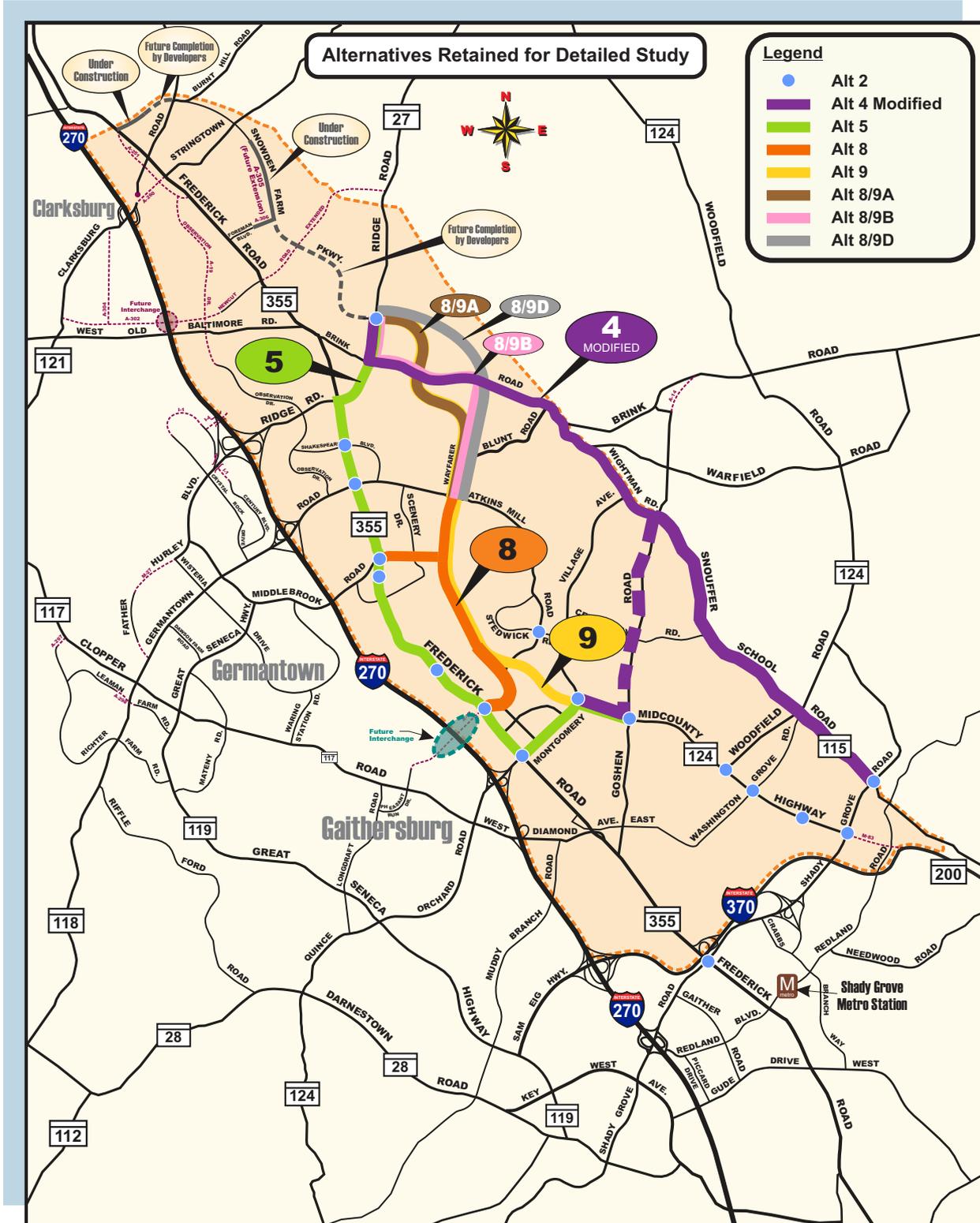


SECTION VIII

MITIGATION





VIII. MITIGATION

Mitigation for resources impacted as a result of the proposed project will be required pursuant to federal and state environmental law for wetlands and streams. Section A summarizes potential mitigation strategies for wetlands and streams for the project based on the preliminary resource mapping and the preliminary engineering completed for the ARDS.

