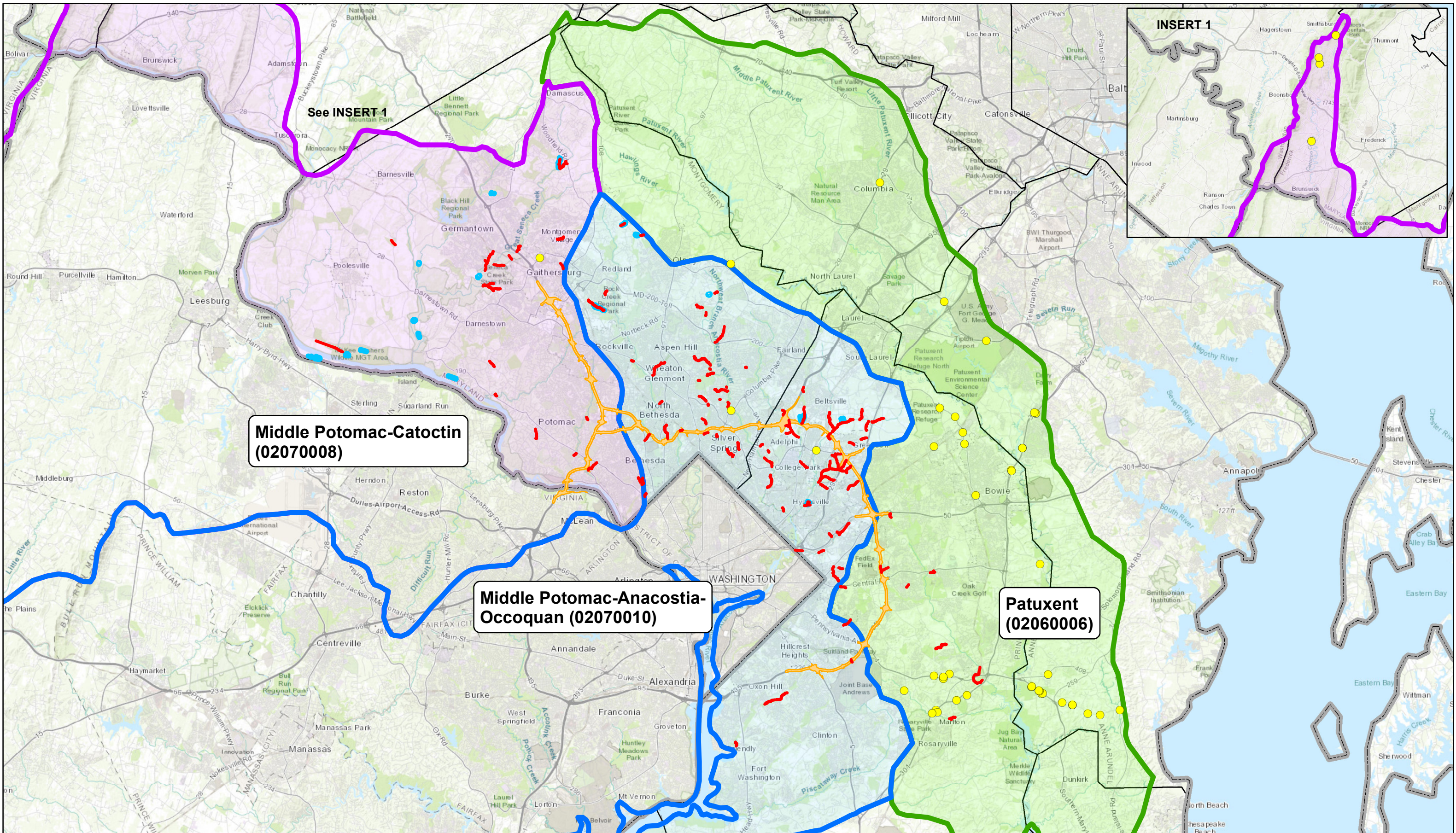




APPENDIX F: PUBLIC SITE WINDSHIELD & WALKTHROUGH VICINITY MAP & LISTS



Legend

MLS Corridor	Middle Potomac-Anacostia-Occoquan	Stream Sites
State Boundary	Middle Potomac-Catoctin	Wetland Sites
County Boundary	Patuxent	Fish Passage Sites

0 2.5 5 7.5 10 Miles
1 in = 5 Miles

**Figure F-1. Public Mitigation
Windshield & Walkthrough
Site Vicinity Map**



WINDSHIELD & WALKTHROUGH WETLAND MITIGATION SITE LISTS

Table F-1. Windshield and Walkthrough Wetland Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Creation Credits (ac)	Potential Enhancement Credits (ac)	Potential Preservation Credits (ac)	Comments	Status	Field Score
MPAO0008	Prince George's	BARC	39.026019 -76.930444	North of Yuma St. & West of N Farm Rd.	0.0	0.0	0.7	BARC recommendation. Site added during walkthrough survey. Large man-made wet pond with extensive PEM wetland fringe located adjacent to Little Paint Branch. Site surrounded by berms dominated by dry scrub-shrub habitat. Water depth is approximately 4" - 2' deep. Low potential for ecological uplift due to site already providing habitat for reptiles, amphibians, waterfowl, etc.	Removed due to limited potential for functional uplift	63
MPAO0032	Montgomery	M-NCPPC & Derwood Station HOA	39.11553546 -77.14594816	Southeast of Redland Rd. Crabbs Branch Stream Valley Park	1.6	1.9	0.2	Site added during walklthrough survey. Good potential for wetland creation, enhancement, preservation, and stream restoration. Majority of site consists of floodplain wetlands dominated by reed canary grass with scattered trees. Groundwater observed 3.5 feet below surface in non wetland areas in August. High potential for overall ecological uplift. Potential access from maintained HOA roads.	Selected for Potential Mitigation Site List (Site AN-1). Combine with stream site MPAO0012.	71
WSS-150078	Montgomery	M-NCPPC	39.126198 -77.030596	Northwest of Layhill Rd. & Norwood Rd. intersection. Red Door Store Historical/Cultural Park.	0.0	0.0	0.0	Ag. field located in high landscape position. Site removed following windshield survey.	Removed due to high position in landscape	NA
WSS-150093	Montgomery	M-NCPPC	39.174483 -77.107148	North of Ashbourne Pl. NB Stream Valley Unit 4.	0.0	0.0	0.0	Mix of forest and scrub shrub located in high landscape position. Site removed following windshield survey.	Removed due to high position in landscape	NA
WSS-150149	Montgomery	M-NCPPC	39.184225 -77.119341	South of Stanbrook Ln. Upper Rock Creek LP & Rock Creek SVU 16.	0.0	0.0	0.0	Open meadow, scrub shrub, and tree plantings in high landscape position. Appears to lack a source of hydrology. Site removed following windshield survey.	Removed due to high position in landscape	NA
WSS-160078	Prince George's	BARC	39.0233398 -76.889736	South of Beaver Dam Rd.	0.0	0.0	0.0	Ag. field in high landscape position currently being used by BARC. Removed following windshield survey.	Removed due to land use conflicts & high position in landscape	NA
WSS-160097	Prince George's	BARC	39.023895 -76.933111	Southwest of South Dr.	0.0	0.0	0.0	Ag. field in high landscape position currently being used by BARC. Removed following windshield survey.	Removed due to land use conflicts & high position in landscape	NA
WSS-160137	Prince George's	M-NCPPC	38.955140 -76.926332	West of Greenway Dr. Anacostia River SVP.	0.0	0.0	0.0	Neighborhood park with specimen trees throughout site. Site removed following windshield survey.	Removed due to specimen tree impacts	NA

Site selected for Potential Mitigation Site List

Table F-2. Windshield and Walkthrough Wetland Mitigation Sites - Middle Potomac-Catoctin

Database ID	County	Owner	Lat/Long	Location	Potential Creation Credits (ac)	Potential Enhancement Credits (ac)	Potential Preservation Credits (ac)	Comments	Status	Field Score
MPOC0001	Montgomery	DNR	39.079584 -77.392588	South of Hunting Quarter Rd. McKee Beshers Wildlife Management Area.	7.3	0.0	0.0	DNR recommendation. Site added during walkthrough survey. Site consists of active farm field with open water areas located in Potomac River floodplain. Groundwater observed 14" below ground surface in unsaturated areas in March. No hydric soil indicators observed, likely due to annual tilling. High potential for overall ecological uplift. Existing gravel road provides direct access to site with no tree impacts. Wetlands of Special State Concern north of site. No utilities observed within site.	Selected for Potential Mitigation Site List (Site CA-1)	95
MPOC0002	Montgomery	DNR	39.057434 77.298221	West of Pennyfield Lock Rd. Dierssen Wildlife Management Area.	0.0	12.2	0.0	DNR recommendation. Site added during walktrhoguh survey. Two large wet/dry ponds managed by DNR for waterfowl habitat just north of the Potomac River. Reed canary wetlands throughout site with groundwater observed at 3 inches below ground surface. To meet DNR's goal of providing open water habitat in winter and PEM wetlands in summer, the site would require seasonal management of siphons and C&O canal locks. Access is limited to the 10 foot wide C&O canal trail that would require crossing two foot bridges, one of which requires replacement.	Removed due to required seasonal management & access constraints	81
WSS-150056	Montgomery	M-NCPPC	39.209133 -77.258672	North of Milestone Manor Ln. North Germantown Greenway SVP.	0.0	0.0	0.5	High quality PSS throughout majority of site. Site removed following windshield survey.	Removed due to existing high quality PSS wetlands	NA
WSS-150069	Montgomery	M-NCPPC	39.15145062 77.3353438	South of Schaeffer Rd. Little Seneca Stream Valley Park.	0.0	0.0	0.4	Majority of site consists of high quality PSS floodplain wetland adjacent to Little Seneca Creek. 0-2 inches of surface water observed throughout site in November. Common species include persimmon, river birch, black willow, button bush, swamp rose, sensitive fern, soft rush, and arthraxon. Few upland scrub shrub islands dominated by red cedar. Site is accessible from Schaeffer Rd, however access within site would require tree clearing.	Removed due to existing high quality PSS wetland throughout site	72
WSS-150088	Montgomery	DNR	39.073307 -77.441736	Selden Island on the south bank of the Potomac River	0.0	1.9	0.0	Open meadow located on island just south of the Potomac River. Site removed following windshield survey.	Removed due to access constraints	NA
WSS-150089	Montgomery	DNR	39.074506 -77.448431	Selden Island on the south bank of the Potomac River	0.0	5.5	0.0	Open meadow located on island just south of the Potomac River. Site removed following windshield survey.	Removed due to access constraints	NA
WSS-150085	Montgomery	DNR	39.104228 -77.340277	East of Montevideo Rd. Seneca Creek State Park.	0.0	0.0	0.0	Site dominated by upland scrub shrub in high landscape position. Site removed following windshield survey.	Removed due to high position in landscape	NA
WSS-150086	Montgomery	DNR	39.091571 -77.334493	West of Berryville Rd. Seneca Creek State Park	0.0	0.0	0.0	Majority of site consists of forest surrounding perennial stream in high landscape position. Site removed following windshield survey.	Removed due to existing forest and high position in landscape	NA

Site selected for Potential Mitigation Site List

Table F-2. Windshield and Walkthrough Wetland Mitigation Sites - Middle Potomac-Catoctin

Database ID	County	Owner	Lat/Long	Location	Potential Creation Credits (ac)	Potential Enhancement Credits (ac)	Potential Preservation Credits (ac)	Comments	Status	Field Score
WSS-150087	Montgomery	DNR	39.07594861 -77.41050967	East of Sycamore Landing Rd. McKee Beshers Wildlife Management Area.	5.8	0.7	0.0	Site managed by DNR for woodcock habitat & hunting. Majority of site is dry meadow with a few small PEM wetlands located in the Potomac River floodplain. Site surrounded by PFO wetlands. Groundwater observed 6"-2' below ground surface in December. High potential for ecological uplift. Existing access to site along edge of adjacent farm fields. No utilities observed within site.	Removed at DNR's request due to site management for woodcock habitat	91
WSS-150133	Montgomery	DNR	39.14076147 -77.27203494	Southwest of Great Seneca Hwy. Seneca Creek State Park	0.9	0.5	0.0	Majority of site consists of upland hillslope where wetland creation is not feasible. Existing PEM wetlands at eastern and western ends of site dominated by invasives and scattered trees. Western wetland hydrology source is from upstream sewage treatment plant. Western end of site is located in the Seneca Creek floodplain. Potential access from dirt road off Seneca Creek Hwy. and under adjacent overhead powerlines.	Removed due to majority of site consisting of upland hillslopes	52
WSS-150147A	Montgomery	M-NCPPC	39.23278219 -77.18832166	South of Watkins Rd. Great Seneca SVU 4.	7.1	0.9	0.0	Good potential for wetland creation/enhancement and stream restoration. Site consists of floodplain dominated by reed canary grass with scattered trees. Two large PEM wetlands in western floodplain dominated by cattail and reed canary grass. No wetlands observed in eastern floodplain. Groundwater observed 2.5 feet below surface in non wetland areas in November. No utilities observed within site. High potential for overall ecological uplift. Potential Access from Watkins Rd. Located just downstream of wetland site WSS-150147B.	Selected for Potential Mitigation Site List (Site CA-2). Combine with stream site MO_00013A.	85
WSS-150147B	Montgomery	M-NCPPC	39.23521278 -77.18778527	North of Watkins Rd. Magruder SVU 1.	1.5	0.9	0.2	Site added during windshield survey. Good potential for wetland creation, enhancement, preservation and stream restoration. Site consists of floodplain dominated by reed canary grass with scattered trees. Large reed canary wetland in western floodplain. Groundwater observed 2-3 feet below surface in non wetland areas. High quality PSS wetland just east of site. High potential for overall ecological uplift. No utilities observed within site. Potential access from Watkins Rd. Located just upstream of wetland site WSS-150147B.	Selected for Potential Mitigation Site List (Site CA-3). Combine with stream site MO_00013B.	85

Site selected for Potential Mitigation Site List



WINDSHIELD & WALKTHROUGH STREAM MITIGATION SITE LISTS

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
MO_00029	Montgomery	M-NCPPC	39.013798 -77.075727	East of Kensington Pkwy. Kensington Pkwy SVP & Rock Creek SVU 2.	4,948	4-6 foot tall banks throughout the site, with approximately 15% that are eroded. Floodplain consists of a narrow strip of mowed lawn. Potential functional uplift limited to bed and bank stabilization. Site becomes more incised at downstream end of reach. Riparian enhancement and floodplain development limited due to adjacent trails, roadways, and residential communities. Existing open access to entire site. Several exposed instream utility crossings.	Removed. Culvert would need to be replaced to address residential concerns with flooding problems. Limited potential for ecological uplift.	53
MO_00034	Montgomery	M-NCPPC	39.014726 -77.059196	South of Campbell Dr. Rock Creek SVU 2.	882	Majority of bed and banks are stabilized by bedrock and large boulders. 3-5 foot tall banks throughout most of site. Floodplain consists of steep, confined valley with mature forest. Functional uplift limited to a few areas of bank stabilization. Access would be difficult due to surrounding steep slopes and mature forest.	Removed due to limited uplift potential and access constraints	36
MO_00038	Montgomery	M-NCPPC	39.116035 -77.040559	North of Chapel Hill Rd. Norwood Village NCA.	2,912	Evidence of previous restoration within downstream 1,100 LF of site. 4-8 foot tall banks with approximately 40% that are eroded within site. Majority of site surrounded by mature forest. Potential for channel stabilization, riparian enhancements, and upstream habitat improvements. Some access to site from Chapel Hill Road, however forest clearing would be required for haul roads and upstream access. Several instream sewer crossings.	Removed at M-NCPPC's request due to existing stream restoration	31
MO_00042	Montgomery	M-NCPPC	39.067483 -77.084188	East of Turkey Branch Pkwy. Mathew Henson State Park.	6,936	Evidence of previous restoration throughout site. 5-15 foot tall banks with approximately 60% that are eroded within site, with several areas of severe erosion. Site surrounded by forest. Potential uplift limited to geomorphic and bank stabilization. Urban watershed would make biological and water quality improvements difficult. Forest clearing would be required to access entire site. Several instream sewer crossings within site.	Removed at M-NCPPC's request due to existing stream restoration	35
MO_00044	Montgomery	M-NCPPC	39.128343 -77.022104	North of Ednor Rd. Woodlawn Cultural SP.	1,151	1-3 foot wide channel with minor to moderate localized bank erosion. Site surrounded by forest. Majority of site appears stable with limited potential for functional uplift. Site removed following windshield survey.	Removed due to site stability and limited uplift potential	NA
MO_00053	Montgomery	M-NCPPC	39.009242 -77.094523	North of Cedar Ln. Elmhirst Parkway NCA.	2,391	3-5 foot tall banks throughout site that are mostly stable. Good instream habitat. Old walls stabilizing some banks. Site removed following windshield survey.	Removed due to site stability and limited uplift potential	NA
MPAO0001	Prince George's	BARC	39.018526 -76.949208	East of I-95/I-495 Park & Ride. North of Marlborough Way.	1,202	BARC recommendation. Upstream section is concrete lined and natural channel that is highly unstable with severe bank erosion and exposed sewer line. Middle section is incised but stabilized by tree roots and not recommended for restoration. Downstream section has moderate localized bank erosion. Site surrounded by active agricultural fields and forest. Potential for sediment reduction and instream habitat improvements. Access from adjacent agriculture fields.	Selected for Potential Mitigation Site List (Site AN-7). Combine with MPAO0003.	52
MPAO0002	Prince George's	BARC	39.014569 -76.943005	Southwest of Cherry Hill Rd. & I-95	4,795	BARC recommendation. Paint Branch. Majority of site consists of 8-12 foot tall banks stabilized by tree roots or rip-rap. Three localized severe bank erosion areas. Two sewer crossings. Very limited uplift potential due to stability of site and floodplain consisting of agricultural fields that are used by BARC.	Removed due to limited uplift potential & land use conflicts	50

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
MPAO0003	Prince George's	BARC	39.012977 -76.945156	East of Marlborough Way	1,987	BARC recommendation. Upstream section stable and removed from further consideration. Section downstream of culvert is unstable with two culverts (1 failure) creating fish blockages. Site surrounded by forest with extensive invasives. Potential for fish blockage removal, instream habitat improvements, and invasive treatment. Access from adjacent agricultural fields.	Selected for Potential Mitigation Site List. (Site AN-7). Upstream section removed due to stability. Combine with MPAO0001.	44
MPAO0004A	Prince George's	BARC	39.026726 -76.929588	South of Sellman Rd.	4,212	BARC recommendation. Little Paint Branch. Majority of site has 6-10 foot that are stabilized by tree roots or rip rap. Channel appears to have been straightened and is surrounded by floodplain berms. Site surrounded by farm fields used by BARC. Good existing instream habitat. No opportunity for floodplain development due to adjacent berms and farm fields. Site connects downstream to MPAO0004B.	Removed due to limited uplift potential & land use conflicts	36
MPAO0004B	Prince George's	BARC	39.021452 -76.931587	North of I-495 & South of Yuma St.	1,124	BARC recommendation. Little Paint Branch. Majority of site has of 3-6 foot tall banks that are stable. Two areas with localized moderate to severe erosion. Site surrounded by forest and farm field. Limited opportunity for floodplain development due to adjacent farm field. Access would require forest clearing. Site connects upstream to MPAO0004B.	Removed due to limited uplift potential & land use conflicts	26
MPAO0005	Prince George's	BARC	39.021837 -76.903277	West of Edmonston Rd.	5,773	BARC recommendation. Indian Creek. Banks are less than three feet tall throughout most of site with minimal erosion areas. Braided channels throughout site. Site is surrounded by forest with some wetlands that would make access difficult. Overall potential uplift potential is very limited.	Removed due to limited uplift potential	27
MPAO0006	Prince George's	BARC	39.014942 -76.898731	Southwest of Edmonston Rd.	1,407	BARC recommendation. Indian Creek. Consistent 3 foot tall eroded banks upstream of braided section and downstream of Edmonston Road. Channel is surrounded by a mix of young and mature deciduous forest, limiting floodplain development. Potential for lateral stability, habitat enhancement, floodplain reconnection, and bedform diversity improvements. Potential access through field on southeastern bank, however access to majority of stream would require tree impacts.	Removed due to limited potential for ecological uplift	44
MPAO0007	Prince George's	BARC	39.028099 -76.869391	North & South of Beaver Dam Rd.	3,859	BARC recommendation. Downstream section contains mapped wetlands of special state concern. Upper 2/3 of reach is completely eroded due to downcutting. Lower 1/3 has 4 foot tall eroded banks. Channel surrounded by a mix of young and mature deciduous forest. Potential for floodplain development, vertical and lateral stabilization, and in-stream habitat improvements. Potential access through existing BARC roadways, however access to sections of the stream would require tree clearing. Culvert under Beaverdam Rd should be considered for replacement. Sewer line above stream and surrounding mature forest may limit available restoration methods.	Removed due to wetlands of special state concern	53

