1	Lanham Severn Road (MD 564) Springfield Road E to Laurel Bowie Road	Arterial**	91
2	MD 450 (Annapolis Road) from Glen Dale Road east to Robert Crain Highway	Arterial	168
3	John Hanson Highway (US 50) from Glen Dale Boulevard east to County Boundary	Freeway	660
4	Central Avenue (MD 214) from Enterprise Road/Watkins Park Drive to County Boundary	Expressway	122
5	Laurel Bowie Drive/Collington Road (MD 197) from US 301 to Project Boundary	Arterial	228
6	Robert Crain Highway (US 301, MD 3) from Leeland Road north to County Boundary	Freeway	456
7	Watkins Park Drive/Enterprise Road from Largo Road (202) north to Annapolis Road	Arterial	155

**Collector being treated as an Arterial because of high traffic volumes

Map 11. The 65 dBA Ldn Noise Contour Along the Master Plan Area's Major Roadways



Though air quality is regulated at the federal rather than the local level, master plans can help address air pollution by promoting actions that result in planting and preserving more trees to reduce the heat islands, or easing traffic congestion and encouraging the use of transit and other modes of transportation that reduce the number of vehicles on the road. Safe and efficient hiker/biker trails, as well as sidewalks and other pedestrian infrastructure also help to reduce the dependency on motor vehicles.

LIGHT POLLUTION

Unwanted light and intrusions caused by glare are commonly referred to as light pollution. Light intrusion from commercial and industrial areas into residential areas and environmentally sensitive areas are concerns within the master plan area. Studies have shown that consistent light levels throughout a community can reduce crime because the human eye does not need to adjust when viewing areas of different light levels. High levels (bright lights) in one area next to an area of low light make an area unsafe. Downward facing light fixtures with appropriate shielding and full cut-off optics should be used to provide consistent light levels throughout the sector plan area.

Special Roadways

Special Roadways include roads that the Prince George's County Council has designated as scenic or historic, and scenic byways that have been designated by the Master Plan of Transportation or subsequent master or sector plans. There are no special roadways located within or adjacent to the master plan area.

APPENDIX

SOURCES

1. The sources of all Geographic Information System (GIS) data used in this report is The Maryland-National Capital Park and Planning Commission who has compiled GIS layers from a variety of internal and external sources. A list of the GIS layers available and their associated metadata can be found on the Prince George's County Planning Department's website, www.pgplanning.org.
2. The photos contained within this document were taken by M-NCPPC staff during the spring of 2015 except for the aerial on page 14 that was clipped from a GIS layer.
3. Water quality data is reported from the *Biological Assessment and Monitoring of Streams and Watersheds in Prince George's County* (2003). Copies of the full report are available upon request.
4. The source of soils information is the USDA Natural Resources Conservation Service from the Web Soil Survey.

PRINCE GEORGE'S COUNTY AGENCY CONTACT INFORMATION

Land Development and the Environment

The following information is provided to assist in directing questions about environmental concerns related to land development approvals to the proper department. More information can be found on each department's website.

Department of Permitting, Inspections, and Enforcement (DPIE) 301-883-5710

Plan review and approval for stormwater management, floodplain impacts, and grading; issuance of building and grading permits; and enforcement.

Department of Public Works and Transportation (DPW&T) 301-883-5600

Review and approval of transportation rights-of-way and proposed roadway design and construction and maintenance of County roadways.

Department of the Environment (DoE) 301-883-5810

Responsible for watershed implementation plan (WIP) to address water pollution, consults with DPIE on floodplain issues, climate change and hazard mitigation planning, and water and sewer planning.

Health Department (HD) 301-883-7605

Perk testing for septic field applications.

The Maryland-National Capital Park and Planning Commission, The Prince George's County Planning Department 301-952-3650

Review and approval of Natural Resource Inventories (NRIs); review and approval of Tree Conservation Plans and Letters of Exemption; review of development applications for conformance with environmental regulations related to land development. More information regarding preparation of the required environmental documents can be found in the Environmental Technical Manual on the Prince George's County Planning Department's website, www.pgplanning.org.