In addition, other resources such as parklands and forest (including habitat for FIDS) require mitigation through state and local laws and are included here as part of the Public Interest Review for the Section 404/401 Joint Permit Application (Section B). Parklands and FIDS habitat mitigation strategies are a collaborative effort with Montgomery County agencies, in particular M-NCPPC and MCDOT.

Preliminary mitigation strategies to compensate for the range of potential impacts to these resources for the ARDS have been developed. Upon concurrence of the Preferred Alternative, MCDOT will select an appropriate mitigation strategy from the sites described in this section that are commensurate with the final impacts identified for the Preferred Alternative. Those impacts will be documented in the *Final EER* based on jurisdictional determinations for the limits of the resources within the Preferred Alternative limits of disturbance and refined design at the alignment crossings of the identified resources. Information regarding impacts to these resources for the Preferred Alternative is provided in this section to demonstrate that available mitigation opportunities described should have adequate mitigation capability to compensate for the proposed impacts from the Preferred Alternative (Alternative 9A).

Upon concurrence of the Preferred Alternative, it is anticipated that updated jurisdictional impacts will be reported to the agencies based on a field delineation and agency concurrence. Permit plates prepared for each aquatic resource. Additionally, a final conceptual mitigation plan will be prepared that provides sufficient compensation for the final delineated impacts to aquatic resources.

Figure VIII-1 is a map depicting the location of the following potential sites described in this mitigation section:

- Potential Wetlands and Stream Mitigation Sites (including Leishear Farms potential bank);
- Potential M-NCPPC Parks/Forest/FIDS Mitigation Sites; and
- Potential Mitigation Site for City of Gaithersburg Parks.

The figure relates locations of all mitigation sites to the Preferred Alternative corridor, the study area and existing Montgomery County park properties/open space.