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
MPAO0009	Montgomery	M-NCPPC	38.996538 -77.009364	South of Sligo Creek Pkwy. Sligo Creek SVU 2.	2,668	M-NCPPC recommendation. Riprap along 70-80% of banks within site. 5 foot tall eroded banks along 20-30% of reach. Most of site is stable due to riprap along channel and not many opportunities exist for ecological uplift. Site surrounded by forest and recreational park. Multiple access routes exist with trails/parking lots/ and roads adjacent to channel. Site could be combined with MPAO0028.	Removed due to limited potential for ecological uplift	30
MPAO0010	Montgomery	M-NCPPC	39.010793 -77.02182	West of Brunette Ave. Sligo Creek SVU 3.	644	M-NCPPC recommendation. Riprap along majority of reach. 3 foot tall eroded banks along 10% of reach. Channel is surrounded by a roadway and a mix of scrub-shrub and forest, limiting floodplain development. Potential uplift limited to lateral channel stability and instream habitat improvements. Potential access through adjacent M-NCPPC roadway. Site could be combined with MPAO0017.	Removed due to limited potential for ecological uplift	48
MPAO0011	Montgomery	M-NCPPC	39.035736 -77.030943	South of University Blvd. Sligo Creek SVU 4.	546	M-NCPPC recommendation. 4.5 foot tall eroded banks within 40% of site. Site surrounded by forested parkland. Floodplain development limited by adjacent trail and roadway. Potential for fish passage, lateral stabilization, floodplain access, and bedform diversity improvements. Potential access through adjacent roadway and trail with minor tree clearing required.	Removed due to small site size	43
MPAO0012	Montgomery	M-NCPPC & Derwood Station HOA	39.117108 -77.149593	Southeast of Redland Rd. Crabbs Branch SVP.	7,657	M-NCPPC recommendation. Crabbs Branch. 3-8 foot tall severely eroded banks throughout site. Incised channel surrounded by reed canary floodplain with scattered trees. Upstream end of site is forested. Potential for sediment reduction, floodplain connectivity, wetland creation/enhancement, aquatic habitat improvements, and riparian buffer plantings. Potential access through adjacent HOA roads.	Selected for Potential Mitigation Site List (Site AN-1). Combine with wetland site MPAO0032.	71
MPAO0013	Montgomery	M-NCPPC	39.110435 -77.032964	East of Layhill Rd. Northwest Branch Golf Course.	1,014	M-NCPPC recommendation. Existing stream restoration within site that appears mostly stable or buried. 5 foot tall banks throughout site with localized areas of moderate to severe bank erosion. Channel surrounded by mid-successional forested parkland and a golf course. Limited opportunities for sediment reduction and floodplain development improvements. Potential access from golf course, however most access to the stream would require forest clearing. Site located just upstream of ICC site NW-170.	Removed due to site stability and limited uplift potential	35
MPAO0014	Montgomery	M-NCPPC & South Stonegate HOA	39.092946 -77.016077	South of Bonifant Rd. Northwest Branch SVU 5.	5,967	M-NCPPC recommendation. 3-8 foot tall severely eroded banks throughout site. Incised channel surrounded by poor quality forest with extensive invasives. Potential for sediment reduction, floodplain development, fish passage, invasive treatment, and aquatic habitat improvements. Potential access through old access used for adjacent ICC stream restoration project (NW-4).	Selected for Potential Mitigation Site List (Site AN-3). Section upstream of Bonifant Rd. removed due limited functional uplift potential and site constraints.	58

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
MPAO0015	Montgomery	M-NCPPC	39.071546 -77.110477	South of Veirs Mill Rd. & east of Twinbrook Pkwy. Rock Creek SVU 6.	720	M-NCPPC recommendation. Majority of reach appears stable with the exception of three localized severe bank erosion areas. Culvert failure at downstream end of site. Channel surrounded by mid successional forest and steep valley slope to the north limiting potential for floodplain development. Improvements limited to sediment reduction and removal of failed culvert. Good existing instream habitat. Potential access through existing sewerline clearing would require minimal tree impacts.	Removed due to site stability and limited uplift potential	22
MPAO0016	Montgomery	M-NCPPC	39.020415 -77.033087	East of Dublin Dr. Sligo Creek SVU 4.	177	M-NCPPC recommendation. Localized areas of minor to moderate erosion along 4-8 foot tall banks. Old ford crossing at upstream end of site creating fish blockage. Site surrounded by forest with patchy open invasive areas. Potential for sediment reduction, fish passage, and riparian plantings. Potential access along trail or upstream MPAO0031 old clearing. Recommend avoiding restoration near pedestrian bridge where stream appears stable. Combine with MPAO0031.	Removed due to previous stream restoration & less potential for ecological uplift	39
MPAO0017	Montgomery	M-NCPPC	39.009773 -77.021112	South of Leighton Ave. Sligo Creek SVU 3.	283	M-NCPPC recommendation. Bank erosion limited to perched culvert outfall. Channel surrounded by narrow strip of marginal forest adjacent to an open field. Potential for buffer enhancements and vertical/lateral stabilization at perched culvert outfall. Potential access through adjacent roadway and open field.	Removed due to small site size and limited potential for ecological uplift	61
MPAO0018	Montgomery	M-NCPPC	39.055863 -77.040362	South of Femmont Ln. Wheaton Regional Park.	530	M-NCPPC recommendation. Deeply incised ephemeral channel surrounded by mature forested parkland. 4-7 foot tall eroded banks within 70% of reach. Potential for vertical stabilization to reduce sediment transport to downstream pond. Potential access through paved park trail parallel to channel. Easy access to both banks/floodplains. Bedrock and sand deposition throughout reach.	Removed due to ephemeral channel	63
MPAO0019	Montgomery	M-NCPPC	39.034176 -77.010231	North of Columbia Pike (Rt. 29). Northwest Branch SVU 4.	3,616	M-NCPPC recommendation. Northwest Branch just upstream from 25 foot tall dam. 4 foot tall stable banks throughout majority of reach. Active floodplain provides no potential for floodplain development. Opportunities for dam removal and fish passage, release of trapped sediment behind dam, and bank stabilization. Potential access through forested floodplain requiring tree impacts.	Removed due to natural fish blockage downstream of dam and limited potential for ecological uplift upstream of dam.	35
MPAO0020	Montgomery	M-NCPPC	39.065186 -77.028844	East of Kemp Mill Rd. Northwest Branch SVU 4.	448	M-NCPPC recommendation. 8-10 foot tall banks throughout reach. 40% of banks appear unstable/slumping, while 60% of banks appear stable. Channel surrounded by mature forest with some wetlands. Floodplain slightly less than 10 times the width of the channel, confined by steep valley slope and roadway. Potential for fish blockage removal, aquatic habitat enhancements, and lateral/vertical channel stabilization. Some potential for floodplain connectivity. Potential access through existing utility access road.	Removed due to small site size	43

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
MPAO0021	Montgomery	M-NCPPC & Mo. County	39.065186 -77.028844	North of Lambertson Dr. Northwest Branch SVU 4.	4,832	M-NCPPC recommendation. Northwest Branch trib. Greater than 50% of reach with moderate to severe bank erosion. Channel surrounded by mature forest and steep valley slopes limiting floodplain development. Potential for lateral migration, geomorphic stability, aquatic habitat, and bedform diversity improvements. Several potential access routes exist through adjacent trails requiring some tree clearing.	Selected for Potential Mitigation Site List (Site AN-5). Majority of downstream section is on the USACE's priority list for the Anacostia Watershed Restoration Program and was therefore removed.	54
MPAO0022	Montgomery	M-NCPPC	39.041527 -77.036395	North of Ladd St. Sligo Creek SVU 5.	3,218	M-NCPPC recommendation. Five foot tall eroded banks throughout majority of site. Channel surrounded by mature forests with scattered wetlands. Potential for lateral and vertical channel stabilization and floodplain reconnection in upstream reach. Potential access routes through wide trails adjacent to stream and open mature forest for remaining areas.	Removed due to less potential for ecological uplift	49
MPAO0023	Montgomery	Mo. County	39.037829 -77.080548	Median on Denfeld Ave.	1,078	M-NCPPC recommendation. Small ephemeral channel in Mo. County ROW. 1-3 foot tall banks that are mostly stable with localized areas of minor erosion. Channel has been stabilized in several areas with imbricated walls and rip-rap. No potential for ecological uplift due to ephemeral nature of channel.	Removed due to ephemeral channel	55
MPAO0024	Montgomery	M-NCPPC	39.066586 -76.991351	Northeast of Maple St. Cannon Road Local Park.	462	M-NCPPC recommendation. 8-9 foot tall eroded banks throughout site. Incised channel surrounded by mature forest, limiting floodplain development. Potential for lateral migration and vertical stability improvements. Potential access from Maple Street requiring some tree impacts. Site could tie into downstream ICC stream restoration site (PB-12).	Removed due to small site size	53
MPAO0025	Montgomery	Mo. County	39.04022 -77.01838	Northeast of Kenbrook Dr.	266	M-NCPPC recommendation. 5 foot tall eroded banks within 60% of site. Concrete lined channel at upstream end of site. Majority of site consists of incised channel surrounded by mature forest. Potential for lateral migration and vertical stability improvements. Potential access through trail off of Hillsboro Drive. Existing stream restoration downstream of site.	Removed due to small site size	49
MPAO0026	Montgomery	M-NCPPC	39.050182 -77.011505	Northeast of Hermleigh Rd. Northwest Branch SVU 4.	238	M-NCPPC recommendation. No channel observed. Flow disperses into PFO wetland. Site consists of mature forest.	Removed due to no restoration potential	28
MPAO0027	Montgomery	Mo. County	39.01234 -77.034252	Northeast of Columbia Blvd.	1,369	M-NCPPC recommendation. 4-8 foot tall eroded banks within 40% of site. Channel surrounded mostly by forest. Limited potential for floodplain development south of channel due to residential community. Potential for fish blockage removal, lateral/vertical channel stabilization, instream habitat and bedform diversity improvements, and floodplain reconnection north of channel. Potential access through adjacent road/trail with minimal tree clearing.	Removed due to tree impacts & limited upstream habitat	43

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
MPAO0028	Montgomery	M-NCPPC	38.993594 -77.005321	East of Devon Rd. Sligo Creek SVU 1.	766	M-NCPPC recommendation. Five foot tall banks throughout most of site stabilized by rip rap and boulder protection. Channel surrounded by narrow forested buffer. Floodplain development limited by adjacent roadway and residential housing. Potential uplift limited to fish blockage removal and vertical stabilization of the channel. Access from Sligo Creek Pkwy.	Removed due to limited potential for ecological uplift	26
MPAO0029	Montgomery	M-NCPPC	39.00188 -76.999002	North of Piney Branch Rd. Long Branch SVU 2.	2,575	M-NCPPC recommendation. 4-7 foot tall eroded banks throughout majority of site. Evidence of past stream restoration at upstream end of site appears stable. Active stream work at downstream end of site. Channel surrounded by forest. Potential for lateral/vertical channel stabilization, floodplain development, and invasive species treatment. Potential access through nearby community center and park requiring some tree clearing.	Removed due to previous restoration & ongoing work on-site	47
MPAO0030	Montgomery	M-NCPPC	39.072737 -77.038804	East of Layhill Rd. Northwest Branch SVU5.	5,800	M-NCPPC recommendation. Bel Pre Creek. 4-7 foot tall eroded banks within 35% of site. Channel surrounded by forest with scattered wetlands and tree plantings. Potential for lateral stabilization, aquatic habitat and riparian buffer improvements and water quality treatment. Potential access to downstream reach from Tivoli Lake Blvd. Access to upstream reach from Middle Bridge Drive or the M-NCPPC Hickory Hill pool.	Removed. Site listed on the USACE's priority list for the Anacostia Watershed Restoration Program (Site AN-2).	44
MPAO0031	Montgomery	M-NCPPC & Mo. County	39.022574 -77.034107	South of Woodman Ave. Sligo Creek SVU 4.	2,156	M-NCPPC recommendation. Localized areas of moderate to severe erosion along 4-8 foot tall banks. Evidence of past stream restoration with some sections appearing stable. Old ford crossing at downstream end of site creating fish blockage. Site surrounded by forest. Potential for sediment reduction, fish passage, and floodplain development east of stream. Potential access along old clearing east of stream. Combine with MPAO0016.	Removed due to previous stream restoration & less potential for ecological uplift	43
PG_00002	Prince George's	M-NCPPC	38.794602 -76.95533	Between Brinkley Rd. & Bock Rd. Henson Creek SVP.	9,051	Henson Creek. 5-7 foot tall banks throughout site mostly stabilized by tree roots, herbaceous veg or rip rap. Localized moderate to severe bank erosion. Site mostly surrounded by mid-successional forest. Good instream habitat. Limited potential for overall ecological uplift. Floodplain development limited by pedestrian trail, horse track, and adjacent land owners. Existing access along pedestrian trail & grass swale.	Removed due to limited uplift potential	31
PG_00016	Prince George's	SHA, PEPCO & M-NCPPC	39.048994 -76.931214	South of Powder Mill Rd & in the median of I-95. Little Paint Branch SVP.	1,569	Little Paint Branch. Section between I-95 consists of concrete lined channel and east of I-95 consists of natural channel with existing imbricated rock structures. Little to no evidence of bank erosion throughout site. Site is surrounded mostly by meadow with some forest at downstream end. Potential limited to riparian improvements and vertical channel stabilization. Potential existing access from I-95, M-NCPPC parkland, or utility ROW with minimal tree impacts.	Removed due to limited uplift potential	53
PG_00077	Prince George's	WMATA, M-NCPPC & Mayor & Town Council of Cheverly	38.915426 -76.912602	South of Columbia Park Rd. Jesse J. Warr Jr. Park	1,669	Majority of site on WMATA properties. Deeply incised channel. 3-10 foot tall banks with the majority of the banks protected by gabion baskets. Some areas of localized severe erosion. Segment east of 64th Avenue is stable. Site surrounded by mature forest with extensive invasives. Potential uplift limited to geomorphic channel stabilization and instream habitat improvements. Access would require forest clearing.	Removed due to site stability and no response from WMATA	40

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
PG_00079	Prince George's	M-NCPPC & City of Seat Pleasant	38.89304891 -76.89516754	South of Birchleaf Ave. J. Franklyn Bourne Pool	1,068	Deeply incised channel with 6-11 foot tall severely eroded banks throughout site. Potential for reducing erosion and improving instream habitat. Some potential for floodplain development in downstream section. Site surrounded by forest. Sewer line clearing east of site with small tree plantings could provide potential access.	Removed due to less potential for ecological uplift	54
PG_00097	Prince George's	M-NCPPC, PG County & Private	38.756622 -77.000749	South of Oxon Hill Rd. Henson Creek SVP.	1,568	Henson Creek. Site located in Historic District. 5-6 foot tall banks with moderate to severe erosion throughout site. Extensive deposition bars within site. Potential for sediment reduction, floodplain development and instream habitat improvements. Site surrounded by forest. Potential access through old WSSC clearing west of site and abandoned road east of site.	Removed due to location within historic district	44
PG_00110	Prince George's	City of Greenbelt	39.004697 -76.881246	North of Lakeside Dr.	1,764	1-3 foot tall banks stabilized by vegetation. Majority of site appears stable. Site surrounded by forest to north and ball fields to the south. Limited potential for functional uplift. Site removed following windshield survey.	Removed due to channel stability and limited uplift potential	NA
PG_00111	Prince George's	BARC	38.915426 -76.912602	West of 295 & South of Beaver Dam Rd.	3,154	Entire site surrounded by wetlands of special state concern and forest. 50% of banks are eroded within site. Upstream section is severely incised with 4-9 foot tall banks. Downstream section has 3-4 foot tall banks and appears to be connected to floodplain that has several wetlands. Potential improvements to upstream section include bed and bank stabilization, instream habitat improvements, and floodplain development. Potential access through utility ROW, however tree clearing would be required to access stream.	Removed due to wetlands of special state concern	48
PG_00112	Prince George's	BARC	39.023302 -76.85279	North of Beaver Dam Rd. & between 295 and Soil Conservation Rd.	4,147	Entire site surrounded by wetlands of special state concern and forest. 2 foot tall banks throughout site with minor erosion. Some areas with localized moderate bank erosion. Limited potential for floodplain development. Potential access along BARC & utility roads, however access to stream would require tree impacts.	Removed due to wetlands of special state concern and limited potential for ecological uplift	27
PG_00114	Prince George's	City of Greenbelt, SHA & Private	39.008461 -76.904091	Cherrywood Ln.	1,235	Three foot tall banks throughout site that are mostly armored and stable. Site mostly surrounded by mature deciduous forest. Potential geomorphic stabilization near confluence with Indian Creek. Otherwise uplift potential is very limited. Access would require forest clearing.	Removed due to limited uplift potential	31
PG_00118	Prince George's	NPS	38.97658 -76.905648	North of Good Luck Rd. Greenbelt Park.	5,067	Trib to Brier Ditch. Severe erosion and headcutting throughout upstream portion of reach. 6-10 foot tall banks throughout upstream 2/3 of site and 3-6 foot tall banks throughout downstream 1/3 of site. Site surrounded by mature forest in National Park. Potential for bed and bank stabilization and instream habitat improvements. Access would require forest impacts. Site flows into SSS-160062C.	Removed due to high quality forest impacts	58
PG_00120A	Prince George's	BARC	39.019955 -76.892741	East of Edmonston Rd.	5,371	Entire site mapped as wetlands of special state concern. Moderate erosion along 4 foot tall banks throughout most of site. Site surrounded by forest. Potential for sediment reduction, increasing geomorphic stability, instream habitat improvements, and wetland enhancement. Multiple access points from upstream and downstream ends of site that would require minimal tree removal.	Removed due to wetlands of special state concern	49

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
PG_00120B	Prince George's	BARC	39.023356 -76.879996	West of Research Rd.	1,420	Site added during walkthrough survey. Entire site mapped as wetlands of special state concern. Unstable 4-5 foot tall banks throughout most of site. Site surrounded by PEM wetlands. Potential for sediment reduction, increasing geomorphic stability, instream habitat improvements, floodplain development and stream buffer improvements. Potential access from adjacent roads and powerline ROW.	Removed due to wetlands of special state concern	67
PG_00121	Prince George's	City of Greenbelt	39.008083 -76.867652	East of Ridge Rd.	1,977	Ephemeral channel with 3 foot tall banks surrounded by forest. Site removed following windshield survey.	Removed due to ephemeral channel	NA
PG_00122	Prince George's	NPS	38.986595 -76.887935	East of 295 & South of 495. Greenbelt Park.	3,548	Trib to Brier Ditch. Downstream quarter of the reach with heavy aggradation to the confluence. Remaining upstream portion of the reach is severely incised with banks averaging 10 feet in height along a narrow stream channel. Several instream utility assets are exposed and threatened by continued downcutting of the stream bed. Potential for lateral/vertical stabilization and bedform diversity improvements. Site surrounded by mature forest and access would likely require significant tree impacts. Potential access at I295/I495 interchange. Site flows into SSS-160062A.	Removed due to high quality forest impacts	53
PG_00124	Prince George's	M-NCPPC	39.028914 -76.950838	West of I-95 & South of Powder Mill Rd. Powder Mill Community Park.	1,958	Paint Branch. Majority of site appears stable. Five foot tall banks with minor erosion throughout site. Site surrounded by mature forest. Little to no potential for functional uplift. Potential access along old sewerline that has young tree plantings	Removed due to limited uplift potential	30
PG_00131	Prince George's	WMATA & Pennsylvania Lines LLC	38.930502 -76.894001	North of Landover Rd.	1,025	Access not granted for walkthrough survey. Windshield survey - Over widened channel with moderate bank erosion.	Removed due to no access	NA
PG_00132	Prince George's	BARC	39.016993 -76.898683	West of Edmonston Rd.	954	Upper 2/3 of site has 1-2 foot tall eroded banks with good floodplain access and lower 1/3 of site has 2-4 foot tall eroded banks with no floodplain access. Site surrounded by mature forest. Limited potential for erosion reduction, floodplain development, and instream habitat improvements. Potential access from Edmonston Rd, however tree clearing would be required to access stream.	Removed due to limited uplift potential	40
PG_00134	Prince George's	WMATA & Pennsylvania Lines LLC	38.934539 -76.887186	West of Pennsy Dr.	4,741	Access not granted for walkthrough survey. Windshield survey - Over widened channel with minor bank erosion.	Removed due to no access	NA
PG_00136	Prince George's	National Railroad Passenger Corp.	38.916389 -76.935788	South of MD-50 & west of 295	2,173	Access not granted for walkthrough survey. Windshield survey - Concrete lined channel under MD 201 that drains to large straightened channel that runs along toe of railroad embankment.	Removed due to no access	NA
PG_00138	Prince George's	Board of Education, WMATA & PG. County	38.88651986 -76.88835557	East of Branch Rd. Central High School.	1,940	Moderate bank erosion with 5-10 foot tall banks throughout most of site. Incised channel surrounded by mid-successional forest. Potential for sediment reduction, instream habitat and aesthetic improvements, and floodplain development south of channel. Potential access along overgrown sewer easement south of channel.	Removed due to design constraints. Narrow valley and adjacent metro embankment.	49