Acknowledgments

The following employees of the Maryland-National Capital Park and Planning Commission's Prince George's County Planning Department contributed to this study:

Megan Reiser, *Supervisor, Countywide Planning Division, Environmental Planning Section*

Scott Rowe, *AICP, CNU-A, Supervisor, Community Planning Division, Long-Range Planning Section*

Kim Finch, *Master Planner, Countywide Planning Division*

Michael Zamore, *Planner Coordinator, Community Planning Division, Project Manager**

Arnaldo Ruiz, *Principal Planning Technician, Community Planning Division, Long-Range Planning Section*

Sean Adkins, *GISP, GIS Specialist II, Community Planning Division**

*Former employee

Acknowledgments

Prince George's County Planning Department

Andree Checkley-Green	Planning Director
Derick Berlage	Acting Deputy Planning Director

PROJECT TEAM CORE MEMBERS

Kipling Reynolds	Chief, Community Planning Division
Scott Rowe	Project Facilitator; Supervisor, Community Planning Division, Long-Range Planning
Thomas Lester	Project Manager; Planner Coordinator, Community Planning Division, Long-Range Planning
Andrew McCray	Deputy Project Manager; Senior Planner, Community Planning Division, Long-Range Planning
Sarah Benton, AICP	Team Member; Planner Coordinator, Community Planning Division, Long-Range Planning
Judy D'Ambrosi	Team Member; Senior Planner, Community Planning Division, Long-Range Planning
Arnaldo Ruiz	Team Member; Principal Planning Technician, Community Planning Division, Long-Range Planning

PROJECT TEAM RESOURCE MEMBERS

Vanessa Akins	Special Program Manager, Community Planning Division
Kim Finch	Master Planner, Countywide Planning Division, Environmental
Judith Howerton	Senior Planner, Countywide Planning Division, Transportation
Ted Kowaluk	Planner Coordinator, Countywide Planning Division, Special Projects
Maria Martin	Master Planner, Countywide Planning Division, Special Projects
Tyler Smith	Senior Planner, Countywide Planning Division, Historic Preservation
M'Balu Abdullah	Web Manager, Publications, Graphics, and Web Development
Rob Getz	Publications Specialist, Publications, Graphics, and Web Development
Dan Hartmann	Administrative Manager, Publications, Graphics, and Web Development
Shannon Sonnett	Publications Specialist, Publications, Graphics, and Web Development

TECHNICAL AND ADMINISTRATIVE ASSISTANCE

Calista Black	Principal Public Affairs & Marketing Specialist, Public Affairs
---------------	---

Consultants

Adam Lubinsky, Phd, AICP	Managing Principal, WXY Architecture + Urban Design
Kushan Dave, AICP	Planning Director, WXY Architecture + Urban Design
Abby Zane	Urban Planner, WXY Architecture + Urban Design
Raphael Laude	Urban Planner, WXY Architecture + Urban Design
Harrison Yu	Planning Intern, WXY Architecture + Urban Design
Stan Wall, PE	Partner, HR&A Advisors, Inc.
Elizabeth Packer	Director, HR&A Advisors, Inc.
Dominique Johnson	Research Analyst, HR&A Advisors, Inc.
Andy Clarke	Director of Strategy, Toole Design
Siba el-Samra, ASLA, PLA	Landscape Architect, Toole Design
Dan Reed	Planner II, Toole Design
Steve Brigham	Principal, Public Engagement Associates

Special thanks to:

Joseph M. Meinert, AICP	Director of Planning and Community Development, City of Bowie
Kenny Turscak	Intern, Community Planning Division, Long-Range Planning



The Maryland-National Capital Park and Planning Commission

Prince George's County Planning Department

14741 Governor Oden Bowie Drive

Upper Marlboro, MD 20772

www.pgplanning.org