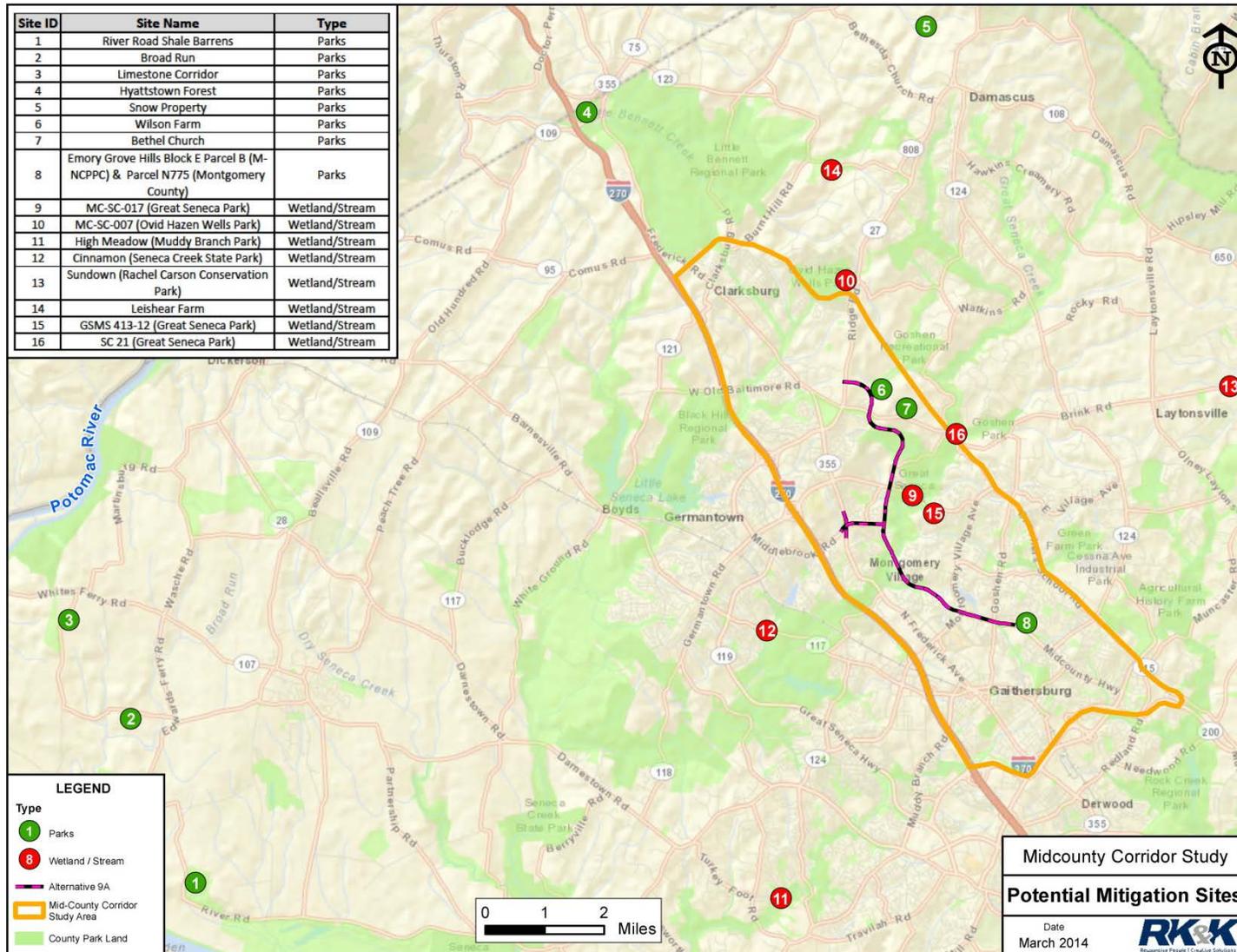


Figure VIII-1: Potential Wetlands/Streams, Parks Mitigation Site Location Map



A. Water Resources

Water resources within the projects study area include waters of the U.S. (WUS) and non-tidal wetlands. Impacts to these resources and associated mitigation requirements for the Preferred Alternative (Alternative 9A) are summarized in **Table VIII-1**.

Table VIII-1: Summary of Water Resource Impacts and Mitigation Requirement

RESOURCES	ALTERNATIVE 9A IMPACTS	MITIGATION REQUIRED
STREAMS		
Piped		
Perennial/Intermittent	256	485
Ephemeral	229	
Relocated	989	To be mitigated in-kind
Permanent (LF)¹	1,474	485
Temporary (LF)	60	--
NONTIDAL WETLANDS		
Fill	0.87	1.74*
Conversion	1.70	1.70
Permanent (ac)	2.57	3.44*
Temporary (ac)	0.82	--

NOTE: No mitigation is required for temporary impacts.

* Wetland Mitigation Required equals two times the permanent wetland fill area (mitigated at a 2:1 ratio) plus the permanent wetland conversion area.

The estimate of required mitigation was based on mitigation ratios of 2:1 for forested wetlands, 1.5:1 for scrub-shrub wetlands and 1:1 ratio for emergent wetlands as well as a 1:1 ratio for permanent waters impacts.

Based on the preliminary assessment of the range of potential impacts for the alternatives, a search for mitigation was conducted based on the potential need for 1,000 feet of stream mitigation and five acres of wetland mitigation. Based on the specific impacts for Alternative 9A, the required wetland mitigation and stream mitigation of the Preferred Alternative is as follows: 485 feet of stream and 3.44 acres of wetlands.

In the *Draft EER*, MCDOT identified a wetlands mitigation site referenced as SC-21 and a stream mitigation site referenced as GSMS 413-12. SC-21 was previously identified as a potential opportunity by the State Highway Administration for the Inter County Connector (ICC) project. GSMS 413-12 was identified through a site search in 2011/2012 by MCDOT and review by the commenting agencies.

In addition, MCDOT previously completed excess wetland mitigation at the Leishear Farms site, identified on **Figure VIII-1**. Leishear Farms has not been approved as a mitigation bank. Based on meetings with the agencies, remaining wetlands acreage from this site would need to be re-evaluated for credit potential and a banking instrument executed with the agencies. MCDOT is



evaluating the potential for this site to become a mitigation bank site concurrently with the evaluations of the other mitigation sites. Leishear Farms is a wetlands only mitigation site; if use of this site as a mitigation bank was approved by the agencies stream mitigation would be required on a different site.

MCDOT conducted additional searches for potential wetland and stream mitigation sites throughout the study area. MCDOT did not have success identifying private property owners in the study area interested in sale of their land to provide for mitigation sites. Therefore, all mitigation sites are located on Montgomery County owned park lands that are managed by M-NCPPC. The searches were presented to the commenting agencies including USACE, EPA, MDE and others. Ultimately five additional mitigation sites, each with potential for wetlands and streams mitigation, were approved by the agencies as a potential part of the mitigation strategy. The location of each site is noted on **Figure VIII-1**.