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
SSS-150020	Montgomery	M-NCPPC	39.068978 -77.028791	Northeast of Hugo Circle. Northwest Branch SVU 5.	2,583	Bel Pre Creek. 30% of site consists of 4-5 foot tall eroding banks. Site surrounded by mature floodplain forest. Potential for geomorphic stabilization and instream habitat improvements. Potential access off Trivoli Lake Blvd, however forest impacts will be required to access stream.	Removed. Site listed on the USACE's priority list for the Anacostia Watershed Restoration Program (Site AN-2).	31
SSS-150021	Montgomery	M-NCPPC	39.127546 -77.139088	Northeast of Keats Terrace. Rock Creek Regional Park.	1,781	70% of site consists of 4-9 foot tall eroding banks. Several areas of severe erosion. Site surrounded by forest with extensive invasives. Potential for channel stabilization, floodplain development, and invasive treatment. Potential access from Wick Lane, however access to stream would require forest impacts.	Removed at M-NCPPC's request due to access difficulty and terrestrial impact concerns	62
SSS-150023	Montgomery	M-NCPPC	39.061106 -77.028795	South of Glenallan Ave. Wheaton Regional Park.	3,069	High priority M-NCPPC site. Moderate bank erosion along 4 foot tall banks throughout most of site. Some localized severe bank erosion areas. Site surrounded by forest. Potential for sediment reduction, geomorphic stability, and instream habitat improvements. Potential access from adjacent road would require minimal tree clearing.	Selected for Potential Mitigation Site List (Site AN-4)	52
SSS-150040	Montgomery	M-NCPPC	39.183457 -77.120731	South of Stanbrook Ln. Rock Creek SVU 16 & Upper RC LP.	1,477	1.5 foot tall banks with minor erosion throughout most of site. Majority of site surrounded by PEM/PSS wetlands and tree plantings. Potential uplift limited to riparian enhancements. Existing access from park entrance and path that parallels the stream.	Removed due to limited uplift potential	45
SSS-150041	Montgomery	M-NCPPC	39.17486 -77.100179	West of Olney Laytonsville Rd. North Branch SVU 4.	925	Majority of site consists of undefined channel surrounded by wetland meadow. Bank height is less than one foot throughout site. No bank erosion observed. Potential uplift limited to riparian enhancements. Access would be required through PEM wetlands.	Removed due to limited uplift potential	49
SSS-160039	Prince George's	WSSC & M-NCPPC	38.950194 -76.951858	East of 38th Ave. Anacostia River SVP.	1,123	Five foot tall banks with old erosion that appears to be stabilizing. Site surrounded by mature forest west of stream and open recreational park east of stream. Potential uplift includes lateral stabilization, floodplain development, and instream habitat improvements. Existing open access from adjacent rec. park.	Remove. Site has been controversial in past due to upstream flooding. Numerous landowners. Located in Critical Area. Majority of site on WSSC property (1,093 LF).	52
SSS-160040	Prince George's	M-NCPPC	39.969585 -76.910429	East of 61st Pl. Madison Hill Park.	2,663	Large channel mostly consisting of pool habitat. 4 foot tall banks stabilized by vegetation throughout most of site. Limited potential for functional uplift. Recent WSSC channel stabilization in several sections. Site surrounded by forest. Potential access through old sewer repair route that spans entire site. Site removed following windshield survey.	Removed due to channel stability and limited uplift potential	NA

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
SSS-160041	Prince George's	NPS	38.983607 -76.884114	Northwest of Nashville Rd. Greenbelt Park	2,408	Trib to Brier Ditch. Reach consists of extensive bank erosion, ranging from 4 to 9 feet in height. Site surrounded by mature forest. Potential for vertical/lateral stabilization, bedform diversity improvements, and floodplain access improvements on right bank where there is ample space and less dense forest/wetland. Site surrounded by mature forest and would likely require significant tree impacts. Access from neighborhood at the upstream extent of the reach. Site flows into SSS-160062A.	Removed due to high quality forest impacts	63
SSS-160042	Prince George's	NPS	38.994218 -76.899435	South of MD-193 & east of MD-201	1,091	Deeply incised channel. 5-15 foot tall eroded banks with erosion throughout entire site. Site surrounded by steep forested valley on national park land. Opportunity for headcut/grade control exists within reach, but culvert invert elevations prevent opportunities for significant enhancements. Potential access through roads at upstream and downstream ends, but dense forest throughout reach limit access and floodplain development.	Removed due to limited uplift potential and forest impacts	55
SSS-160053	Prince George's	M-NCPPC	38.987488 -76.964188	East of W Park Dr. & north of MD-193. Northwest Branch SVP.	2,378	Northwest Branch. 5-8 foot tall banks throughout site. 10% of site has bank erosion, with isolated severe erosion on outside meanders. Most of site appears stable. Existing bank armoring observed in several areas. Good existing instream habitat. Site surrounded by mature forest. Potential uplift limited to localized bank stabilization. Potential access from adjacent trails and clearings in the forest.	Removed due to limited uplift potential	35
SSS-160058	Prince George's	M-NCPPC	38.901499 -76.891591	South of Central Hills Ln. Highland Park.	1,361	Deeply incised headwater stream. Localized moderate to severe erosion along 5-10 foot tall banks. Some sections stabilized by tree roots. Potential for sediment reduction and instream habitat improvements. Limited floodplain development potential due to narrow valley and adjacent residential homes. Surrounded by mid successional forest. Old overgrown sewer clearing along north side of channel could be used for access. Extensive trash throughout site.	Removed due to less potential for ecological uplift	44
SSS-160059	Prince George's	M-NCPPC	38.929105 -76.902346	Southeast of Maureen Ct. Cheverly East Park.	1,347	4-5 foot tall banks throughout site with localized moderate erosion. Previous restoration within site, however some areas still appear unstable. Site surrounded by young and mature forests. Potential for lateral and vertical channel stabilization, and instream habitat improvements. Access would require forest impacts.	Removed due to limited uplift potential	39
SSS-160060	Prince George's	City of Seat Pleasant	38.89717533 -76.8994935	South of Martin Luther King Jr. Hwy.	4,478	Entire site consists of 6 foot tall concrete lined channel surrounded by residential homes, forest and recreational park. Banks stable throughout site. Potential ecological uplift limited to instream habitat improvements. Access would require tree clearing behind residential homes.	Removed due to limited uplift potential	27
SSS-160062A	Prince George's	NPS	38.981418 -76.890001	West of Nashville Rd. Greenbelt Park.	3,341	Site added during walkthrough survey. Trib to Brier Ditch. Significant aggradation occurring upstream of the 295 road crossings with moderate erosion on outside meanders (4 foot tall banks) throughout reach. Potential for lateral/vertical stabilization, bedform diversity improvements, floodplain development, and instream/riparian habitat improvements. Site surrounded by mature forest and would likely require significant tree impacts. Site flows into SSS-160062C.	Removed due to high quality forest impacts	48

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
SSS-160062B	Prince George's	NPS	38.982152 -76.906653	South of Greenbelt Rd. and west of I-295. Greenbelt Park	6,669	Site split during walkthrough survey. Trib to Brier Ditch. Incised channel with 6 foot tall banks on average and many overland flow headcuts. Site surrounded by mature forest. Floodplain access exists in some areas but could be expanded in others. Vertical stability at culverts can be addressed. Potential for instream habitat improvements. Adjacent NPS roads and trails could be used for access, however tree clearing would likely still be required. Sewer asset parallels stream for much of the reach. Site flows into SSS-160062C.	Removed due to high quality forest impacts	58
SSS-160062C	Prince George's	NPS	38.990333 -76.895634	East of Kenilworth Ave. Greenbelt Park.	8,894	Site split during walkthrough survey. Trib to Brier Ditch. Mainstem through NPS Greenbelt Park. Stream is incised with 6 foot tall banks on average and many active overland flow headcuts. Downstream section experiencing significant aggradation instream and large depositional features. Upstream two-thirds of the reach is vertically unstable with severe fish blockage at the NPS park road due to continued downcutting. Utility assets parallel and cross the stream. Site surrounded by mature forest. Existing access to the downstream section via MD 201 and old sewer access road, however tree clearing would likely be required for most of the site. Upstream access from NPS road.	Removed due to high quality forest impacts	44
SSS-160062D	Prince George's	NPS	38.986268 -76.903171	South of Westchester Park Dr. Greenbelt Park.	2,423	Site split during walkthrough survey. Trib to Brier Ditch. Extreme headcut at the upstream extent of this reach originating from a stormwater structure on Friends Community School property. Downcutting in this reach has caused a substantial amount of sedimentation and aggradation downstream. Bank heights in the upstream section of this reach were upwards of 20 feet. Site surrounded by mature forest. Potential for vertical/lateral stabilization, bedform diversity improvements, and floodplain development at downstream end of site. Potential access from roadway to the west of the site, however tree clearing would likely be required for most of the site. Site flows into SSS-160062C.	Removed due to high quality forest impacts	67
SSS-160063	Prince George's	M-NCPPC, PG County, WSSC, City of College Park	38.986491 -76.930313	South of Lakeland Rd. Paint Branch SVP II & III.	3,069	Paint Branch. Upstream and downstream segments located on forest conservation easements. 20% of site consists of 4-8 foot tall eroding banks. Site surrounded by mature forest with numerous property owners. Potential for channel stabilization, floodplain development, instream habitat improvements, and connection to upstream and downstream restoration projects. Potential access along trails, however forest clearing would be required to access stream.	Removed due to forest conservation easement restrictions & multiple property owners	40
SSS-160065	Prince George's	M-NCPPC	38.95361314 76.92642596	West of Kenilworth Ave. Anacostia River SVP.	1,904	Four foot tall banks with minor to moderate erosion throughout most of site. Signs of historic channel straightening. Site surrounded by mowed grass with scattered large trees. Sewer crossing at downstream section causing fish blockage. Potential for vertical and lateral channel stabilization, fish blockage removal, and riparian habitat improvements. Existing access throughout most of adjacent park.	Removed due to floodplain constraints & less potential for ecological uplift	66

Site selected for Potential Mitigation Site List

Table F-3. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
SSS-160066	Prince George's	M-NCPPC	38.95505408 -76.92621304	Southwest of Spring Lane. Anacostia River SVP.	1,552	Approximately 20% of the site has active bank erosion with 3-6 foot tall banks. Signs of historic channel straightening. Site surrounded by mowed grass with scattered large trees. Potential for vertical and lateral channel stabilization and riparian habitat improvements. Existing access throughout most of adjacent park.	Removed due to less potential for ecological uplift	75
SSS-160068	Prince George's	M-NCPPC	38.997809 -76.967345	East of 22nd Pl. Adelphi Road Park.	663	6-7 foot tall banks with severe erosion along outside meanders throughout site. Stream in poor condition. Site surrounded by mature forest with dense understory. Potential for floodplain development, lateral stabilization, and instream habitat improvements. Access would require forest clearing.	Removed due to small site size and forest impacts	63
SSS-160070	Prince George's	Prince George's County	38.969981 -76.878142	Carrolton Pky ROW.	4,332	Site consists of a confined channel located in the County ROW between two roads. Approximately 65% of the site has active bank erosion with 2-6 foot tall banks. The floodplain consists of mowed grass with scattered trees along the stream banks. Potential for geomorphic stability, stormwater treatment and riparian improvements. There is existing access for the majority of the site that would require minimal tree impacts, but may require extensive MOT.	Removed due to limited uplift potential	57
SSS-160074	Prince George's	M-NCPPC	38.991783 -76.971016	Southeast of Riggs Rd. Northwest Branch SVP.	1,468	Northwest Branch. Stream banks relatively stable throughout site with localized erosion. Good instream habitat. Sections of bedrock within reach. Site is surrounded by mid-successional forest. Potential access along trail to north of site. Site removed following windshield survey.	Removed due to channel stability and limited uplift potential	NA
SSS-160075	Prince George's	M-NCPPC	38.972272 -76.964481	East of W Park Dr. & north of MD-410. Northwest Branch SVP.	4,806	Northwest Branch. Majority of site appears stable, however there are some localized areas of severe bank erosion. Site mostly surrounded by mature forest. Some potential for channel stabilization, instream habitat improvements and floodplain development. Potential access from park without extensive forest impacts.	Removed due to channel stability and limited uplift potential	38
SSS-160081	Prince George's	Board of Education	39.002885 -76.975103	South of Metzert Rd. & west of MD-212	973	3-10 foot tall banks throughout site. 15% of banks are eroded within site, mostly in upstream reach. Perched culvert at upstream end of site. Site surrounded by steep valley with mature forest. Potential for geomorphic stabilization and instream habitat improvements. Access would require forest clearing.	Removed due to limited uplift potential and forest impacts	44

Site selected for Potential Mitigation Site List

Table F-4. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Catoctin

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
MO_00013A	Montgomery	M-NCPPC	39.23201509 -77.18753066	South of Watkins Rd. Great Seneca SVU 4.	2,934	3-4 foot tall banks with moderate to severe erosion throughout site. Several torturous meanders. Extensive floodplain dominated by reed canary grass with scattered trees. Potential for sediment reduction, instream habitat improvements, floodplain development, wetland creation/enhancement, and riparian plantings.	Selected for Potential Mitigation Site List (Site CA-2). Combine with wetland site WSS-150147A.	61
MO_00013B	Montgomery	M-NCPPC	39.23579123 -77.18752835	North of Watkins Rd. Magruder Branch SVU 1.	1,053	Site added during windshield survey. 2-4 foot tall banks with moderate erosion throughout most of site. Extensive floodplain dominated by reed canary grass with scattered trees. Potential for sediment reduction, instream habitat improvements, floodplain development, wetland creation/enhancement, and riparian plantings.	Selected for Potential Mitigation Site List (Site CA-3). Combine with wetland site WSS-150147B.	66
MO_00018	Montgomery	M-NCPPC	39.01127779 -77.21091459	South of Falls Rd. Heritage Farm NP.	3,723	1-5 foot tall banks with minor to moderate erosion throughout site. Site surrounded by mid-successional forest with several scattered wetlands. Old sewer line clearing runs parallel to stream in eastern floodplain that could be used as potential access. Opportunities for ecological lift include sediment reduction, floodplain development, aquatic habitat improvements and fish passage.	Selected for Potential Mitigation Site List (Site CA-6)	43
MO_00027	Montgomery	M-NCPPC	39.16799 -77.362346	West of Bucklodge Rd. Rickman Farm Horse Park.	1,803	Small channel that appeared stable. Dense vegetation along banks. Site removed following windshield survey.	Removed due to stable conditions	NA
MO_00035	Montgomery	DNR	39.14981629 -77.25098908	South of Clopper Rd. Seneca Creek State Park.	3,238	Ephemeral channel with minimal erosion in mature forest. Site removed following windshield survey.	Removed due to ephemeral channel	NA
MO_00037	Montgomery	M-NCPPC	38.985373 -77.151998	West of Helmsdale Rd. Booze Creek SVP.	4,032	Previous restoration throughout site that is failing. 3-9 foot tall eroding banks. Most of site surrounded by forest. Potential for bank stabilization, instream habitat improvements, and riparian enhancements. Existing access roads from past restoration off of Cabin John Pkwy & Helmsdale Rd.	Removed at M-NCPPC's request. Failed stream restoration that DEP is currently restoring.	44
MO_00047A	Montgomery	M-NCPPC	39.1585305 -77.2603644	North of Clopper Rd. Gunner's Branch LP	3,131	3-5 foot tall banks with moderate erosion throughout site. Majority of site is surrounded by mid successional forest and PEM/PSS wetlands. Potential for sediment reduction, instream habitat improvements, fish passage, wetland creation/enhancement, and riparian plantings. Potential access along old sewer clearing in western floodplain.	Removed due to less potential for ecological uplift	43
MO_00047B	Montgomery	DNR	39.15113494 -77.26403347	South of Clopper Rd. Strider Wildlife Management Area.	5,232	Site added during windshield survey. 3-5 foot tall banks with localized moderate erosion. Some sections of the site appear stable. Majority of site is surrounded by mid successional forest, with extensive PEM/PSS wetlands at upstream end of site. Potential access along old sewer clearing in western floodplain. Opportunities for ecological lift include sediment reduction, aquatic habitat improvements and floodplain development. DNR WHS stated that the majority of the site appears stable and the surrounding area is providing good wildlife habitat that should not be disturbed.	Removed at DNR's request due to existing good wildlife habitat	34

Site selected for Potential Mitigation Site List

Table F-4. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Catoctin

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
MO_00048	Montgomery	DNR	39.15680585 -77.23925466	Adjacent to Game Preserve Rd. Seneca Creek State Park.	1,489	Small channel with 3-8 foot tall banks and localized moderate to severe erosion. Majority of site has minor bank erosion and appears stable. Existing instream habitat is in good condition. Limited potential for overall ecological uplift. Most of site surrounded by high quality mid successional forest with bedrock outcrops. Access would require forest clearing and would be challenging due to narrow/steep valley confined by roadway.	Removed due to limited potential for ecological uplift and access constraints	31
MO_00050	Montgomery	M-NCPPC	39.04313403 -77.25399448	North of River Road. Watts Branch SVU 1.	923	Watts Branch. Large channel with 6-8 foot tall banks that are mostly stabilized by vegetation and bedrock. Good existing instream habitat. Floodplain development limited due to adjacent valley wall. Limited potential for ecological uplift. Majority of site surrounded by mid-successional forest. Potential access along old sewer clearing in northern floodplain. Large watershed size would make construction challenging.	Removed due to limited potential for ecological uplift and large watershed size	27
MO_00051	Montgomery	M-NCPPC & Mo. County	38.974004 -77.102571	West of Little Falls Pkwy. Little Falls SVU 2.	2,160	High priority M-NCPPC site. Approximately 30% of the site has active bank erosion with 3-5 foot tall banks. Deeply incised channel with evidence of previous stream restoration at downstream end of site. Eastern floodplain is mostly developed and consists of mowed lawn and roadway. Western floodplain is forested. Potential for sediment reduction and some floodplain development. Potential access along routes used for previous restoration. Combine with MPOC0006, MPOC0010 & MPOC0011.	Removed due to limited potential for ecological uplift	43
MO_00052	Montgomery	M-NCPPC	38.96127074 -77.09727952	North of River Road. Willard Avenue NP.	1,068	Majority of site appears stable with localized minor bank erosion. Good instream habitat. Access would require forest impacts. Site removed following windshield survey.	Removed due to channel stability and limited uplift potential	NA
MO_00060	Montgomery	City of Gaithersburg	39.149794 -77.184313	West of Belle Grove Rd. Kelley Park	1,934	Small stream with 40-50% of site having active bank erosion along 2-6 foot tall banks. Western floodplain consists of sparse tree plantings and man-made wetland/pond. Eastern floodplain consists of narrow riparian forest with a PSS wetland. Potential for hydraulic, hydrology, and geomorphic improvements. Potential access from paved path that parallels entire site. Some tree clearing would be required to access the stream.	Removed due to less potential for ecological uplift	52
MO_00063	Montgomery	DNR	39.13487705 -77.26027051	South of Great Seneca Highway. Seneca Creek State Park.	2,240	Small, deeply incised channel with 3-10 foot tall banks and moderate to severe erosion throughout site. Site surrounded by narrow/steep valley with mid successional forest. Several specimen trees along channel. Opportunities for ecological uplift include erosion reduction, instream habitat improvements and fish passage. Potential access along sewer line clearing and disc golf course in northern floodplain.	Removed at DNR's request due to potential tree impacts	58
MO_00064	Montgomery	M-NCPPC & DNR	39.13030063 -77.25646132	East of Riffle Ford Rd. Seneca Creek State Park & Quince Orchard Valley Park.	6,945	3-6 foot tall banks with moderate to severe erosion throughout site. Several sewer line crossings and torturous meanders within site. Site surrounded by mid-successional forest. Upstream segment has narrow/steep valley, while downstream segment consists of a flatter, wider floodplain. Opportunities for ecological uplift include erosion reduction, instream habitat improvements, and downstream floodplain development. Potential access along sewer line clearing and disc golf course.	Selected for Potential Mitigation Site List (Site CA-5). Downstream section removed at DNR's request due to potential tree & disc golf impacts.	53