Included in **Appendix D** are details of the site searches, mapping and summaries of site conditions for each mitigation site and minutes from the agency site visits including concurrence on potential sites to move to final conceptual mitigation plans pending selection of a Preferred Alternative. The following are included in **Appendix D**:

- Site visit package dated July 23, 2013
 - Summary of site resources and mitigation potential
 - Aerial photograph with limits of resources based on desktop information
 - Site location maps
- Minutes from July 23, 2013 site visit dated July 30, 2013
- Site visit package dated October 30, 2013
 - Summary of site resources and mitigation potential
 - Aerial photograph with limits of resources based on desktop information
 - Site location maps
- Minutes from October 30, 2013 site visit dated November 1, 2013

Based on the culmination of previously identified sites and recent site searches, MCDOT has identified the following seven sites for potential wetland and/or stream mitigation:

- **SC-21**: Great Seneca Park, Brink Road – Great Seneca Creek
- **GSMS 413-12**: Great Seneca Park, Watkins Mill Road, North Creek to Seneca Creek
- **High Meadow**: Muddy Branch Park, High Meadow Road – Muddy Branch
- **MC-SC-007**: Ovid Hazen Wells Park, Ridge Road – Little Seneca Creek
- **Cinnamon**: Seneca Creek State Park, Clopper Road – Gunners Branch
- **Sundown**: Rachel Carson Conservation Area, Sundown Road – Hawlings River
- **MC-SC-017**: Great Seneca Park, Watkins Mill Road – Great Seneca Creek/North Creek



The preliminary evaluation of these sites included desk top review of aerial photography, GIS resource mapping, site visit by MCDOT team and site assessment by the commenting agencies. Criteria for potential success included parcel size, landscape position, current quality of existing streams, soil types, hydrology, access, ability to maintain the site, ecological uplift potential and other criteria that would indicate likelihood of successful mitigation. All sites are located within drainage area (watershed) deemed appropriate by the agencies for this project.

The potential mitigation sites are presented on **Figure VIII-1** and are summarized in **Table VIII-2** below.

Table VIII-2: Potential Wetland/Stream Mitigation Sites

Site Id *	Site Name (Park)	Address	Stream	Parcel Area (acres)	Potential Mitigation		Wetland Opportunity
					Wetland (acres)	Stream Restoration (linear feet)	
9	MC-SC-017 (Great Seneca Park)	Watkins Mill Rd Gaithersburg, MD 20879	Great Seneca Creek/ North Creek	45.66	1.10	760	Wetland Creation
10	MC-SC-007 (Ovid Hazen Wells Park)	12001 Skylark Rd, Clarksburg, MD 20871	Little Seneca Creek	292	0.96+	440	Wetland Creation
11	High Meadow (Muddy Branch Park)	High Meadow Rd Gaithersburg, MD 20878	Muddy Branch	17.69	3.89	1,170	Wetland Creation
12	Cinnamon (Seneca Creek State Park)	11950 Clopper Rd Gaithersburg, MD 20878	Gunners Branch	9.89	3.55	1,140	Wetland Creation, groundwater at 36"
13	Sundown (Rachel Carson Conservation Park)	3786 Sundown Rd Brookeville, MD 20833	Hawlings River	19.99	4.79	1,260	Wetland Creation, groundwater at 36"
15	GSMS 413-12 (Great Seneca Park)	Watkins Mill Rd Gaithersburg, MD 20879	Tributary to Seneca Creek	N/A	N/A	N/A	Repair to head cut gully at Sta. 336+50
16	SC-21 (Great Seneca Park)	Brink Rd Gaithersburg, MD 20882	Great Seneca Creek	70	2.10	2,160	Wetland Creation, shallow groundwater present

*Site Number from Potential Mitigation Sites Map

NOTE: N/A indicates data is unavailable. Leishear Farms (Site #14) is located on the map but not in the table. Leishear Farms is referenced for discussion purposes as this site was previously constructed and MCDOT is evaluating potential for converting to mitigation bank for the remaining wetlands acreage.



Upon concurrence with the Preferred Alternative by the regulatory agencies, MCDOT will proceed to coordinate with the agencies to identify a preferred mitigation site and prepare a final Conceptual Mitigation Plan to compensate for impacts associated with the Preferred Alternative. Based on the preliminary impact numbers presented in the *Draft EER* for this alignment, the mitigation sites identified will provide ample mitigation for both streams and wetlands. It is anticipated that one to three of the sites will provide effective mitigation for the project. As all sites are on Montgomery County lands, there is high assurance that these sites will be available for mitigation and that final selection of the sites will depend on technical feasibility, ecological uplift and likelihood for success. MCDOT will coordinate with the USACE, MDE, and M-NCPPC, the land manager for each of these sites, to prioritize selection of the final mitigation sites.

B. Park and Forest Resources

Mitigation of park land impacted by the Preferred Alternative will be developed through collaboration between MCDOT and the park owners – M-NCPPC, the City of Gaithersburg and the Montgomery Village Foundation. Forest impacts will be mitigated in accordance with the Maryland Forest Conservation Act and the Montgomery County Forest Conservation Law. Mitigation for forest impacts will be coordinated with M-NCPPC.

Estimated impacts to park land and forest resources for all alternatives are summarized in **Appendix E**. The estimated impacts to park land, forest and FIDS habitat associated with the Preferred Alternative, Alternative 9A, are summarized in **Table VIII-3**.

The acreage of park mitigation will be based on providing replacement value for the property impacted by the Preferred Alternative including resources that are of comparable usefulness and functionality to the resources impacted by the Preferred Alternative. Desirable features of the mitigation sites include mature forests, native species, wildlife habitat, streams, wetlands, FIDS habitat, recreational opportunities and potential connectivity to other protected lands.

As noted above, forest impacts will be mitigated in accordance with the Maryland Forest Conservation Act and the Montgomery County Forest Conservation Law. Mitigation for forest impacts will be mitigated at a minimum ratio of 1:1, and it may be accomplished through a combination of afforestation, reforestation and/or forest preservation. While FIDS habitat is not specifically regulated by federal, state or local laws, it is MCDOT's goal to mitigate FIDS habitat at a minimum ratio of 1:1 replacement.

1. Potential Park, Forest and FIDS Mitigation Sites

While some forest and FIDS mitigation may be performed within the cleared areas of the project limits, off-site land purchases will be required to provide adequate park, forest and FIDS mitigation for the project. Consequently, MCDOT conducted a search for potential tracts of land



Table VIII-3: Parks and Forest Impacts of the Preferred Alternative

Park Name	Total Park Area (ac)	ALTERNATIVE 9A IMPACTS			
		Park Land (ac) (%)	FIDS		Forest (ac)
			Direct (ac)	Indirect* (ac)	
Wildcat Branch Tributary Park (M-NCPPC Department of Parks)	14.95	0.88 (5.9%)	0.00	0.00	0.34
Seneca Crossing Local Park (M-NCPPC Department of Parks)	28.10	3.65 (13.0%)	0.00	0.00	0.93
North Germantown Greenway Stream Valley Park (M-NCPPC Department of Parks)	380.80	24.89 (6.5%)	18.14	53.08	24.35
Great Seneca Stream Valley Park (M-NCPPC Department of Parks)	2,012.85	14.72 (0.7%)	1.30	21.04	11.00
M-NCPPC Department of Parks Sub-Total	2,436.70	44.14 (1.8%)	19.44	74.12	36.62
Blohm Park (City of Gaithersburg)	24.33	2.56 (10.5%)	0.00	0.00	1.06
South Valley Park (Montgomery Village)	32.10	2.27 (7.1%)	0.00	0.00	2.09
Other Parcel(s)		0.00	0.00	0.00	33.13
TOTAL		48.97	19.44	74.12	72.90

* Indirect FIDS impacts include the portion of interior forest that will be converted to FIDS buffer.

within the vicinity of the study area that could potentially serve as park, forest and FIDS mitigation sites. In addition to three sites identified by MCDOT, M-NCPPC subsequently offered four additional sites for consideration. In summary, a total of seven sites (**Figure VIII-1**) have been identified that could potentially provide park, forest and FIDS mitigation for the project. These mitigation sites are described in **Table VIII-4**.

Figure VIII-1 also identifies two parcels owned by Montgomery County: Emory Grove Hills Block E Parcel B and Parcel N775. These parcels have been identified as potential mitigation for impacts from the Preferred Alternative on Blohm Park, owned by the City of Gaithersburg. Montgomery County is coordinating with the City of Gaithersburg regarding appropriate mitigation for these impacts.