Site selected for Potential Mitigation Site List

Table F-4. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Catoctin

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
MPOC0003	Montgomery	DNR	39.163101 -77.229916	North of Game Preserve Rd. Seneca Creek State Park.	207	DNR recommendation. Small, deeply incised intermittent channel with 9-10 foot tall banks and severe bank/bed erosion. Severe bank erosion caused by upstream SW pond. Site surrounded by sparse trees in Seneca Creek floodplain. Old road used to move foot bridge could be used for potential access. Potential ecological lift limited to erosion reduction. Small intermittent channel with short length has limited potential for instream habitat and floodplain improvements.	Removed due to limited potential for ecological uplift and small site size	45
MPOC0004	Montgomery	DNR	39.163436 -77.230249	North of Dwight D Eisenhower Hwy. Seneca Creek State Park	2,503	Seneca Creek. Large channel with 3-4 foot tall severely eroded banks throughout most of site. Site surrounded by mid-successional forest with no existing access. Good instream habitat and evidence of flooding in floodplain. Extensive work required for limited ecological lift. Large watershed size would make construction challenging.	Removed due to large watershed size, limited potential for ecological uplift, and forest impacts	23
MPOC0005	Montgomery	DNR	39.133133 -77.267205	East of Riffle Ford Rd. Seneca Creek State Park.	448	DNR recommendation. Seneca Creek. Localized severe bank/bed erosion is threat to pedestrian trail. 5-6 foot tall banks. Site surrounded by mid-successional forest. Direct access from adjacent parking lot. Low potential for ecological uplift and restoration credits. Large watershed size would make construction challenging.	Removed due to large watershed size and limited potential for ecological uplift	27
MPOC0006	Montgomery	M-NCPPC & Mo. County	38.975032 -77.099841	West of Hillandale Rd. Little Falls SVU 2.	673	M-NCPPC Recommendation. 6 -8 foot tall eroded banks within 40% of site. Channel surrounded by forests. Potential for fish blockage removal, bank stabilization, aquatic habitat, lateral and vertical channel stabilization. Potential access through road/trail on upstream end and through an old restoration route on the downstream end. Combine with MO_00051, MPOC0010 & MPOC0011.	Removed due to limited potential for ecological uplift	43
MPOC0008	Montgomery	M-NCPPC	39.069438 -77.258469	North of Glen Rd. Greenbriar LP.	2,419	M-NCPPC recommendation. 3-6 foot tall banks with moderate erosion throughout site. Bedrock observed within channel throughout most of site that may limit potential for instream habitat improvements. Site surrounded by forested floodplain with extensive invasives. Potential for sediment reduction and riparian habitat improvements. Access would require forest clearing. Note: Site MPOC0007 overlapped with this site and was therefore removed from the table.	Removed due to less potential for ecological uplift	44
MPOC0009	Montgomery	M-NCPPC & Mo. County	39.171692 -77.186706	East of Goshen Rd. Cabin Branch SVP.	3,457	M-NCPPC recommendation. 3-6 foot tall banks with severe erosion throughout most of site. Majority of site surrounded by forest. Upland meadow along downstream reach. Potential for sediment reduction, floodplain development, aquatic habitat improvements, wetland creation, and riparian buffer plantings. Potential access throughout downstream section through upland meadow. Upstream section would require forest impacts.	Selected for Potential Mitigation Site List (Site CA-4)	53
MPOC0010	Montgomery	M-NCPPC	38.97123 -77.098712	East of Little Falls Pkwy. Little Falls SVU 2.	1,203	M-NCPPC Recommendation. Concrete channel with 2:1 slopes, approximately 4 foot tall. Channel surrounded by extensive invasives/vines with some forested areas. Potential for aquatic habitat, floodplain development, and bedform diversity improvements. Potential access through adjacent, utility clearings and road crossings. Combine with MO_00051, MPOC0006 & MPOC0011.	Removed due to limited potential for ecological uplift	57

Site selected for Potential Mitigation Site List

Table F-4. Windshield and Walkthrough Stream Mitigation Sites - Middle Potomac-Catoctin

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
MPOC0011	Montgomery	M-NCPPC	38.97293 -77.09917	East of Hillandale Rd. Little Falls SVU 2.	709	M-NCPPC Recommendation. 4-6 foot tall eroded banks within 40% of the site. Channel surrounded by forested parkland with some clearings near the road. Potential for aquatic habitat, bank stabilization, and floodplain connectivity improvements. Potential access through adjacent M-NCPPC trail. Some tree clearing would be required. Combine with MO_00051, MPOC0006 & MPOC0010.	Removed due to limited potential for ecological uplift	48
MPOC0012	Montgomery	M-NCPPC	39.024472 -77.158008	North of Democracy Blvd. & east of Seven Locks Rd. Locust Grove Nature Center.	939	M-NCPPC recommendation. Ephemeral channel surrounded by forested parkland and steep valley slopes. 0.5-3 foot tall banks with minor to moderate erosion throughout site. No opportunities exist for ecological uplift due to ephemeral nature of channel.	Removed due to ephemeral channel	50
SSS-150004	Montgomery	DNR	39.08458657 -77.43377242	West of Sycamore Landing Rd. Within McKee Beshers Wildlife Management Area.	8,674	Low gradient channel. Banks appear low/stable. Stream is connected to floodplain. Extensive wetlands throughout site. Access would require high quality forest/wetland impacts for very limited uplift potential. Site removed following windshield survey.	Removed due to channel stability, limited uplift potential, and high quality forest/wetlands.	NA
SSS-150006	Montgomery	SHA	39.23314874 -77.18283808	West of Woodfield Rd.	3,529	Site is an existing ICC stream/wetland mitigation site (SC-19). SHA EPD stated in meeting on 1/28/19 that site should not be pursued for stream mitigation.	Removed at SHA EPD's request due to existing mitigation site	22
SSS-150017	Montgomery	M-NCPPC	38.99502015 -77.17030611	South of River Rd. Cabin John Creek SVU 3.	1,084	4-8 foot tall banks with moderate erosion throughout site. A few localized severe bank erosion and stable areas. Site is surrounded by mid successional forest and has good instream habitat. Floodplain development limited by narrow/steep valley and roadway. Ecological lift limited to erosion reduction. Potential access through clearings at center and upstream end of site.	Removed due to limited potential for ecological uplift	44

Site selected for Potential Mitigation Site List

Table F-5. Windshield and Walkthrough Stream Mitigation Sites - Patuxent

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
PG_00008	Prince George's	WMATA	38.90121886 -76.84465743	East of Harry S Truman Dr.	1,682	Small, straightened channel in narrow strip of trees between developments. 1-3 foot tall banks with localized minor to moderate bank erosion. Sections of the stream appear stable. Ecological lift potential limited to erosion reduction. No potential for floodplain development. Access would require tree removals.	Removed due to limited potential for ecological uplift	31
PG_00017	Prince George's	M-NCPPC	38.778987 -76.774976	Southwest of Croom Rd. Marlton Park.	2,935	Deeply incised channel with 8-10 foot tall banks. Most of site consists of old severe bank erosion that has stabilized with vegetation, however there are localized areas of active severe erosion. Site surrounded by good quality mid successional floodplain forest with dense understory. Good existing instream habitat. Ecological uplift limited to stabilizing localized severe erosion areas. Access would require forest clearing. A large section of the site is on private property.	Removed due to limited potential for ecological uplift and high quality forest	40
PG_00049A	Prince George's	PG County & Private	38.80716792 -76.74881669	South of Pennsylvania Ave.	4,231	Western Branch. 6-12 foot tall banks with moderate to severe erosion throughout majority of site. Vertical, sandy banks. Northern floodplain consists of maintained grass areas and scattered trees. Southern floodplain consists of mid-successional forest with extensive PFO wetlands. Sections of southern floodplain located on private property. Functional uplift limited to erosion reduction. Extensive work required with likely minimum uplift potential. Existing access from northern floodplain. Large watershed size (91 sq mi) would make construction challenging. Downstream of PG_00049A.	Removed due to large watershed size and limited potential for ecological uplift	48
PG_00049B	Prince George's	PG County, Town of Upper Marlboro, Marlboro Fire Dept & Private	38.81456046 -76.74699715	North of Pennsylvania Ave.	4,260	Site added during windshield survey. Western Branch. 8-11 foot tall banks with moderate to severe erosion throughout most of site. Some banks are vertical yet appear stable. Majority of site surrounded by mid-successional forest with several large floodplain wetlands. Functional uplift limited to erosion reduction. Extensive work required with likely minimum uplift potential. Access would require forest & wetland impacts. Large watershed size (90 sq mi) would make construction challenging. Upstream of PG_00049A.	Removed due to large watershed size, limited potential for ecological uplift, and forest impacts.	32
PG_00149	Prince George's	PG County	38.89810854 -76.79590878	North of Hunterton St.	1,995	Most of site within wetlands of special state concern. 6 foot tall sandy banks with moderate to severe erosion throughout most of site. Site surrounded by mid-successional forest and extensive PFO wetlands. Ecological lift limited to reducing erosion. Limited potential for fish habitat and floodplain development. Access would require forest and wetland impacts.	Removed due to wetlands of special state concern and limited potential for ecological uplift	30
PG_00156	Prince George's	PG County & WMATA	38.900633 -76.849189	West of Harry S Truman Dr.	2,015	Access not granted for walkthrough survey. Site not visible from roadway during windshield survey.	Removed due to no access	NA
PG_00160	Prince George's	Board of Education, PG County DoE & Private	38.83722883 -7678668749	North of Brooke Ln. Dr. Henry A. Wise Jr. High School.	6,742	3-5 foot tall banks with moderate to severe bank erosion throughout most of site. Site surrounded by mid-successional forest. Potential for reducing erosion, instream habitat improvements and floodplain development. Access would require impacts to surrounding forest.	Selected for Potential Mitigation Site List (Site PA-1).	44

Site selected for Potential Mitigation Site List

Table F-5. Windshield and Walkthrough Stream Mitigation Sites - Patuxent

Database ID	County	Owner	Lat/Long	Location	Potential Mitigation Credit (LF)	Comments	Status	Field Score
SSS-160023	Prince George's	M-NCPPC	38.94477221 -76.84008555	West of Cleary Ln. Ball Hill SVP.	1,513	3-7 foot tall banks with 50% erosion throughout site. Majority of floodplain consists of scrub-shrub and invasive herbaceous species. Opportunities for ecological uplift include vertical and lateral channel stabilization, floodplain development, fish passage, and instream habitat improvements. Existing access from recent utility work.	Removed due to less potential for ecological uplift	62
SSS-160026	Prince George's	Board of Education	38.88735545 -76.82128910	South of Largo Rd.	1,030	Piped channel between high school and community college. No opportunity for daylighting. Site removed following windshield Survey.	Removed due to no restoration potential	NA
SSS-160034	Prince George's	PG County	38.85702841 -76.88380062	South of Marbury Dr.	2,868	Three foot tall concrete lined channel within PG county ROW. Site surrounded by grass lawn with scattered trees. Potential uplift limited to instream habitat and riparian improvements. No potential for erosion reduction or floodplain development. Floodplain confined by roads and residential housing on both sides of channel. Existing access along entire site.	Removed due to limited potential for ecological uplift.	50

Site selected for Potential Mitigation Site List



WALKTHROUGH FISH PASSAGE SITE LISTS

Table F-6. Walkthrough Fish Passage Mitigation Sites - Middle Potomac-Anacostia-Occoquan

Database ID	County	Lat/Long	Location	Culvert Type	Height of Blockage (ft)	Status	Field Score
MD_AN015	Prince George's	38.998348 -76.917222	Indian Creek. Between Greenbelt Rd Branchville Rd.	Quadruple box culvert - 15' wide X 4' tall each	0.0	Removed due to no blockage	37
MPAO0033	Prince George's	39.021027 -76.945642	Paint Branch under I-495/I-95 Interchange	Two Quadruple box culverts - 10' wide X 14' tall each	1.0	Selected for Potential Mitigation Site List (Site AN-6). Paint Branch Site provided by SHA EPD. Site added during walkthrough survey. Proposed removal of 3 blockages. 1,544 LF of in-stream work. 5,258 LF of potential credit. SHA ROW & BARC properties	40
MPAO0034	Prince George's	38.826221 -76.880724	Southwest of Rena Rd. and just north of I-495.	Pipe arch - 9' wide X 6' tall	6.0	USACE & MDE Recommendation. Site added during walkthrough survey. Removed due to limited credit potential	31
MPAO0035	Prince George's	39.011305 -76.903637	Indian Creek. Between I495 and Greenbelt Metro Dr.	Three Quadruple box culverts - 17' wide each	0.0	USACE Recommendation. Site added during walkthrough survey. Removed due to no blockage.	44
Site selected for Potential Mitigation Site List							

Table F-7. Walkthrough Fish Passage Mitigation Sites - Middle Potomac-Catoctin

Database ID	County	Lat/Long	Location	Culvert Type	Height of Blockage (ft)	Status	Field Score
MD_12066	Montgomery	39.155574 -77.208059	Northwest of Montgomery Village Ave	RCP - 4-5' diameter	2.5	Removed due to blockage located on private property	26
NAACC_38347	Frederick	39.418362 -77.576515	East of Quebec School Rd and south of Burkittsville Rd.	Box culvert - 12.5' wide X 8 ' tall	1.9	Removed due to access and construction required on private property and limited upstream network	39
NAACC_38385	Frederick	39.638376 -77.513944	MD 77, just south of Quirauck School rd.	Box culvert - 12' wide X 6.7' tall	0.7	Removed due to small upstream network and limited credit potential	39
NAACC_38455	Frederick	39.591704 -77.558824	MD 17, just north of Martin Rd.	Box culvert - 11.5' wide X 5.5' tall	0.0	Removed due to no blockage	38
NAACC_38672	Frederick	39.578487 -77.556051	MD 17, just north of Black Rock Rd.	Triple pipe arch - 8' diameter each	0.0	Removed due to no blockage	42
Site selected for Potential Mitigation Site List							

Table F-8. Walkthrough Fish Passage Mitigation Sites - Patuxent

Database ID	County	Lat/Long	Location	Culvert Type	Height of Blockage (ft)	Status	Field Score
MD_LPX15	Howard	39.217813 -76.850298	US 29, just west of Wandering Wy.	Double RCP - 6' diameter each	0.8	Removed due to minor debris jam creating temporary blockage	30
MD_PXM23	Anne Arundel	38.961661 -76.74988	East of MD 197 and south of Faith Ln. DS of Woodward Pond.	Box culvert - 9.5' wide X 5' tall; Dam spillway - 9.5' wide	4.8	Removed due to blockage located on private property	48
MD_PXM29	Prince George's	38.811731 -76.784023	MD 4 Median, west of Beech Hill Rd.	CMP - 8' diameter	0.0	Removed due to no blockage	44
MD_PXM30	Prince George's	38.811266 -76.783974	South of William Beanes Rd.	CMP - 3' diameter	0.5	Removed due to blockage located on private property	62
NAACC_27544	Anne Arundel	38.782029 -76.633024	South of W Bay Front Rd. and east of Fishers Station Rd.	Pipe arch - 8' wide X 4.5' tall	0.0	Removed due to no blockage	71
NAACC_27548	Anne Arundel	38.780954 -76.620245	South of W Bay Front Rd. and west of Dawn Dr.	Box culvert - 8' wide X 6' tall	0.0	Removed due to no blockage	48
NAACC_32437	Prince George's	39.032974 -76.787302	North of MD 197 and west of Old Laurel Bowie Rd. Downstream of Cash Lake.	Double RCP - 5' wide X 5' tall each	1.0	Removed due to upstream lake	61
NAACC_33809	Anne Arundel	39.08787 -76.738265	South of MD 32 and east of MD 198	NA - Site Inaccessible	NA	Inaccessible due to NSA fence	NA
NAACC_44542	Anne Arundel	39.028803 -76.687628	MD3, just south of Evergreen Rd.	CMP w/ grouted bottom - 8' diameter	4.3	Removed due to construction required on private property and upstream pond	43
NAACC_44544	Anne Arundel	39.028441 -76.686597	MD 3, just south of John Hopkins	CMP w/ grouted bottom - 5' diameter	0.0	Removed due to no blockage	39
NAACC_50349	Prince George's	39.001275 -76.79367	MD 564, east of Springfield Rd.	Box culvert	0.0	Removed due to no blockage	42
NAACC_57440	Anne Arundel	38.79878 -76.680172	North of MD 4, west of Greenock Rd.	Double RCP w/ flared ends - 4.5' wide X 2.5' tall each	0.0	Removed due to no blockage	44
NAACC_57441	Anne Arundel	38.80448 -76.692119	South of MD4, west of Plummer Ln.	Pipe arch - 12' wide X 5' tall	0.0	Removed due to no blockage	44
NAACC_57443	Anne Arundel	38.804762 -76.691302	South of MD4, north of Southern Maryland Blvd.	Box culvert - 14' wide X 4.5' tall	0.0	Removed due to no blockage	39
NAACC_57445	Prince George's	38.793005 -76.769992	North of 301, east of Old Crain Hwy.	RCP - 6' wide X 5.5' tall	2.0	Removed due to blockage consisting of log jam at US end of culvert that will eventually break through	49
NAACC_57470	Anne Arundel	38.798645 -76.681186	South of MD 4, east of Plummer Ln.	Elliptical pipe w/ grouted bottom - 9' wide X 6.5' tall	2.0	Removed due to 3 foot complex blockage downstream that would require extensive work on private property	31
NAACC_57482	Anne Arundel	38.785015 -76.599821	South of W Bay Front Rd. and west of Solomons Island Rd.	Twin box culvert - 9' wide X 8 ' tall each	0.5	Site recommended for Draft Mitigation Plan. Pending Private landowner coordination.	67
NAACC_57494	Anne Arundel	38.814191 -76.674711	MD 408, north of Sollers Ln.	Bridge - 15' wide X 5' tall	0.0	Removed due to no blockage	72
NAACC_57496	Anne Arundel	38.800916 -76.68399	North of MD4 and Southern Maryland Blvd.	CMP - 2' diameter	0.0	Removed. Clogged ephemeral pipe.	37
NAACC_57498	Prince George's	38.785678 -76.792231	MD 301, northeast of Croom Rd.	CMP - 12' diameter	0.0	Removed due to no blockage	54

Site selected for Potential Mitigation Site List

Table F-8. Walkthrough Fish Passage Mitigation Sites - Patuxent

NAACC_57501	Prince George's	38.783646 -76.790279	Croom Rd, northwest of Trumps Hill Rd.	Bridge - 16' wide X 6' tall	0.0	Removed due to no blockage	45
NAACC_57502	Anne Arundel	38.800275 -76.683598	North of MD 4 and south of Southern Maryland Blvd.	Elliptical pipe with grouted bottom - 9' wide X 4.5' tall	3.0	Removed due to extensive work required on private property	54
NAACC_57504	Anne Arundel	38.791381 -76.660114	South of W Bay Front Rd. and east of MD 4.	Box culvert - 7' wide X 7' tall	0.5	Removed due to partial blockage and small upstream network	58
NAACC_57507	Anne Arundel	38.789509 -76.648672	South of W Bay Front Rd. and west of Cabin Creek Rd.	Box culvert - 14' wide X 7' tall	0.1	Removed due to minor blockage	49
NAACC_57511A	Prince George's	38.813056 -76.794188	North of Pennsylvania Ave and south of Old Marlboro Pike.	CMP - 12' diameter	1.9	Removed due to small upstream network and limited credit potential	53
NAACC_57518	Prince George's	38.801108 -76.825585	East of Woodyard Rd and Northwest of Mellwood Pond Community Park	Arched culvert - 12' wide X 6.5' tall	0.0	Removed due to no blockage	53
NAACC_57526	Prince George's	38.814583 -76.777547	West of Ritchie Marlboro Rd. and south of Old Marlboro Pike	Twin box culvert - 8' wide X 8' tall each	0.0	Removed due to no blockage	61
NAACC_57533	Anne Arundel	38.812102 -76.784063	North of MD 4 and south of Old Marlboro Pike	CMP - 8' diameter	2.3	Debris jam downstream of culvert creating fish blockage. Removed due to extensive work required on private property.	62
NAACC_57561	Prince George's	38.904759 -76.682769	South of MD 214 and west of Queen Anne Bridge Rd.	Twin box culvert - 11.2' wide X 5.35' tall each	0.0	Removed due to no blockage	42
NAACC_57565	Prince George's	38.79775 -76.759915	South of MD 301 and east of Croom Station Rd.	Double RCP - 5' diameter each	0.3	Removed due to partial blockage and small upstream network	44
NAACC_57566	Prince George's	38.782963 -76.796289	East of MD 301 and south of S. Osborne Rd.	Triple CMP with grouted bottom - 14' diameter each	0.0	Removed due to no blockage	54
NAACC_57652	Prince George's	38.664127 -76.714366	East of Croom Rd.	Box culvert - 5' wide X 8' tall	0.5	Removed due to access and construction required on private property	54
NAACC_63410	Prince George's	38.982583 -76.711365	East of MD 301	Box culvert - 18' wide X 3.3' tall	0.0	Removed due to no blockage	34
NAACC_63413	Prince George's	38.982234 -76.712577	MD 301 median, south of Annapolis Rd.	Box culvert - 18' wide X 3.3' tall	0.0	Removed due to no blockage	29
NAACC_63777	Anne Arundel	39.000079 -76.700608	West of MD3 and east of Grays Ford Rd.	Pipe arch w/ grouted bottom - 15' wide	0.0	Removed due to no blockage	46
NAACC_63785	Anne Arundel	39.119754 -76.782597	Northeast of MD 32 and Southeast of Guilford Rd.	Triple box culvert - 7' wide each	1.2	Removed due to partial riprap blockage upstream of culvert	52
NAACC_64432	Prince George's	39.025808 -76.77116	West of MD 197	Double RCP - 8' diameter	1.3	Removed due to small upstream network and limited credit potential	67
NAACC_64434	Prince George's	39.003508 -76.761299	MD 197, east of Old Laurel Bowie Rd.	Twin box culvert - 12' wide	0.0	Removed due to no blockage	57
NAACC_64498	Anne Arundel	38.999801 -76.700676	West of MD 301	Pipe arch - 11.5' wide X 8' tall	0.7	Removed due to minor blockage and 1 foot blockage upstream of site outside ROW	48
NAACC_64596	Montgomery	39.151371 -77.00691	MD 108, east of New Hampshire Ave.	Double RCP - 4' diameter	0.0	Removed due to no blockage	39
NAACC_64628	Prince George's	39.012859 -76.762718	West of MD 197 and east of Normal School Rd.	Pipe arch - 9.5' wide X 6.8' tall	0.0	Removed due to no blockage	44

Site selected for Potential Mitigation Site List



APPENDIX G: PUBLIC LANDOWNER MEETING MINUTES



Managed Lanes Study

MEMORANDUM

DATE: March 14, 2019

TO: George Meyers (USDA RFS) Eric Almquist (MDOT SHA NEPA Team/RK&K)
Jen Showalter (USDA RFS) Karl Hellmann (MDOT SHA NEPA Team/RK&K)
Linda Mooney (USDA RFS) Justin Reel (MDOT SHA NEPA Team/RK&K)
Chris Bentley (BARC) Daniel Spradlin (MDOT SHA NEPA Team/CRI)
Jeanette Mar (FHWA) Matthew Drennan (MDOT SHA NEPA Team/CRI)
Dana Jackson (USDA) Maddy Sigrist (MDOT SHA NEPA Team/RK&K)

*This memorandum is addressed to the meeting attendees.