MCDOT identified three parcels located east of I-270 for potential mitigation: the Bethel Church Property, the Snow Property, and the Wilson Property (**Figure VIII-1**). The Bethel Church and Wilson Properties are located within the study area. The Snow Property is located north of the



Table VIII-4: M-NCPPC Potential Parks Mitigation Sites

Site ID ¹	Site Name Address	Parcel Area (ac)	Existing Streams (LF)	Stream Name(s)	Existing Wetland Area (ac)	Forest Conservation Area/FIDS (ac)	Potential Reforestation Area (ac)	Site Features
1	River Rd Shale Barrens 21300 River Rd Poolesville, MD 20837	89	15,406	Potomac River tributaries (2)	N/A ²	87/54	2 ³	<ul style="list-style-type: none"> Known location for RTE/Watch-list species
2	Broad Run 21800 Club Hollow Rd Dickerson, MD 20842	519	31,982	Broad Run and tributaries	21	336/183	183 ³	<ul style="list-style-type: none"> Connectivity for planned trail system
3	Limestone Corridor of Broad Run 23100 Whites Ferry Rd Dickerson, MD 20842	263	1,323	Potomac River tributary	101.3	235/57	28 ³	<ul style="list-style-type: none"> Known location for RTE/Watch-list species Connection to C&O Canal and Broad Run
4	Hyattstown Forest 25827 Old Hundred Rd Clarksburg, MD 20871	69	1,825	Bennett Creek	N/A ²	66/38	3 ³	<ul style="list-style-type: none"> Known location for RTE/Watch-list species
5	Snow Property 9961 Bellison Rd Damascus, MD 20872	103	4,391	Bennett Creek and 1 tributary	1.49	76/0	27	<ul style="list-style-type: none"> Connects to parcels previously identified by Parks Dept. for acquisition
6	Wilson Property 21521 Wildcat Rd Germantown, MD 20876	105	2,344	Wildcat Branch tributaries (2)	0.71	28/0	64	<ul style="list-style-type: none"> 298 specimen trees Within watershed of Use III-P tributary Located opposite Seneca Crossing Local Park
7	Bethel Church Property 10601 Brink Rd Germantown, MD 20876	119	2,736	Great Seneca Creek tributaries (2)	0.67	60/0	49	<ul style="list-style-type: none"> 397 specimen trees Potential to connect to North Germantown Greenway SVP

¹ Site ID Number taken from Potential Mitigation Site Map

² N/A indicates data unavailable.

³ Calculated based on non-forested area.

NOTE: N755 and Emory Grove Hills Block E Parcel B (Site #8) are shown on the Mitigation Site Map (Figure VIII-1), however they are not included on this table, which is focused on mitigation of impacts to M-NCPPC parks.



study area. The Bethel Church and Wilson Properties are mostly farmed with some mature forest, while the Snow Property is mostly forested. These properties range in size from 103 to 119 acres.

The four sites identified by the M-NCPPC Parks Department include three large land tracts in western Montgomery County (to the west of I-270 outside of the study area): River Road Shale Barrens, Broad Run, and Limestone Corridor. Hyattstown Forest is located north of the study area, immediately east of I-270. These sites range in size from 69 to 519 acres, and are mostly forested.

The key features of each mitigation site are summarized below. Additional information regarding the potential mitigation sites is presented in **Appendix E** and includes the following:

- Bethel, Wilson, and Snow Properties Natural Resource Inventory;
- Table Comparing Mitigation Sites;
- Montgomery County Parks PowerPoint on Park Sites for Mitigation Consideration: River Road Shale Barrens, Broad Run, Limestone Corridor, and Hyattstown Forest; and
- MCDOT PowerPoint on Park Sites for Mitigation Consideration: Bethel, Wilson, and Snow Properties.

Bethel Church Property

The 119.4-acre Bethel Church property in Germantown contains 66.4 acres of forest, two streams, eight wetlands, 397 specimen trees, and an occupied home. An early successional Tulip Poplar forest is located in the center of the site, which includes one wetland system and two perennial streams. A mid-successional Chestnut Oak forest is located in the northeast and northwest ends of the property and a mid-successional Tulip Poplar forest is located in the north-central, southern, and eastern sections of the property. Two unnamed tributaries to Great Seneca Creek, both originating from numerous seeps on the property, flow north to south in the center of the property and contain numerous, abutting forested wetlands.

Montgomery County has been working with this property owner for some time. As noted in the tables, this site has great potential for meeting many needs for parks and forest mitigation. The site is located within the study area and could provide connectivity to other public lands.

Snow Property

The 102.75-acre Snow property in Damascus contains 75.5 acres of forest, two streams, one channel, and eight wetlands. A mid-successional Chestnut Oak forest is located in the northern, upland section of the Snow property, and a mid-successional Tulip Poplar forest is located in the floodplains of an unnamed tributary to Bennett Creek. The southern section of the Snow property is predominantly an early successional Virginia pine forest, with an early to mid-successional Tulip Poplar forest adjacent to the stream/wetland complex of Bennett Creek, in the southwestern portion of the property. An old



farm field successional community dominates the central region of the study area. Bennett Creek tributary borders three abutting wetlands located in the southwestern portion of the property, five abutting wetlands located in the northern portion of the property, and an ephemeral channel in the south central portion of the property.

Wilson Property

The 105.3-acre Wilson property in Germantown contains 34.0 acres of forest, three streams, five wetlands, 298 specimen trees, and an abandoned house. A mid-successional Tulip Poplar forest is located in the low lying, riparian area abutting two unnamed tributaries to Wildcat Branch; and a mid-successional Chestnut Oak forest is located on the steeper, upland slopes. Two unnamed tributaries to Wildcat Branch, with abutting forested wetlands, are located within the riparian forest located in the northern section of the property. The vacant farmhouse, sheds, a trailer home, storage trailer, and dump piles are located on a hill near the southwest corner of the site, and would require an investigation for the presence of hazardous materials.

River Road Shale Barrens

The 89.2-acre River Road Shale Barrens in Poolesville (also known as the Goldberg and Wilmot Properties), contains 87.1 acres of forest including 54.1 acres of FIDS habitat, and 15,406 lf of stream. This site contains a unique plant community supported by shale bedrock, and is a known location for federal or state-listed rare, threatened, or endangered species or Montgomery County watch-list species. The site would expand an existing M-NCPPC designated Best Natural Area, and complete a Conservation Park experience with space for trailheads and parking, and contains one possible archaeological resource.

Broad Run

The 519.3-acre Broad Run near Poolesville (also known as the Beverly Properties) contains 335.8 acres of forest, 183.2 acres of FIDS habitat, 31,982 lf of stream, and 21.3 acres of wetlands. This site would extend M-NCPPC property in the Broad Run stream valley, provide connectivity for a planned trail system, and contains one or two historic sites listed on the Montgomery County Locational Atlas of Historic Sites.

Limestone Corridor

The 263.2-acre Limestone Corridor property located west of Poolesville contains 235.2 acres of forest, 57.3 acres of FIDS habitat, 1,323 lf of stream, and 101.3 acres of wetlands. The site contains a unique plant and wetland community supported by limestone bedrock, a trail connection to the C&O Canal trail and Broad Run, and is a known location for federal or state-listed rare, threatened, or endangered species or Montgomery County watch-list species.

Hyattstown Forest

The 69.5-acre site (also known as Signal Knob) located in Hyattstown contains 66.2 acres of forest, 37.6 acres of FIDS habitat, and 1,825 lf of stream. This site is an excellent upland forest



community, a known location for federal or state-listed rare, threatened, or endangered species or Montgomery County watch-list species; and contains abundant anecdotal evidence for the presence of significant cultural resources.

Summary

Montgomery County Planning Board has directed the MCDOT and M-NCPPC to “*develop mitigation for park impacts of a selected alternative that combines park replacement, recreational facilities (e.g. trails) and environmental stewardship projects (e.g. stream restoration, wetland creation and/or stormwater retrofits).*” One of the keys to park land mitigation is securing parcels of land with significant acreage and willing property owners. Due to the density of population and economic drivers in Montgomery County, large parcels of land for preservation are challenging to find. MCDOT and M-NCPPC have identified several options within the study area and in proximity to the proposed corridor. Many of the sites are adjacent to existing parks or would provide connectivity between publicly owned lands. The sites are varied in their natural resource composition. All present opportunities for active and passive recreational uses. Through continued coordination, MCDOT and M-NCPPC will work to finalize a parks/forest/FIDS mitigation plan that includes one or some of the identified mitigation sites noted in **Table VIII-4**.