CC: Caryn Brookman (I-495 & I-270 MLS GEC) Rick Maddox (MDOT SHA NEPA Team/RK&K)
Karen Kahl (MDOT SHA NEPA Team/RK&K) Greg O'Hare (MDOT SHA NEPA Team/RK&K)
Erron Ramsey (MDOT SHA NEPA Team/RK&K)

FROM: MDOT SHA I-495 & I-270 MLS P3 Team

SUBJECT: Contract/FMIS #: BCS 2014-09B/AW073A11
Description: I-495 & I-270 Managed Lanes Study

RE: Minutes from February 27, 2019 – BARC Mitigation Coordination Meeting at the Beltsville Agricultural Research Center, 10300 Baltimore Avenue, Building 003, Beltsville, MD

The meeting began with introductions. Eric Almquist provided an overview of the Managed Lanes Study, the seven Screened Alternatives, and the status of the NEPA study. The preferred alternative is expected to be identified in the summer of 2019; Draft EIS in late 2019; and ROD in 2020. The study will prepare a combined FEIS/ROD. The cooperating federal agencies include USDA, USACE, EPA, and NPS (and others); FHWA is the lead federal agency. The Screened Alternatives were presented to cooperating and participating agencies at the Interagency Working Group (IAWG) Meeting held in February 2019. Alternatives Retained for Detailed Study (ARDS) and potential environmental impacts will be presented at the April 10th IAWG meeting.

Under the One Federal Decision rule, USDA agencies will be asked to use the same EIS as FHWA for completing NEPA. Therefore, USDA will need to review the EIS outline and provide relevant language for the document to allow approval of the EIS and facilitate a single Record of Decision. Dana Jackson also noted that the EIS should be coordinated with two USDA agencies: the USDOT Secretary's office and the Agricultural Research Service (ARS).

Justin Reel and Karl Hellman explained that the MLS will require a considerable amount of wetlands and waters mitigation and outlined their initial process in identifying potential mitigation sites on public land. Karl Hellman explained that initially the MDOT SHA NEPA Natural Resources Team conducted a desktop site search within potentially impacted watersheds using the MDOT SHA mitigation database and the Water Resource Registry. After identifying potential sites, teams of environmental scientists conducted a

“windshield survey” that consisted of investigating sites from the road right-of-way to determine their potential for mitigation purposes. Sites that appeared to have potential were investigated further with a site walk and ranked based on ecological uplift and construction feasibility criteria. The team is currently contacting public landowners to set-up meetings, like this one, to obtain feedback and discuss the sites that show high potential for mitigation.

- Action Item: Eric Almquist will provide the FEIS outline to Dana Jackson.
- Action Item: Maddy Sigrist will provide the Natural Resources Technical Report to BARC when it is complete.

A brief discussion of impacts from roadway improvements ensued and Dana Jackson explained that the Carver Center property, located next to the WMATA Greenbelt rail yard, is owned by USDA and transferring land from this property to FHWA may require a Department level decision, while other areas of BARC require Congressional action to transfer land to another federal agency. BARC would be interested in a maintenance agreement to ensure continued maintenance beyond the construction phase of any mitigation sites on their land.

The group first discussed the Paint Branch Fish Passage site. Dana Jackson explained that the fish passage project was reviewed by USDA BARC throughout the design process and approved with the current design. If major changes are planned, the project would have to go through the USDA internal review process again. If the project as designed works with any improvements that are planned by the P3 with only minimal modification, it can go through a brief re-affirmation process with USDA BARC and will not need to go through the entire internal review process again.

George Meyers asked why the second site was chosen as a potential mitigation site, because BARC does not have it on their list of areas that are in need of improvement. Daniel Spradlin and Matthew Drennon described the site. They explained that they split the site into two separate areas for assessment, since the western section is forested and the eastern section is more open. Daniel Spradlin explained that there is bank erosion and sloughing of the banks with no root protection along much of the reach. He explained that it would be beneficial to target the local sediment source and stabilize it, as well as connect the stream to its floodplain by lowering the banks. He suggested that the stream would benefit from bank grading and stability structures. USDA BARC was open to the idea of investigating this stream reach further as a potential mitigation site and mentioned that MCOG did a fish passage and riparian buffer restoration project in the middle section of the stream.

- Action Item: Dana Jackson requested that sediment reduction analysis be provided to them for this stream to use in the decision-making process.

USDA BARC is interested in reducing sediment loading to the Anacostia River. They identified several additional sites on their land that they would like the MDOT SHA NEPA Team to consider as potential wetland and stream mitigation sites. They also have stormwater BMPs that are in need of retrofitting. Justin Reel suggested that the NEPA Stormwater Team may need off-site stormwater credits and these could help them meet their need.

- Action Item: BARC will provide a shapefile of the potential additional mitigation and BMP sites to



Managed Lanes Study

the MDOT SHA NEPA Team.

The potential additional mitigation sites presented by BARC include:

1. Indian Creek Stream Restoration – North and south of Sunnyside Avenue. Downstream of an existing ICC mitigation site (IC-62) located just south of Powder Mill Road. This reach may need the most work near I-495.
2. Beaverdam Creek Tributary Stream Restoration – North and South of Beaver Dam Road.
3. Paint Branch Tributary Stream Restoration I - Exposed WSSC water line, just southeast of the I-495/I-95 Interchange.
4. Paint Branch Tributary Stream Restoration II – Small incised channel and exposed pipes just south of recommended BARC Site 3.
5. Paint Branch Stream Restoration and Floodplain Reconnection – In an area where Paint Branch is close to blowing out into the fields (from the USACE levy).
6. Little Paint Branch Stream Restoration – Section west of Ikea that is encroaching on sewer line.
7. Off-site stormwater management – Sheet flow erosion & headcut in the woods near E-line Road and North Drive (runoff from adjacent neighborhood).
8. Wetland mitigation/off-site stormwater management – Potentially convert lagoon to wetland creation/stormwater management site? Located near Yuma Street, fed by a SWM facility.

Dana Jackson explained that all of BARC is a historic district, but none of the potential mitigation areas involve historic structures, except perhaps the USACE levy (1972). Two projects on South Farm have broken through the levies and let water spread out, so impacting the levy is feasible, if necessary.

Dana Jackson asked when construction would likely begin if the road improvement were to go forward. Eric Almquist replied that construction could begin as early as 2023.

The remainder of the meeting was a site walk of some of the potential mitigation and stormwater areas on BARC property, including:

- Stormwater management area in need of repair south of I-495
 - Paint Branch Tributary Stream Restoration sites I and II
 - Off-site stormwater management site near E-line Road
 - Beaverdam Creek Stream Restoration
 - Beaverdam Creek Tributary Stream Restoration
- Action Item: MLS NEPA Team will draft an additional mitigation sites map for attendees to review to be followed with a request to amend the site walk access agreement to include these additional areas for field review.

**Maryland Department of Natural Resources Mitigation Coordination Meeting
I-495 & I-270 Managed Lanes Study
P3 Office Classroom
February 28, 2019 @ 1:00 pm**

Handouts: Agenda, I-495 & I-270 Managed Lanes Study Map, Mitigation Sites Maps, and DNR Policy (*Requests and conditions for mitigation projects on DNR land*).

A meeting was conducted on February 28, 2019 with representatives of the Maryland Department of Natural Resources (DNR) to discuss potential stream and wetland mitigation sites located on DNR properties for the I-495/I-270 Managed Lanes Study. A summary of the topics discussed at the meeting follows.

Introductions, Project Overview, and Status

The meeting began with introductions. Caryn Brookman provided an overview of the Managed Lanes Study, the seven Screened Alternatives, and the status of the NEPA effort. The preferred alternative is expected to be identified in the summer of 2019. A DEIS will be completed in late 2019. The study will complete a combined FEIS/ROD in 2020.

Mitigation Opportunities

Justin Reel outlined the traditional mitigation site search process that was used to identify potential mitigation sites on public land. The SHA NEPA Natural Resources Team conducted a desktop site search within potentially impacted watersheds using the MDOT SHA mitigation database that includes sites from the Water Resource Registry (WRR). After identifying potential sites, teams of environmental scientists conducted a “windshield survey” that consisted of investigating sites from the road right-of-way to determine their potential for mitigation purposes. Sites that appeared to have potential were further investigated with a site walk that included scoring the site based on construction feasibility and ecological uplift criteria. The NEPA team is currently coordinating with public landowners to determine if they are amenable to considering these sites for potential stream and/or wetland mitigation.

WSS-150087 – McKee Beshers Wildlife Management Area

Justin Reel confirmed that the potential wetland mitigation site located in the McKee Beshers Wildlife Management Area (WSS-150087) has been removed from the potential list of I-495/I-270 mitigation sites. DNR-WHS manages the site for woodcock and would like to avoid altering the landscape at this location. The NEPA Team will inform MDOT SHA to remove the site from their database so that the site is not included in future mitigation site searches.

MO_00047B – Strider Wildlife Management Area

Karl Hellmann gave a description of the existing site conditions at the potential stream mitigation site (MO_00047B) located in the Strider Wildlife Management Area. Upstream sections of the site appear less stable with 3-5 foot high vertical banks, while downstream sections near Seneca Creek appear more stable. A clearing along the western side of the channel that was likely used for past sewer repairs could potentially be used to access the site for restoration purposes. Jim Bennett stated that some of the existing undercut banks could be providing fish habitat and asked about the proposed design. Karl stated that some type of bank stabilization in combination with instream

habitat and floodplain access improvements could improve site conditions. Improving floodplain access would be limited in certain areas due to adjacent residential housing. Justin Reel clarified that the mitigation site boundaries displayed on the location map are conservative and would likely be revised after further field investigations.

MO_00063 – Seneca Creek State Park and MO_00064 – Seneca Creek State Park

The group agreed that it would be beneficial to schedule a field meeting to further discuss the existing site conditions and restoration potential at the the Strider Wildlife Management Area site (MO_00047B), the two Seneca Creek sites (MO_00063 & MO_00064), and any other additional mitigation sites that DNR recommends. Christine Conn stated that DNR was aware that the two Seneca Creek sites had potential for improvements. Shea Niemann stated that access along the existing sewer line for the Seneca Creek sites would require a temporary bridge and effect the disk golf course within the park. It was agreed that a field meeting would be scheduled sometime within the next four weeks to meet the NEPA Team's schedule.

Potential DNR Sites

DNR presented the following additional potential mitigation sites:

1. McKee Beshers Wildlife Management Area – Potential Wetland Mitigation Site. ~10 acres, area is currently a field.
2. Dierssen Wildlife Management Area – Two Potential Impoundment Retrofits located between Violets Lock and Pennyfield Lock along the C&O Canal Towpath. ~10 acres each. The impoundments were originally created for waterfowl habitat, but are not functioning as designed. They can only be accessed through C&O Canal towpath.
3. Seneca Creek Kayak Launch Area – Potential Stream Restoration

DNR stated that proposed mitigation sites should not be considered on state-designated Wildlands. Maryland Wildlands are areas of state-owned land or water that have retained their wilderness character or contain rare or vanishing species of plant or animal life or similar features worthy of preservation. Wildlands may include unique ecological, geological, scenic and contemplative recreational areas. Approximate locations of Wildlands are displayed on Maryland's Environmental Resource & Land Information Network (MERLIN), which is an online interactive map.

DNR Land Mitigation Policy

Mary Owens gave an overview of DNR's draft policy for mitigation projects on DNR land. A handout of the draft policy was provided at the meeting. The policy provides a framework for evaluating and approving mitigation projects proposed on DNR land by non-DNR state entities for regulated environmental impacts that occur outside lands owned and managed by DNR. The goal of the policy is to ensure that any mitigation projects allowed on DNR land meet the Department's standards for ecological benefit and are consistent with the Land Management Unit's management and public use objectives. Requests from State agencies will be considered, but only in the best interest of the Land Management Unit's management and public use objectives. Proposed sites for Chesapeake Bay TMDL credit will take priority over mitigation sites. Land Management Unit Internal Review is responsible for approving proposed mitigation sites. The agency pursuing mitigation must show due diligence in exhausting all other options on private property before submitting a formal mitigation

request to DNR. The proposed design must be approved by DNR during all phases of planning and construction. DNR stated that the draft policy should be followed for all currently proposed mitigation sites.

MO_00042 – Mathew Henson State Park Field Walk – Site PG 00120A/B

Karl Hellmann gave a description of existing site conditions of the potential stream mitigation site (MO_00042) located in Mathew Henson State Park. The site consists of a 2007 DEP stream restoration site that appears unstable. Most of the structures are buried or are unstable, and moderate to severe erosion is evident throughout the site with banks ranging from 5-15 feet high. Justin Reel stated that the NEPA team will need to confirm whether the restoration was used for mitigation and if the site can be used for future mitigation. DNR owns the parcel, however M-NCPPC maintains the park. DNR stated that any proposed work within the park will also require coordination with M-NCPPC.

Other Discussions

Eric Almquist stated that the NEPA team is also interested in potential offsite stormwater management opportunities. DNR mentioned a failing pond near the Greenway Trail that may have offsite stormwater management potential.

Gwen Gibson stated that Chris Homeister is the SHA internal reviewer for the project and should be included on all coordination involving DNR. Gwen also recommended contacting Ray Li (USFWS) and Jim Thompson (DNR) for ideas on pursuing fish blockage sites for mitigation purposes. Justin Reel stated that the Paint Branch Fish Passage site that was originally proposed for the Greenbelt Metro Project is now part of the I-495/I-270 mitigation package. Gwen stated that any proposed fish blockage mitigation sites will need to be in combination with other types of mitigation.

- The NEPA Team will confirm removal of Site WSS-150087 from the MDOT SHA site database.
- Action Item: Chris Homeister will provide the group with a list/locations of additional potential mitigation sites recommended by DNR.
- Action Item: SHA will send out a poll to schedule the mitigation site review field meeting.
- Action Item: Karl Hellmann will send digital copies of the site photos to DNR-MES that were provided at the meeting.

Attendees:

Name	Agency	Email
Jim Bennett	DNR-WHS	jim.bennett@maryland.gov
Candice Collison	DNR-WHS	candice.collison@maryland.gov
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Gwen Gibson	DNR-MES	gwendolyn.gibson@maryland.gov
Chris Homeister	DNR-MES	christopher.homeister@maryland.gov
Shea Niemann	DNR-MPS	shea.niemann@maryland.gov
Mary Owens	DNR – MPS	mary.owens@maryland.gov
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Stacy Talmadge	P3 NEPA / Blackwater Environmental	stalmadge@sha.state.md.us

**Maryland Department of Natural Resources Mitigation Field Review Meeting
I-495 & I-270 Managed Lanes Study
McKee Beshers Wildlife Management Area & Dierssen Wildlife Management Area
March 14, 2019 @ 12:00 pm**

Handouts: None

A meeting was conducted on March 14, 2019 with representatives of the Maryland Department of Natural Resources (DNR) to discuss potential wetland mitigation sites located on DNR properties for the I-495/I-270 Managed Lanes Study. A summary of the topics discussed at the meeting follows.

Introductions and Site Discussions

All participants met at the McKee Beshers Wildlife Management Area. The meeting began with introductions. Candice Collison provided a brief background on the potential wetland mitigation site located in the McKee Beshers Wildlife Management Area (WSS-150087) that was removed from the potential list of I-495/I-270 mitigation sites. DNR-WHS manages the site for woodcock and the site was planted with alders as part of the governor's Forest Brigade efforts. Many of the surrounding fields are maintained as scrub/shrub and brush habitat for various bird species.

Jim Bennett confirmed that the potential stream mitigation site (MO_00047B) located in the Strider Wildlife Management Area discussed in the February 28, 2019 meeting should not be considered for mitigation. Karl Hellmann responded that the site would be removed from the I-495/I-270 potential mitigation site list and MDOT SHA's mitigation database.

Mitigation Opportunities

McKee Beshers Wildlife Management Area

The group viewed and discussed the McKee Beshers Wildlife Management Area site recommended by DNR in the February 28, 2019 meeting. The site is an approximately 10 acre agricultural field, but no crops were planted at the time of the site visit. Candice and Jim stated that the field is usually farmed year-round, but the winter crop could not be planted last year due to high rainfall. The site floods regularly and a stream runs along the western border. DNR would be open to mitigation at this site and discussed mitigation with other outside companies about five years ago. DNR provided further information about the site, stating that many bird species would utilize the area if it was converted to wetland. Candice mentioned that 100 year floods may result in several feet of surface water on the site. She identified water control structures on the north and south side of the site used to control flooding in the adjacent forested habitat which mimics beaver behavior. These structures help provide proper wood duck habitat and are maintained to prevent beavers from blocking the structures.

The group discussed several mitigation strategies and logistics of property management regarding the McKee Beshers site. DNR suggested that implementing impoundments might provide ecological uplift in this area. They firmly suggested a scrub/shrub or emergent wetland rather than a forested wetland since much of the adjacent land is flooded forest. A hedgerow on the northern border of the site will be removed by DNR. The land is currently leased to a farmer who will plant the field this year, and the lease will expire at the end of 2019. DNR stated that they will re-negotiate the five-year

lease in the late summer/early fall of 2019, and if chosen for mitigation, could remove this area from next year's negotiation if provided enough notice. The next lease for the area is scheduled for the beginning of 2020. If notice is not provided before lease negotiations are necessary, DNR said they could re-negotiate the lease at any time since they own the land. However, DNR would have to work closely with the tenant farmer and would prefer to receive notice before a new lease is signed.

Dierssen Wildlife Management Area

The group drove to the Dierssen Wildlife Management Area and accessed the two potential impoundment retrofit sites via the C&O Canal towpath through Violets Lock. The two sites are each approximately 10 acres and are located near Pennyfield Lock between the C&O Canal towpath and the Potomac River. DNR stated that both potential sites were gifted to the state with a deed restriction that the land would be designated waterfowl habitat. DNR's design preference for both sites is emergent vegetation and grasses habitat that is flooded in the winter and drained in the summer. Coordination with National Park Service (NPS) would be required to achieve proper water levels at the sites because hydrology is interconnected to syphons installed in the C&O Canal, and water levels within the canal are currently too low to reach the syphon inlets. DNR was not aware of the operational status of the syphons.

DNR explained that surface water is frequently present in the western impoundment and it remains saturated throughout the year. The water control structure within this impoundment was functional, but aged and is frequently clogged with sediment. At the time of the site visit, a high amount of sediment was observed near the structure, but some appeared to have been washed away from the inlet and water was flowing into the structure. DNR identified the outlet pipe east of the control structure under a berm which discharged into a channel, then discharged into the Potomac River. The pipe was collapsed at its outfall location into the channel. DNR would like to repair function of the water control structure with preference to replace it as a part of mitigation efforts.

DNR explained that the eastern impoundment remains relatively dry in comparison to the western impoundment, although the area appears saturated enough to prevent tree growth because a grass species is the dominant cover. The water control structure in this impoundment was non-functional and full replacement would likely be necessary to restore functionality. The outlet pipe is likely damaged and/or clogged underneath the berm and the outfall was not visible at the time of the site visit.

The group discussed several challenges of implementing mitigation at the impoundments. Access must be negotiated with the NPS since they own the canal and the towpath is the only access path into the sites. The towpath at the nearest lock is accessed by a footbridge, therefore the installation of a larger bridge would be necessary to accommodate vehicles. Hydrology of the created wetland would rely heavily on the C&O Canal water levels and proper management of the syphons and water control structures. The repairs and/or replacement structures design and hydrologic design would be more complicated compared to traditional wetland mitigation. The impoundments may be considered for wetland enhancement credit instead of wetland creation credit due to current land use and water saturation levels, though the relatively dry impoundment may have some potential for wetland creation credit.

Other Discussions

Chris Homeister proposed another meeting to visit additional DNR recommended mitigation sites. The group agreed to set up future meetings based on Chris's proposed sites.

- Action Item: The NEPA Team will confirm removal of the Strider Wildlife Management Area stream site (MO_00047B) from the MDOT SHA site database.
- Action Item: Chris Homeister will provide the group with a list/locations of additional potential mitigation sites recommended by DNR.
- Action Item: The NEPA team will revisit the potential McKee Beshers and Dierssen sites recommended by DNR to rate the sites based on their potential for ecological uplift and construction feasibility.



Attendees:

Name	Agency	Email
Jim Bennett	DNR-WHS	jim.bennett@maryland.gov
Candice Collison	DNR-WHS	candice.collison@maryland.gov
Chris Homeister	DNR-MES	christopher.homeister@maryland.gov
Karl Hellmann	P3 / RK&K	Khellmann@rkk.com
Christina Simini	P3 / RK&K	Csimini@rkk.com

**Maryland-National Capital Park & Planning Commission Mitigation Coordination Meeting
I-495 & I-270 Managed Lanes Study
M-NCPPC Parkside Headquarters
March 20, 2019 @ 10:00 am**

Handouts: M-NCPPC Montgomery County Mitigation Sites Map & List, and USB drive with shapefiles of M-NCPPC mitigation site boundaries

A meeting was conducted on March 20, 2019 with representatives of the Maryland-National Capital Park & Planning Commission (M-NCPPC) to discuss potential stream and wetland mitigation sites located on M-NCPPC Montgomery County properties for the I-495/I-270 Managed Lanes Study. A summary of the topics discussed at the meeting follows.

Introductions, Project Overview, and Status

The meeting began with introductions. Caryn Brookman stated that the purpose of the meeting was to discuss the potential stream and wetland mitigation sites identified by the NEPA team on M-NCPPC Montgomery County parkland and M-NCPPC potential mitigation site recommendations. The group was provided with a site list and vicinity map of the potential mitigation sites. Permission to access potential M-NCPPC Prince George's County mitigation sites remains pending and therefore Prince George's County mitigation sites were not discussed.

Laura Connelly asked about the status of woodland conservation requirements for the project. Caryn Brookman stated that work on the woodland conservation requirements is ongoing.

Justin Reel outlined the traditional mitigation site search process that was used to identify potential mitigation sites on public land. The SHA NEPA Natural Resources Team conducted a desktop site search within potentially impacted watersheds using the MDOT SHA mitigation database. After identifying potential sites, teams of environmental scientists conducted a "windshield survey" that consisted of investigating sites from the road right-of-way to determine their potential for mitigation purposes. Sites that appeared to have potential were further investigated with a site walk that included scoring the site based on construction feasibility and ecological uplift criteria. The NEPA team is currently coordinating with public landowners to determine if they are amenable to considering these sites for potential stream and/or wetland mitigation.

Jai Cole asked about the project's proposed stream and wetland impact quantities so that M-NCPPC could get a better understanding of how much credit the NEPA team is pursuing for mitigation purposes. Justin Reel responded that the NEPA team is looking for less than 100,000 linear feet of stream mitigation and less than 50 acres of wetland mitigation. The NEPA team confirmed that the preferred type of wetland mitigation for the project would be palustrine forested wetland (PFO) creation. Caryn Brookman stated that SHA is taking a dual approach that consists of the NEPA team's traditional mitigation site search on public land, along with a request for proposals (RFP) to identify sites on private properties.

Mitigation Opportunities

The group proceeded to discuss the twelve potential stream sites (~36,957 LF) and two potential wetland sites (~12.1 creation acres) identified by the NEPA team on M-NCPPC Montgomery County parkland.

MO_00042 – Mathew Henson State Park

Matt Harper stated that DNR had been in contact with him regarding the Mathew Henson State Park stream site (MO_00042) that is owned by DNR and maintained by M-NCPPC. The site consists of a 2007 Montgomery County DEP stream restoration project that appears to be failing. Karl Hellmann stated that most of the restoration structures are buried or appear unstable and the site would likely need to be completely redesigned if pursued for mitigation. Matt Harper said that he would confirm the NPDES credits that were obtained for the project with DEP. Once the credits have been confirmed, the NEPA team will discuss the site with the agencies to determine if it has potential for Section 404 mitigation credit. Any proposed work at the site will require coordination with M-NCPPC and DNR.

MO_00013A, MO_00013B, WSS-150147A, and WSS-150147B – Lower MacGruder Branch Park

Karl Hellmann gave a description of the potential stream and wetland mitigation sites in Lower MacGruder Branch Park. The sites south of Watkins Road (MO_00013A & WSS-150147A) consist of an unstable channel with 3-4 foot tall vertical banks that are surrounded by an extensive floodplain dominated by reed canary grass. The stream site extends south to the confluence with Great Seneca Creek where there are scattered trees throughout the floodplain. The sites to the north of Watkins Road (MO_00013B & WSS-150147B) have similar conditions with some higher quality scrub-shrub wetlands and old field habitat to the east of the site. Considering the unstable stream conditions and the extensive open floodplain, the NEPA team thought these sites had good potential for a combined wetland/stream restoration project. M-NCPPC stated that both sites are within or partially within County designated Biodiversity Areas, which may limit proposed work at the site. Jai Cole stated that M-NCPPC would need to review the sites to determine what makes them Biodiversity Areas and the quality of the existing wetlands and that a scrub-shrub wetland creation may be preferred over a forested wetland creation. Justin Reel replied that any proposed mitigation sites on parkland will be designed to meet the goals of M-NCPPC.

MO_00018 – Heritage Farm Neighborhood Park

Karl Hellmann described the existing conditions of the Heritage Farm Neighborhood Park stream site (MO_00018). The site has 1-5 foot tall vertical banks with minor to moderate erosion, and is surrounded by forest with a few PFO wetlands just east of the stream. There is a remnant clearing from past sewer line work that could be used to access the site. M-NCPPC was not familiar with the site and would like to review the site in the field to determine its potential for restoration.

MO_00029 – Kensington Parkway Stream Valley Park

Jai Cole and Matt Harper described the existing conditions and history of the Kensington Parkway Stream Valley Park stream site (MO_00029), also known as Silver Creek. The adjacent residential community has raised concerns in the past regarding flooding on their properties following rain storms, specifically just north of where Silver Creek flows under the intersection of the Kensington Pkwy and Little Dale Rd. WSSC has repaired several sewer lines within the site and is currently investigating other potential areas for fixing and protecting sewer lines. Matt Harper said he would get an update from WSSC on the status of future repairs. Montgomery County DOT is proposing a

bridge replacement over Silver Creek that is scheduled for completion this summer. Matt said he could also request information from DOT on the bridge replacement if necessary. Justin Reel stated that the upstream section of Silver Creek that was not included in the mitigation site search, was removed from consideration on the Purple Line due to the site lacking potential for ecological uplift. M-NCPPC stated that the site had good potential for tree planting opportunities, non-native invasive treatment, and community involvement. M-NCPPC suggested that the team meet with the Mayor of Kensington if interested in moving this site forward. The NEPA team will address the flooding problem prior to considering the site for restoration. M-NCPPC offered to provide existing survey files for this area.

MO_00037 – Booze Creek Park

The Booze Creek Park stream site (MO_00037) site will be removed from the potential M-NCPPC mitigation site list based on M-NCPPC's guidance. The site consists of a failed stream restoration project that DEP is currently restoring.

MO_00038 – Norwood Park

Karl Hellmann gave a description of the existing site conditions at the Norwood Park stream site (MO_00038). The site has 4-8 foot tall banks with moderate to severe erosion and is surrounded by a forest with multiple sewer lines. Matt Harper said the site was another existing restoration project that was constructed by DEP for NPDES credit. The site will need to be coordinated with DEP and the agencies to determine the existing NPDES credit and if the site could be used for Section 404 mitigation credit.

MO_00047A – Gunner's Branch Local Park

Karl Hellmann described the Gunner's Branch Local Park stream site (MO_00047A). The site has 3-5 foot tall banks with moderate erosion and is surrounded by forest with a few open floodplain areas. There is some potential for small wetland creation/enhancement in the adjacent floodplain areas that are dominated by reed canary grass. There is a remnant clearing from past sewer line work to the west of the stream that could be used to access the site. M-NCPPC would like to visit the site to determine its potential for wetland enhancement and stream restoration.

MO_00051 – Little Falls Stream Valley Unit

The group discussed the existing conditions of the Little Falls Stream Valley Unit stream site (MO_00051). The site consists of an incised channel with moderate bank erosion that is surrounded by forest. There is existing access throughout most of the site from past sewer line repairs. Matt Harper stated that WSSC has done some consent decree work in the downstream section of the site and several bioswales have been constructed upstream of the site. M-NCPPC is interested in restoring the site and recommends extending the site boundaries to include the downstream concrete lined channel.

MO_00064 – Quince Orchard Valley Park

Karl Hellmann gave a description of the Quince Orchard Valley Park stream site (MO_00064). The upstream reach consists of a small unstable tributary in a steep/narrow valley that is owned by M-NCPPC. The downstream reach is a larger channel that has severely eroded banks with several sewer crossings. The entire site is surrounded by forest. There is potential access to the majority of the site through remnant clearings from past sewer line work. The NEPA team has discussed the downstream reach with DNR, and a site walk will be scheduled by DNR in the near future. M-NCPPC was not

Confidential, Deliberative and Pre-Decisional

familiar with the site and would like to review the site in the field to determine it's potential for restoration.

SSS-150021 – Rock Creek Regional Park

The Rock Creek Regional Park stream site (SSS-150021) is located in a County Biodiversity Area, which may limit proposed work at the site. The stream has 3-10 foot tall banks with moderate to severe erosion and is surrounded by forest. M-NCPPC will review the site in the field to determine the quality of the forest, why this is a Biodiversity Area, and whether the site has potential for restoration.

SSS-150023 – Wheaton Regional Park

The group discussed the Wheaton Regional Park site (SSS-150023) that is located near the Brookside Nature Center, which has expressed interest in restoration being done to this reach. The site has on average four-foot-tall banks with moderate to severe erosion and is surrounded by forest. The site is in a County Biodiversity Area, however M-NCPPC stated that natural resource impacts shouldn't be a concern since the site is adjacent to a roadway. M-NCPPC thought the site had potential for restoration and noted that the site has decent fish species due to its close proximity to Northwest Branch. M-NCPPC is restoring a reach upstream of this site and suggested that some of the area between the two sites may also be a candidate for restoration.

Potential M-NCPPC Sites

M-NCPPC Montgomery County presented the following additional potential mitigation sites:

1. Long Branch – Potential stream restoration, wetland enhancement, and biological uplift opportunities. The Purple Line is enhancing fish passage under Piney Branch Road, and M-NCPPC fixed a sewer line exposure in this area. M-NCPPC wants any future projects to tie into these two projects. M-NCPPC can provide survey files. Tributary to Sligo Creek – ~2,200 LF.
2. Rolling Stone tributary – Potential stream restoration adjacent to ICC site NW-4, upstream and downstream of Bonifant Rd. Includes a number of sewer line exposures, failing outfalls, and headcuts in need of stabilization. M-NCPPC has a lot of data they can share regarding biological uplift potential. Tributary to Northwest Branch – ~ 5,400 LF.
3. Bel Pre Creek – Potential stream restoration. Tributary to Northwest Branch – ~7,400 LF.
4. Wheaton Branch – Potential stream restoration – remove concrete trapezoidal channel and fish blockage. Tributary to Sligo Creek – ~2,200 LF.

Other Discussions

Eric Almquist requested that M-NCPPC send a shapefile of these and any other potential stream restoration and wetland creation sites that they would like the NEPA team to consider for mitigation. Matt Harper agreed to review their list of sites to identify those that he thinks meet the project parameters of > 1,000 LF. Jai Cole offered to send the list of wetland sites identified as good mitigation opportunities for the M-83 project.

Jai Cole recommended investigating other mitigation opportunities within the Sligo Creek, Northwest Branch and Rock Creek watersheds where project impacts will take place and suggested considering a lower stream length threshold in these areas. M-NCPPC also has interest in acquiring private property mitigation sites adjacent to parkland that are purchased by SHA for mitigation purposes. Jai Cole recommended that the NEPA team schedule monthly mitigation meetings with M-NCPPC, Confidential, Deliberative and Pre-Decisional

similar to what was done for the ICC.

Jai Cole asked about the timeframe for obtaining a park construction permit and submitting the projects for mandatory referral. Eric Almquist responded that the NEPA team is still early in the mitigation process and that these topics would be discussed in the future. Caryn Brookman stated that the NEPA team is currently working on a schedule for the mitigation process and will let M-NCPPC know what is determined regarding ongoing agency coordination.

The NEPA team will need permission to access the additional potential mitigation sites that M-NCPPC recommended. Jai Cole recommended a global access approval to cover all the mitigation sites. Carol Rubin will investigate a global access approval for the additional mitigation sites and obtaining approval to access potential M-NCPPC Prince George's County mitigation sites.

- Action Item: Matt Harper will coordinate with DEP on the NPDES credits that were obtained at the Mathew Henson State Park stream site (MO_00042) and the Norwood Park stream site (MO_00038).
- Action Item: The NEPA team will discuss the Mathew Henson State Park site with MDE and USACE to determine if the site has potential for Section 404 mitigation credit.
- Action Item: Matt Harper will investigate MacGruder and Rock Creek Regional Park Biodiversity areas to determine if this removes or limits their availability as candidates for restoration.
- Action Item: Matt Harper will get an update from WSSC on schedule of future repairs at Silver Creek site.
- Action Item: Matt Harper will provide survey files for Silver Creek site area, if needed.
- Action Item: The NEPA team will assess the flood problem at the Silver Creek site (MO_00029).
- Action Item: Matt Harper will request information from DOT regarding the Silver Creek bridge replacement, if necessary.
- Action Item: NEPA team will remove Booze Creek site from potential mitigation site list.
- Action Item: Carol Rubin will investigate a global access approval for the additional M-NCPPC Montgomery County mitigation sites and obtaining approval to access potential M-NCPPC Prince George's County mitigation sites.
- Action Item: Matt Harper will provide NEPA team with a shapefile of the sites discussed as well as additional sites M-NCPPC would like to be considered for MLS mitigation, including the list of wetland opportunities compiled for the M-83 project.
- Action Item: Matt Harper will schedule field visits to the following sites:
 - Lower MacGruder Branch Park stream & wetland sites (MO_00013A, MO_00013B,

WSS-150147A & WSS-150147B)

- Heritage Farm Neighborhood Park stream site (MO_00018)
- Gunner's Branch Local Park stream site (MO_00047A)
- Quince Orchard Valley Park stream site (MO_00064)
- Rock Creek Regional Park stream site (SSS-150021)

- Action Item: Caryn Brookman will let M-NCPPC know what mitigation coordination process will be going forward for the MLS.

Attendees:

Name	Agency	Email
Jai Cole	M-NCPPC / Mo. County	jai.cole@montgomeryparks.org
Matthew Harper	M-NCPPC / Mo. County	matthew.harper@montgomeryparks.org
Carol Rubin	M-NCPPC / Mo. County	carol.rubin@montgomeryplanning.org
Douglas Stephens	M-NCPPC / Mo. County	douglas.stephens@montgomeryparks.org
Laura Connelly	M-NCPPC / Pg. County	Laura.Connelly@pgparks.com
Eric Almquist	P3 / RK&K	ealmquist@rkk.com
Caryn Brookman	P3 / MDOT SHA	cbrookman@sha.state.md.us
Karl Hellmann	P3 / RK&K	khellmann@rkk.com
Erron Ramsey	P3 / RK&K	eramsey@rkk.com
Justin Reel	P3 / RK&K	jreel@rkk.com
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**Maryland Department of Natural Resources Mitigation Field Review Meeting
I-495 & I-270 Managed Lanes Study
Seneca Creek State Park
April 12, 2019 @ 9:00 am**

Handouts: None

A meeting was conducted on April 12, 2019 with representatives of the Maryland Department of Natural Resources (DNR) to discuss potential stream mitigation sites located on DNR properties for the I-495/I-270 Managed Lanes Study. A summary of the topics discussed at the meeting follows.

Introductions and Site Discussions

All participants met at the Seneca Creek State Park Offices. The meeting began with introductions. Shea Niemann provided a brief description of the three stream sites proposed by DNR near Game Preserve Road, Long Draft Creek, and Riffle Ford Road, and showed their locations on a park map. Shea confirmed that the two sites proposed by RK&K, sites MO_00063 and MO_00064, could be walked during the meeting.

Mitigation Opportunities

Game Preserve Road and I-270 Overpass

Shea began the site review by identifying a side-by-side culvert that had collapsed and subsequently repaired after a storm. Shea presumes that the culvert is SHA-owned. The stream is a tributary of Seneca Creek and on DNR-owned land. A DNR-maintained foot bridge that was immediately downstream of these culverts was washed out and had to be replaced in a different downstream location. DNR said that the tributary's main inputs are stormwater management ponds and runoff from residential neighborhoods. David Black observed that much of landscape surrounding this tributary and Seneca Creek in general is comprised of "legacy sediments." David explained the concept of legacy sediments – a term used to describe sediment deposited over the hundreds of years since human activity became a greater influence on the landscape, most commonly defined as the period from 1750 to the present. Karl stated that RK&K did not rate this tributary during initial mitigation site survey, but that RK&K could revisit and rate this tributary for inclusion in the site selection process.

The group observed a failed culvert and erosion area near an I-270 overpass just west of Game Preserve Road that are of DNR concern. Karl Hellmann determined, through GIS layers, that the culvert failure and erosion area are within SHA right of way (ROW) property. Shea pointed out these areas of failure/erosion because DNR owns the downstream portion of stream below the failure/erosion. RK&K stated that SHA is likely aware of the failure/erosion, but that RK&K would bring these areas to SHA's attention. RK&K stated that the failure/erosion areas could not be considered for mitigation credit since the gully is ephemeral.

Game Preserve Road near Railroad and Utility Easement

The group drove south on Game Preserve Road to a tributary identified by DNR. Karl stated that RK&K had reviewed the tributary during the walkthrough stage of the mitigation site search process. The tributary was small and appeared to have been previously surveyed. Karl explained that RK&K

would likely not include this portion of the tributary in mitigation credit consideration. Shea asked RK&K to clarify the types of channels and characteristics that are considered when surveying for mitigation eligibility. Karl explained that RK&K mainly considers the linear footage of the stream, the magnitude of ecological uplift that could be established, and examining the area with a wholistic approach.

Downstream of the small tributary, the group observed the area that RK&K had reviewed during their walkthrough investigation. Karl stated that RK&K would likely not include this site on the final list for mitigation due to the overall stability of the channel, the presence of bedrock, and the channel's close proximity to a road with no shoulder or pull-off areas. Access to this channel would be very limited, although DNR noted that WSSC had accessed and worked downstream of this location. Karl further explained the selection process and that access is one of the many factors that is considered when selecting mitigation sites. Karl stated that willing property owners are the first step of the process, then feasibility of access, cost, and conditions such as channel and bank stability are considered.

Riffle Ford Road

The group drove to Riffle Ford Road, a site identified by DNR along the mainstem of Seneca Creek for potential mitigation. The stream banks at this location have been undercut and eroded to approximately 10 feet above the water surface on one side. David identified this area as another example of legacy sediment. Shea stated that the magnitude and frequency of storms last year contributed to the bank erosion that is threatening the adjacent park trail. This site is downstream of a large culvert failure and potential SHA mitigation site number MO_00064. RK&K stated that this site would likely not be considered for mitigation purposes unless it was included as a part of the potential mitigation site just upstream (MO_00064).

Stream Mitigation Site MO_00064

The group walked upstream of Riffle Ford Road to the location of a pipe culvert failure underneath a DNR-managed trail. The culvert failure collapsed several pipes and the trail that had spanned the width of the pipes into the stream bed. DNR can no longer access the trail past the point of the culvert failure. WSSC previously used this path to access their work area further north along the trail, but only constructed a temporary access bridge over the pipe culvert. RK&K stated that the entrance to this area provides excellent stream access and parking/staging area if chosen for mitigation, and site number MO_00064 begins directly upstream of the culvert failure. RK&K stated that they would extend the potential mitigation site to include the culvert failure and channel downstream of the culvert.

LeAnne Chandler asked RK&K to explain the restoration methods that would be used at the proposed sites and whether RK&K favors one method over another. Karl explained that RK&K is still in the process of selecting/reviewing sites and does not have a specific proposed design type for any sites at this time. Karl stated that RK&K would work with each landowner and the agencies to collaborate on the specific design for each site. LeAnne emphasized that one of DNR's main concerns during site design and construction is tree clearing. Karl acknowledged that tree clearing plays an important factor in the site selection process and is minimized during site design, but some tree impacts may be required depending on the proposed design. Karl stated that RK&K would not propose a design that the landowner does not agree with.

David mentioned that RK&K water resources designs implement a method of hydraulic modeling that allows the designer to view how the design would affect the landscape and the shape of the stream before design is complete. Using hydraulic modeling allows the designer to make refinements, rectify mistakes, or examine discrepancies in real time. The method also demonstrates the amount of tree removal necessary before starting work and allows the team to adjust design around tree removal constraints. David stated that he could showcase some current projects if sites within Seneca Creek are included in the next step of the site selection process.

Stream Mitigation Site MO_00063

The group walked upstream along MO_00064 until its convergence with stream mitigation site MO_00063. The group decided to walk MO_00063 since it abuts the disc golf course. Access near the disc golf course presents a challenge because the course is open year-round. A large factor in the selection of this site by RK&K is whether some of the course can be closed during the mitigation construction process. A major concern for both DNR and RK&K is the presence of large trees within the stream channel that would need to be removed regardless of the selected design type. Karl emphasized that DNR should consider the magnitude of tree removal that RK&K may include with a proposed site design.

The group walked upstream along MO_00063 until its convergence with a smaller tributary that drains a stormwater pond located east of the disc golf course. The tributary flows through the course and into MO_00063, so portions of the course would need to be closed to access the channel. All parties agreed to keep MO_00063 under consideration, and RK&K emphasized that tree removal would likely be part of the proposed design. David discussed using smaller scale equipment and reusing removed trees within the constructed channel.

Long Draught Branch

The group drove to Long Draught Branch just east of Clopper Lake. Shea stated that extremely high sediment deposition in this area creates a large backwatered area which prevents canoe/kayak travel upstream of the lake. The tributary carries runoff from the City of Gaithersburg, and property upstream of this area is the property of the City. RK&K stated that the area on the DNR-portion of the tributary would not be eligible for mitigation credit, only the City-owned portion of the tributary. RK&K added that mitigating upstream would not likely benefit this area because the sediment deposition is mostly caused by the lake.

Disc Golf Course Access

The group drove to the disc golf course parking area near MO_00063 and MO_00064 to assess the viability of access through the northern portion of the course. The area between the course parking lot and the tributary leading to MO_00063 is managed grass area with mature scattered trees. Tree removal and closure of multiple course holes would be necessary if the tributary was accessed at this location. The preferred access route would likely be from the area of convergence with MO_00064 leading north and accessing MO_00064 from downstream of the course.

Other discussions

LeeAnne inquired about the amount of mitigation that is required for the project. RK&K stated that the amount is preliminary, but is a large number, and will likely change by the time the project is finalized. Karl clarified that the project is in the early stages of design and no specific number has been officially issued. The specific impact numbers will be released to the public in the near future.

Karl reiterated that the selection process for mitigation sites is to identify sites, meet with landowners, and examine landowner-suggested sites.

- Action Item: Karl stated that RK&K would revisit the small tributary and Seneca Creek mainstem near Game Preserve Road and I-270 to review the sites in further detail and include them in the mitigation site search selection process.

Attendees:

Name	Agency	Email
Shea Niemann	DNR-MPS	shea.niemann@maryland.gov
LeeAnne Chandler	DNR-MPS	leeanne.chandler@maryland.gov
Chris Homeister	DNR-MES	christopher.homeister@maryland.gov
Karl Hellmann	P3 / RK&K	khellmann@rkk.com
Christina Simini	P3 / RK&K	csimini@rkk.com
David Black	P3 / RK&K	dblack@rkk.com

Maryland-National Capital Park & Planning Commission Mitigation Coordination Meeting
I-495 & I-270 Managed Lanes Study
6000 Kenilworth Avenue Riverdale, MD 20737
June 20, 2019 @ 11:00 am

Handouts: Meeting agenda, M-NCPPC Prince George's County Proposed Mitigation Site Maps & Site List

A meeting was conducted on June 20, 2019 with representatives of the Maryland-National Capital Park & Planning Commission (M-NCPPC) to discuss potential stream mitigation sites located on M-NCPPC Prince George's County properties for the I-495/I-270 Managed Lanes Study. A summary of the topics discussed at the meeting follows.

Introductions, Project Overview, and Status

The meeting began with introductions. The group was provided with a site list and maps of the potential mitigation sites recommended by the NEPA Team.

- Karl Hellmann outlined the traditional mitigation site search process that was used to identify potential mitigation sites on public land.
 - The MDOT SHA NEPA Natural Resources Team conducted a desktop site search within potentially impacted watersheds using the MDOT SHA mitigation database.
 - After identifying potential sites, teams of environmental scientists conducted a "windshield survey" that consisted of investigating sites from the road right-of-way to determine their potential for mitigation purposes.
 - Sites that appeared to have potential were further investigated with a site walk that included scoring the site with the standard SHA rating system based on construction feasibility and ecological uplift criteria.
 - The NEPA team is currently coordinating with public landowners to determine if they are amenable to considering these sites for potential stream and/or wetland mitigation.
- Laura Connelly asked about the project's proposed stream and wetland impact quantities in Prince George's County so that M-NCPPC could get a better understanding of how much credit the NEPA team is pursuing for mitigation purposes.
 - Justin Reel responded that he did not have the breakdown by county with him. He explained that the mitigation process has proceeded with the understanding that there will be large impacts from the MLS and the NEPA team is therefore pursuing as much mitigation as possible.
 - All alternatives are still being refined, however the approximate stream impact is 90,000 linear feet, not including in-kind stream replacements, and about 20 acres of wetland impact.
 - Justin stated that SHA is taking a dual approach that consists of the NEPA team's traditional mitigation site search on public land, along with a request for proposals (RFP) to identify sites on private properties.
- Laura noted that of the eight potential mitigation sites proposed by the NEPA team, none appeared to be wetland sites. She said M-NCPPC leases its agricultural fields, which are not available for wetland mitigation and she is unaware of any land available for wetland mitigation.

- Crystal Hancock asked if it was possible for M-NCPPC to acquire an electronic file of the LOD.
 - Justin responded that upper management will not allow the LODs to be distributed electronically at this time.
 - He suggested M-NCPPC continue to follow-up with Caryn Brookman.
 - Crystal expressed that the project is asking participating and cooperating agencies to make decisions without providing them the ability to do their own due diligence. A GIS version of the LOD would allow the agencies to review the LOD against all of their GIS data quickly and efficiently. She indicated that requesting decisions on a preferred alternative without providing electronic LOD files puts the agencies in a difficult position.

Mitigation Opportunities

The group proceeded to discuss the eight potential stream sites identified by the NEPA Team on M-NCPPC Prince George's County parkland.

Site PG-00079 – J. Franklyn Bourne Pool

- Laura asked that the park name be changed from “Cabin Branch SVP” to, “J. Franklyn Bourne Pool Site”.
- Karl introduced the site, explaining that the total site is approximately 1,000 linear feet, with about 774 linear feet on parkland. The stream is highly-incised, with 10-foot vertical eroding banks. Karl suggested that the site has potential for in-stream habitat improvements, floodplain connection, and stabilization. The east side of the site has a sewer repair clearing that could be used as access from Valley Park Road.
- M-NCPPC suggested that the NEPA Team add the WSSC sewer easements to its mapping.
- Karl explained that the NEPA Team has looked at the concrete channel downstream of this site and determined that it had minimal functional uplift potential.
- Laura said that she wasn't sure if this site would be acceptable for mitigation or not, but that M-NCPPC would explore this possibility further.

Site PG-00097 – Henson Creek SVP

- Karl introduced this site as part of the mainstem of Henson Creek, extending about 1,400 linear feet downstream of Oxon Hill Road. A small section of the site is located on private property (historic church) and Prince George's County property. The outer bends of the stream are highly unstable and extensive deposition bars have formed on the insides of the channel. The site has potential for improvements to instream habitat, channel stability and floodplain connection. There is potential access along an old sewer line clearing to the west of the stream and an abandoned road (Broad Creek Church Rd) east of the stream.
- M-NCPPC stated that there is a WSSC easement at the site.
- M-NCPPC explained that the site is located in the Broad Creek Historic District and would require a historic work permit.
- Laura explained that Broad Creek Church Road is closed because of a dumping problem. Justin suggested that perhaps the road could be used for access and then removed and restored to floodplain as part of the mitigation project. Laura and Marie agreed that this might be a possibility, but this would have to be negotiated with the historic permitting group.
- Laura said that M-NCPPC has identified about 7.1 miles of Henson Creek as in need of restoration with areas of the stream that are unravelling, starting at the Oxon Hill Road trail

located upstream of the proposed site.

- Sonja Ewing agreed that a more comprehensive project like Henson Creek may be what M-NCPPC PG would want to prioritize.
- Colleen Regotti suggested that M-NCPPC confirm that there are no conflicts between the NEPA team recommended sites and sites that the Department of Environment (DOE) and the Clean Water Partnership have identified in their Watershed Implementation Plans (WIP) Program. There is a high demand for parkland and the WIP Program has a short timeline, so it will be helpful to have a better understanding of the MLS timeline in order to coordinate mitigation needs.
- Justin said that the MLS needs to have an approved Conceptual Mitigation Package by October 2020. Phasing of the study has yet to be determined, but PG County would likely be in one of the later phases and potentially programmed for about 3 years after 2020. MLS would likely focus on sites that are not a high priority for WIP, such as more expensive or challenging sites.
- Colleen said that the WIP projects tend to be small, self-certifying projects such as culvert repair projects and not full stream restoration projects.

Site SSS-160023 – Bald Hill SVP

- Matt Drennan introduced the site as including approximately 1,500 linear feet of stream that flows north to south. The upper 600 linear feet consists of braided channel that originates at a culvert under Route 50. The biggest potential for the site would be to replicate this braided condition at the downstream end of the site where the channel is incised with six foot tall eroded banks. There are a few active side channels that could also be restored. An existing WSSC easement has already been cleared and could be used for access. The floodplain is fairly open, with few trees, so little clearing would be required. Ecological uplift opportunities include floodplain connectivity, geomorphic stability through revegetation, bedform stability, and lowering stream temperatures with riparian plantings.
- Laura indicated that WSSC recently installed a new sewer line along this site.
- Matt added that the culvert at the top of the site appears to be a fish passage blockage and could be improved.
- Laura explained that the channel originates at a nearby stormwater pond, but removing the fish blockage would be worth looking into.
- Maria Martin stated that the site would need to be coordinated with WSSC.
- Sonja explained that the community around this area was suffering from flooding from work in the stormwater pond to the north of this site. It may be too soon to interrupt this community with further construction.

Site SSS-160039 – Anacostia River SVP

- Matt introduced the site as including approximately 1,500 linear feet of stream (420 LF on parkland) that flows south into Northwest Branch. The site consists of an incised channel with five foot banks. There is a fish passage blockage at the confluence with Northwest Branch. The channel was over-widened and appears to have been straightened in the past. Ecological uplift potential includes re-connection with the floodplain by narrowing the channel and adding riparian vegetation to provide bank stability and lower stream temperatures.
- Maria explained that the channel was widened in the 70s and 80s due to flooding issues

upstream after a Giant grocery store was flooded.

- Laura stated that the site is in the Chesapeake Bay Critical Area.
- This site is in a Capper-Cramton park and would have to be coordinated with the National Capital Planning Commission (NCPC) through M-NCPPC.
- Sonja indicated that this site would also have to be coordinated with the City of Hyattsville.
- Justin indicated that the site would probably be a lower priority, due to all of the past issues and numerous agencies that would need to be involved.
- Justin stated that the NEPA Team could provide a shapefile of the recommended mitigation sites to M-NCPPC for review.

Site SSS-160058 – Highland Park

- Karl summarized the existing conditions of the stream site that is approximately 1,300 linear feet. The site consists of a small channel that is deeply incised, with localized sections of moderate to severely eroded banks. Potential functional uplift includes reducing bank erosion and improving instream habitat. Extensive trash was observed within the site, which could be removed as part of the restoration to improve park aesthetics. The site has little to no potential for floodplain development due to the vicinity of adjacent residential houses and recreational ball fields. There is an overgrown sewer clearing north of the site that would require the removal of small trees to access the site.
- Laura stated that she is not familiar with the site and would have to investigate its potential for mitigation.
- Laura clarified to the group that all of the proposed NEPA team mitigation sites are for project wide impacts and not just impacts within Prince George's County. She indicated that mitigation on M-NCPPC land is a benefit to the State, because property does not have to be purchased or negotiated with numerous landowners, and a benefit to M-NCPPC because the restoration improves their resources.
- Crystal mentioned that once M-NCPPC receives the mitigation site shapefile from the NEPA Team, they will discuss internally to determine which agencies need to be involved in site coordination. M-NCPPC may need to share the sites with the DOE CIP Program, because they have a MOU with DOE and would like to avoid duplication. DOE mitigation sites can be viewed on their website under "Clean Water Map."

Site SSS-160063 – Paint Branch SVP I & II

- Matt described the existing conditions of the site that consists of approximately 1,500 linear feet (676 LF on parkland) along the mainstem of Paint Branch. The section upstream of parkland is located on numerous properties including WSSC, City of College Park, and Prince George's County. This site was chosen because it has the potential to connect upstream and downstream restoration sites. The channel is incised with eight foot tall banks and there is an exposed sewer line just downstream of the pedestrian bridge. The stream has alternating eroding banks with extensive deposition bars. There is existing access to the stream along the pedestrian bridge that bisects the site.
- Laura asked why the site was not extended upstream to Route 1 and downstream to the railroad tracks.
- Karl explained that the site originally extended from Route 1 to the railroad tracks, however these upstream and downstream segments were removed to avoid impacts to several University of Maryland forest conservation easements. The University of Maryland provided

the NEPA team with easement documentation that stated the easements could not be disturbed for mitigation purposes.

- Sonja explained that she thought this site could be very worthwhile, but would require careful coordination, since M-NCPPC is currently in coordination with the Board of Education for the land downstream of this site.

Sites SSS-160065 & SSS-160066 – Fletcher’s Field Park

- Matt introduced site SSS-160065 as including approximately 1,900 linear feet of stream that flows west into Northeast Branch. The upstream section is confined by adjacent parking lots and the downstream section opens up and is surrounded by grass lawn with scattered trees. The site is relatively open and would require minimal if any tree removals for access. The stream bank heights are approximately four feet tall throughout most of the site. There are two potential fish blockages and a few pedestrian crossings that confine the stream elevation and geometry. The stream appears to have been straightened in the past and is disconnected from the floodplain.
- Matt summarized the existing conditions of site SSS-160066 that includes approximately 1,500 linear feet of stream that flows southwest into SSS-160065. The upper section consists of 5-6 foot tall banks and the lower section has 3-4 foot tall banks. Erosion is localized to approximately 20% of the banks. The stream appears to have been straightened in the past and is disconnected from the floodplain. There is one potential fish blockage at the upstream culvert and no utilities were observed within the site.
- Sites SSS-160065 and SSS-160066 have potential for stream geometry improvements, riparian plantings, and trash removal. These improvements would improve the aesthetics of the park and provide experiential and education opportunities.
- Sonja said she thinks it would be very beneficial to provide a stream that the public can interact with and learn from in a well-used urban park within an underserved community that could use more amenities. She added that the clean-up element would be helpful in this high use area of the trail.
- M-NCPPC stated that the site is in a Capper-Cramton park and would have to be coordinated with the National Capital Planning Commission (NCPC) through M-NCPPC.
- Colleen mentioned that there is a bioretention/submerged gravel wetland project underway near the parking lot in this park, but it is not near the stream.

Other Discussions

- Laura said that due to the 3-year timeline, M-NCPPC did not want to provide their potential mitigation site list that consisted of projects with more immediate needs.
- Colleen said that they have shared their eight sites with DOE and would like to hear back from them before sharing the sites with MDOT SHA.
- Justin asked how quickly Colleen thought she would hear back from DOE and Colleen replied that she expected to hear back within a week. Justin clarified that the NEPA Team needs to have identified the sites they are pursuing for additional study by October.
- Sonja suggested the group reconvene in 30 days.
- Laura agreed that M-NCPPC would look through the potential sites in the next few weeks and come up with a list of sites to consider.

- Action Item: The NEPA Team will provide a copy of the sign-in sheet and meeting summary to M-NCPPC along with a shapefile of the potential M-NCPPC PG mitigation sites within a week.
- Action Item: M-NCPPC will coordinate internally in the next few weeks to determine potential mitigation sites.
- Action Item: The NEPA Team will schedule a follow-up meeting 30 days from this meeting.

Attendees:

Name	Agency	Email
Crystal Hancock	M-NCPPC / Pg. County	crystal.hancock@ppd.mncppc.org
Maria Martin	M-NCPPC / Pg. County	maria.martin@ppd.mncppc.org
Laura Connelly	M-NCPPC / Pg. County	laura.connelly@pgparks.com
Sonja Ewing	M-NCPPC / Pg. County	sonja.ewing@pgparks.com
Colleen Regotti	M-NCPPC / Pg. County	colleen.regotti@pgparks.com
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Justin Reel	NEPA / RK&K	jreel@rkk.com
Maddy Sigrist	NEPA/ RK&K	msigrist@rkk.com
Matthew Drennan	NEPA / CRI	matthewd@cri.biz

**Maryland-National Capital Park and Planning Commission Field Review Meeting
I-495 & I-270 Managed Lanes Study
Quince Orchard Valley Park
August 13, 2019 @ 12:30 pm**

Handouts: None

A meeting was conducted on August 13, 2019 with representatives of the Maryland-National Capital Park & Planning Commission (M-NCPPC) to discuss a potential stream mitigation site (MO_00064) located on M-NCPPC and DNR properties for the I-495/I-270 Managed Lanes Study (MLS). The meeting focused on the upstream reach located on M-NCPPC property. The downstream reach was discussed with DNR at a previous field meeting on April 12, 2019. A summary of the topics discussed at the meeting follows.

Introductions and Background Information

Participants met at the park access path off of Suffolk Terrace and proceeded south to the upstream end of the site. The meeting began with introductions. Karl Hellmann provided a brief background on the stream site. The upstream reach on M-NCPPC parkland consists of approximately 2,600 linear feet of a small channel located in a steep/narrow valley within the Quince Orchard Valley Park. This upstream reach converges with another small tributary before flowing into the larger reach on DNR parkland. The downstream DNR reach is approximately 3,700 linear feet of channel located in a broader floodplain within Seneca Creek State Park.

Karl mentioned that DNR is currently conducting their internal review of the restoration reach proposed on DNR property. At a previous field meeting, DNR mentioned some concerns with impacts to trees and their adjacent disk golf course. Karl and Matt agreed that even if DNR does not want to move forward with restoration on their property, the M-NCPPC reach could still be pursued due its length and potential for improvements.

Doug Stephens mentioned that they had reviewed potential MLS stream mitigation site MO_00018 (Heritage Farm NP) and MO_00047A (Gunner's Branch LP) and would send their recommendations on the sites following the meeting.

Site Walk & Discussions

The site walk began at the upstream end of the M-NCPPC reach, just south of Suffolk Terrace. The channel begins to degrade just downstream of a foot bridge, where the proposed restoration reach begins. The channel upstream of the bridge appears stabilized by bedrock outcrops and rip-rap, and was therefore removed from the proposed restoration site. Matt Harper agreed that the segment upstream of the bridge could be removed from consideration due to its stability.

The proposed reach downstream of the foot bridge has many unstable sections with torturous meanders and 4-5 foot tall vertical banks that are actively eroding. Potential site improvements identified during the NEPA team walkthrough evaluation included bank/bed stabilization, instream habitat improvements, and invasive species treatment. While the majority of the site appears unstable, some sections are stabilized by bedrock outcrops that are providing natural bank protection and grade control. Karl stated that restoration work would likely not be proposed in these

stable sections. Matt noted that the bedrock wouldn't be a concern for M-NCPPC, but it may limit the site's potential for instream habitat improvements.

Extensive herbaceous invasives, including wavy leaf basket grass (*Oplismenus undulatifolius*) and Japanese stilt grass (*Microstegium vimineum*), were observed in the floodplain during the site walk. Potential restoration efforts could include treating some of these invasive areas and replacing them with native species.

Doug confirmed through GIS data that there are two sewer lines and one water line located within the site. A few exposed sewer lines and a stormwater outfall on the verge of failing were observed within the site that could be replaced/stabilized as part of the proposed restoration. A small abandoned farm pond was also observed within the floodplain at the downstream end of the site. Doug stated that the pond could be drained and converted to a wetland as part of the restoration to remove its potential as a hazard to park users.

Karl stated that the small tributary at the downstream end of the M-NCPPC reach that flows under the power lines was removed from consideration due to its short length on M-NCPPC property. This tributary converges with the proposed M-NCPPC reach before flowing into the DNR reach.

M-NCPPC agreed at the end of the meeting that the site has potential for restoration and could be kept on the mitigation site list for the project. Although the surrounding area is forested, access to the M-NCPPC reach could be obtained with minimal tree impacts by using a previous WSSC access route that spans the entire site. Matt stated that M-NCPPC would like to consider the overall project impacts to resources on parkland and see the proposed mitigation package prior to making final decisions on specific sites. He concluded that MDOT SHA made a commitment to provide mitigation within close proximity to the project's proposed impacts, and M-NCPPC would like to see that commitment upheld. Karl stated that all of the sites will be reviewed and compared following completion of the walkthrough evaluations to determine which sites provide the greatest potential for functional uplift. Sites with the greatest potential will be included in the proposed draft mitigation plan and further reviewed with the agencies and landowners.

Action Items

- Matt noted that he would review the County's stream monitoring data for the site to get a better understanding of the existing stream conditions and potential for in-stream habitat improvements.
- Doug stated that he would update the proposed mitigation site list with M-NCPPC's latest recommendations based on their recent site visits.

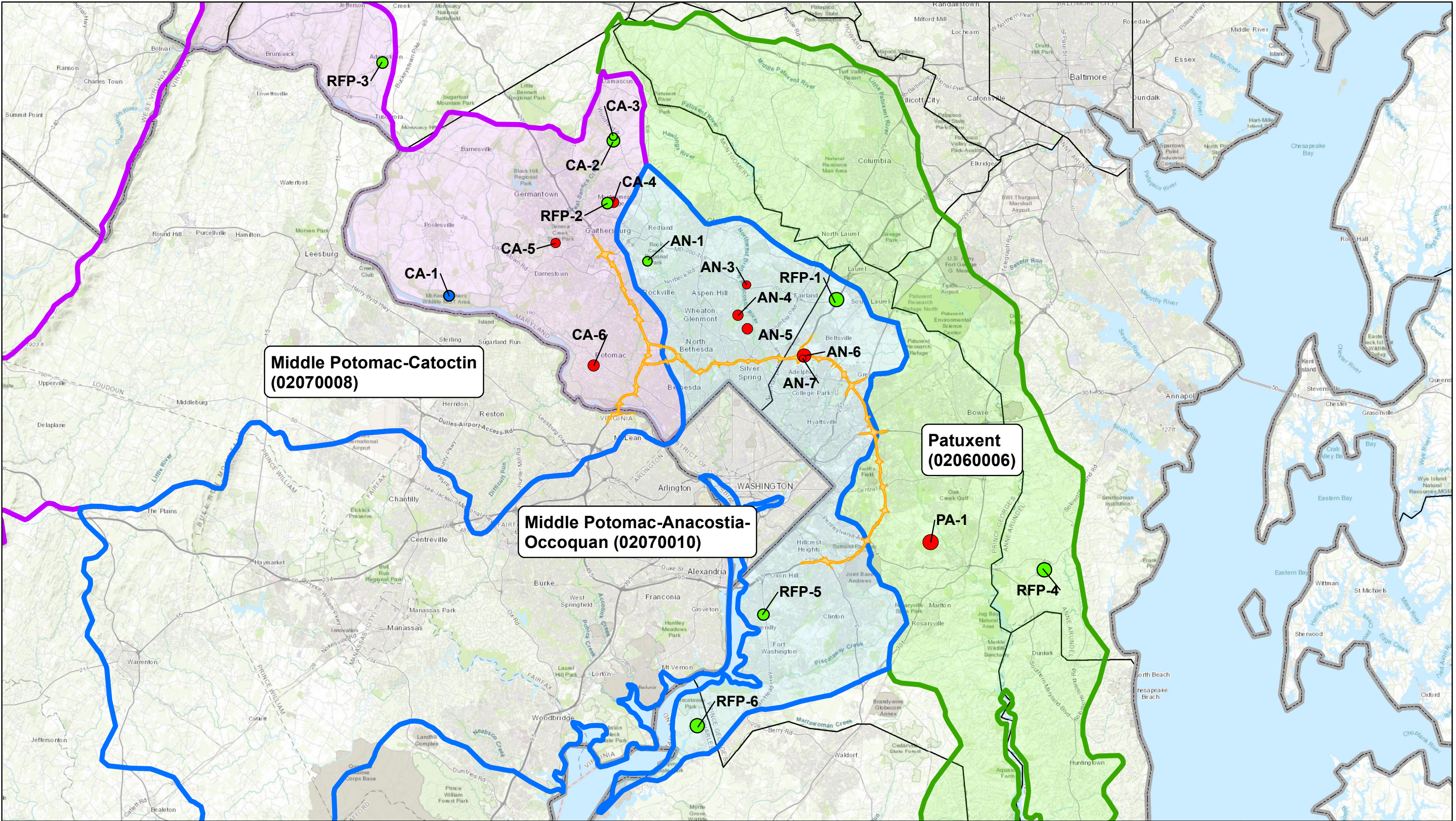


Attendees:

Name	Agency	Email
Matthew Harper	M-NCPPC / Mo. County Parks	Matthew.harper@montgomeryparks.org
Douglas Stephens	M-NCPPC / Mo. County Parks	Douglas.stephens@montgomeryparks.org
Karl Hellmann	P3 / RK&K	Khellmann@rkk.com
Alex Nussbaum	P3 / RK&K	anussbaum@rkk.com



APPENDIX H: POTENTIAL MITIGATION SITE VICINITY MAP & LIST



Legend

	State Boundary		Middle Potomac-Anacostia-Occoquan		Stream Sites
	MLS Corridor		Middle Potomac-Catoctin		Wetland Sites
	County Boundary		Patuxent		Wetland/Stream Sites

Targeted HUC8 Watersheds

	Middle Potomac-Anacostia-Occoquan
	Middle Potomac-Catoctin
	Patuxent

0 3 6 9 12 Miles

1 in = 6 Miles

Figure H-1. Potential Mitigation Sites Vicinity Map

Table H-1: Potential Mitigation Site List

Middle Potomac-Anacostia-Occoquan											
Site ID	Site Name	Database ID	County	Owner	Lat/Long	Location	Potential Wetland Credit (AC)	Potential Stream Credit (LF)	Comments	Status	Field Score
AN-1	Crabbs Branch	MPAO0032 & MPAO0012	Montgomery	M-NCPPC	39.11553546 -77.14594816	Southeast of Redland Rd. Crabbs Branch Stream Valley Park	3.50	4,276	M-NCPPC Recommendation. Crabbs Branch. High potential for overall ecological uplift. Potential for wetland creation/enhancement, channel stabilization, instream habitat improvements, floodplain development and riparian buffer improvements. Downstream floodplain is dominated by reed canary grass with extensive wetlands and scattered trees (4,500 LF). Groundwater observed 3.5 feet below surface in non wetland areas in August. The stream is deeply incised with 3-8 foot tall severely eroded banks throughout site. Upstream end of the stream reach is forested (~3,200 LF). Potential access through adjacent Derwood Station HOA roads.	Selected for Phase I Mitigation. Upstream 3,381 LF removed due to limited functional uplift potential & site constraints.	71/71
AN-3	Pebblestone Dr. Tributary	MPAO0014	Montgomery	M-NCPPC & South Stonegate HOA	39.092946 -77.016077	South of Bonifant Rd. Northwest Branch SVU 5.	0.00	2,162	M-NCPPC recommendation. Northwest Branch tributary. 3-8 foot tall severely eroded banks throughout site. Incised channel surrounded by poor quality forest with extensive invasives. Potential for sediment reduction, floodplain development, fish passage, invasive treatment, and aquatic habitat improvements. Potential access through old access used for adjacent ICC stream restoration project (NW-4).	Selected for Phase I Mitigation	58
AN-4	Northwest Branch Glenallen Ave. Tributary	SSS-150023	Montgomery	M-NCPPC & MCDOT	39.061106 -77.028795	South of Glenallen Ave. Wheaton Regional Park.	0.00	3,069	Northwest Branch tributary. High priority M-NCPPC site. Moderate bank erosion along 4 foot tall banks throughout most of site. Some localized severe bank erosion areas. Site surrounded by forest. Potential for sediment reduction, geomorphic stability, and instream habitat improvements. Potential access from adjacent road would require minimal tree clearing.	Removed due to limited functional uplift potential and site constraints	52
AN-5	Northwest Branch Lambertson Dr. Tributary	MPAO0021	Montgomery	M-NCPPC & MCDOT	39.065186 -77.028844	North of Lambertson Dr. Northwest Branch SVU 4.	0.00	1,784	M-NCPPC recommendation. Northwest Branch trib. Greater than 50% of reach with moderate to severe bank erosion. Channel surrounded by mature forest and steep valley slopes limiting floodplain development. Potential for lateral migration, geomorphic stability, aquatic habitat, and bedform diversity improvements. Several potential access routes exist through adjacent trails requiring some tree clearing.	Removed due to limited functional uplift potential	54
AN-6	Paint Branch Fish Passage	MPAO0033	Prince George's	BARC & SHA	39.021027 -76.945642	I-495/I-95 Interchange	0.00	5,258	Paint Branch Fish Passage Site provided by SHA EPD - 1,544 LF. Proposed removal of two fish blockages along the Paint Branch mainstem to fully re-establish fish access to 0.64 miles of upstream habitat, and partially re-establish upstream access to 26 miles of high quality fish habitat. The two blockages consist of quadruple-cell 10'W x 14' H box culverts that have both created a one foot vertical drop in water surface elevation.	Selected for Phase I Mitigation	40
AN-7	Paint Branch South Farm Tributaries	MPAO0001 & MPAO0003	Prince George's	BARC & SHA	39.018526 -76.949208 39.012977 -76.945156	East of I-95/I-495 Park & Ride. North of Marlborough Way.	0.00	1,401	BARC recommendations. Paint Branch tributaries. MPAO0001 - Upstream section is concrete lined and natural channel that is highly unstable with severe bank erosion and exposed sewer line. Middle section is incised but stabilized by tree roots. Downstream section has moderate localized bank erosion. MPAO0003 - Section downstream of culvert is unstable with two culverts (1 failure) creating fish blockages. Both sites surrounded by active agricultural fields and forest. Potential for sediment reduction, fish blockage removal, invasive treatment, and instream habitat improvements. Access from adjacent agriculture fields.	Selected for Phase I Mitigation	52/44
Site selected for Phase I Mitigation											

Table H-1: Potential Mitigation Site List

Middle Potomac-Anacostia-Occoquan											
Site ID	Site Name	Database ID	County	Owner	Lat/Long	Location	Potential Wetland Credit (AC)	Potential Stream Credit (LF)	Comments		Field Score
RFP-1	Indian Creek and Tributaries at Konterra	NA	Prince George's	Private	39.075833 -76.905555	East of I-95 from Konterra Dr. south to Ammendale Rd & west of I-95 from MD-198 south to Aitcheson Rd.	31.00	26,475	Indian Creek & headwater tributaries. Site consists of a former sand and gravel mine where most of the natural geomorphic conditions and materials have been altered or removed. The streams on the site are highly degraded with steep, actively eroding banks and degraded riparian buffers. The wetland mitigation area contains four abandoned settling ponds from past mining activities that are dominated by invasive species. Potential improvements include floodplain reconnection, bank stabilization, treatment and replacement of invasive species with native species, soil amendments, and establishment of hydraulic connection between wetland cells.	Selected for Phase I Mitigation	NA
RFP-5	Henson Creek	NA	Prince George's	Private	38.765172 -76.99663	West of Livingston Rd intersection.	5.85	1,091	Site consists of a former golf driving range located in the Henson Creek floodplain. The floodplain was filled when the property was developed and a spoil levee was constructed along portions of the left bank of Henson Creek. A small channelized stream flows along the southern border of the driving range that drains into Henson Creek. Improvements include removing portions of the levee, floodplain excavation, and realigning the small channel through the floodplain to create a fully integrated stream and wetland system.	Selected for Phase I Mitigation	NA
RFP-6	Mill Swamp Creek	NA	Charles	Private	38.655722 -77.081643	Intersection of Marshall Hall Rd. and Fenwick Rd.	10.35	1,554	Swamp Mill Creek and tributaries. Site consists of former farm property previously used for livestock ranching and traditional row crop production. The main channel of Mill Swamp Creek has been straightened and channelized. Potential stream restoration includes creation of bankfull benches, stream realignment, and introduction of woody materials, as well as the removal and relocation of existing corrugated metal pipe culverts. Wetland creation and enhancement is proposed by excavating the existing floodplain to target wetland elevations to create a fully integrated stream and wetland system.	Selected for Phase I Mitigation	NA
Middle Potomac-Catoctin											
CA-1	McKee Beshers	MPOC0001	Montgomery	DNR	39.079584 -77.392588	South of Hunting Quarter Rd. McKee Beshers Wildlife Management Area.	7.34	0	DNR recommendation. Site consists of active farm field with open water areas located in Potomac River floodplain. Groundwater observed 14" below ground surface in unsaturated areas in March. No hydric soil indicators observed, likely due to annual tilling. High potential for overall ecological uplift. Existing gravel road provides direct access to site with no tree impacts. Wetlands of Special State Concern north of site. No utilities observed within site.	Removed. Wetland mitigation credit needs met in watershed.	95
CA-2	Lower Magruder Branch	WSS-150147A & MO_00013A	Montgomery	M-NCPPC	39.232782 -77.188321	South of Watkins Rd. Great Seneca SVU 4.	7.98	2,934	Lower Magruder Branch. High potential for overall ecological uplift, including wetland creation/enhancement, channel stabilization, instream habitat improvements, floodplain development and riparian buffer improvements. Floodplain dominated by reed canary grass with scattered trees. Two large PEM wetlands in western floodplain dominated by cattail and reed canary grass. No wetlands observed in eastern floodplain. Groundwater observed 2.5 feet below surface in non wetland areas in November. No utilities observed within site. The stream has 3-4 foot tall banks with moderate to severe erosion throughout, and several torturous meanders. Potential Access from Watkins Rd. Site located just downstream of CA-3.	Selected for Phase I Mitigation	85/61
CA-3	Upper Magruder Branch	WSS-150147B & MO_00013B	Montgomery	M-NCPPC	39.235212 -77.187785	North of Watkins Rd. Magruder SVU 1.	2.27	1,053	Upper Magruder Branch. High potential for overall ecological uplift, including wetland creation/enhancement, channel stabilization, instream habitat improvements, floodplain development and riparian buffer improvements. Floodplain dominated by reed canary grass with scattered trees. Large reed canary wetland in western floodplain. Groundwater observed 2-3 feet below surface in non wetland areas. High quality PSS wetland just east of site. No utilities observed within site. The stream has 2-4 foot tall banks with moderate erosion throughout most of site. Potential access from Watkins Rd. Located just upstream of CA-2.	Selected for Phase I Mitigation	85/66
Site selected for Phase I Mitigation											

Table H-1: Potential Mitigation Site List

Middle Potomac-Catoctin											
Site ID	Site Name	Database ID	County	Owner	Lat/Long	Location	Potential Wetland Credit (AC)	Potential Stream Credit (LF)	Comments		Field Score
CA-4	Cabin Branch	MPOC0009	Montgomery	M-NCPPC & MCDOT	39.171692 -77.186706	East of Goshen Rd. Cabin Branch SVP.	0.00	3,457	M-NCPPC Recommendation. Cabin Branch. 3-6 foot tall banks with severe erosion throughout most of site. Majority of site surrounded by forest. Upland meadow along downstream reach. Potential for sediment reduction, floodplain development, aquatic habitat improvements, wetland creation, and riparian buffer plantings. Potential access throughout downstream section through upland meadow. Upstream section would require forest impacts.	Removed due to limited functional uplift potential and site constraints	53
CA-5	Seneca Creek Tributary	MO_00064	Montgomery	M-NCPPC	39.130300 -77.256461	East of Riffle Ford Rd. Seneca Creek State Park.	0.00	2,649	Seneca Creek trib. 3-6 foot tall banks with moderate to severe erosion throughout site. Several sewer line crossings and torturous meanders within site. Site surrounded by mid-successional forest in narrow/steep valley. Opportunities for ecological uplift include erosion reduction, and instream habitat improvements. Potential access along sewer line clearing.	Selected for Phase I Mitigation	53
CA-6	Rock Run	MO_00018	Montgomery	M-NCPPC & MCDOT	39.011277 -77.210914	South of Falls Rd. Heritage Farm NP.	0.00	3,723	Rock Run. 1-5 foot tall banks with minor to moderate erosion throughout site. Site surrounded by mid-successional forest with several scattered wetlands. Old sewer line clearing runs parallel to stream in eastern floodplain that could be used as potential access. Opportunities for ecological lift include sediment reduction, floodplain development, aquatic habitat improvements and fish passage.	Removed due to limited functional uplift potential and site constraints	43
RFP-2	Cabin Branch	NA	Montgomery	Private	39.1792 -77.2093	East and west of Montgomery Village Ave.	4.81	6,680	Cabin Branch and tributaries. Site consists of an incised channel located within the fairway of a former golf course. Existing stream conditions exhibit incised banks, disconnection to the floodplain, and bank erosion. The floodplain surrounding the channel was altered in the past to create fairways, ponds, and other golf course features. Potential improvements include relocating the stream channel into a more functional floodplain, adjustments to the stream channel dimensions to reduce hydraulic stress, increasing channel sinuosity, removal of non-native material from the stream channel, restoring ponds into hydraulically active floodplain wetlands, daylighting tributaries routed through pipes, and establishing and enhancing the riparian buffer.	Selected for Phase I Mitigation	NA
RFP-3	Tuscarora Creek	NA	Frederick	Private	39.3094 -77.4829	Southwest of Mountville Rd.	5.11	5,096	Tuscarora Creek. The site consists of an actively eroding channel with several torturous meanders and abandoned oxbows surrounded by a narrow forested buffer that was planted with trees over the last 10 years. The land surrounding the buffer consists of active agricultural fields. Potential improvements include a combination of lowering the floodplain and maintaining the invert in some sections, while keeping the channel in place and establishing a floodplain in other sections through the use of bankfull benches, bank grading, and other practices. Restoring floodplain access will promote the presence of floodplain wetlands in the form of ephemeral wetlands (oxbow features) and other active riparian floodplain conveyance/storage features.	Selected for Phase I Mitigation	NA

Site selected for Phase I Mitigation

Table H-1: Potential Mitigation Site List

Patuxent											
Site ID	Site Name	Database ID	County	Owner	Lat/Long	Location	Potential Wetland Credit (AC)	Potential Stream Credit (LF)	Comments		Field Score
PA-1	Back Branch	PG_00160	Prince George's	Board of Education, PG County DoE, PG County & Private	38.837228 -76.786687	North of Brooke Ln. Dr. Henry A. Wise Jr. High School.	0.00	6,742	Back Branch. 3-5 foot tall banks with moderate to severe bank erosion throughout most of site. Site surrounded by mid-successional forest. Potential for reducing erosion, instream habitat improvements and floodplain development. Access would require impacts to surrounding forest.	Selected for Phase I Mitigation	44
RFP-4	Cabin Branch	NA	Anne Arundel	Private	38.804391 -76.640356	North and South of Greenock Rd.	9.18	11,971	Cabin Branch and Wilson Owens Branch. The site consists of several deeply incised channels surrounded by mid-successional forests. The channels are disconnected from their surrounding floodplains and have lowered the seasonal high groundwater table in adjacent wetlands. Potential stream improvements include raising the bed elevations to restore floodplain connection, laying banks back to a stable angle of repose, creating bankfull benches and installing instream structures for grade control and in-stream habitat purposes. Reconnection to the historic floodplain will restore overbank flows to both existing and proposed wetlands as a source of wetland hydrology. Wetland creation areas adjacent to the stream channel will be excavated down to targeted elevations that will be in contact with the seasonal high groundwater table.	Selected for Phase I Mitigation	NA

Site selected for Phase I Mitigation